THE REPUBLIC OF TURKEY
ANKARA YILDIRIM BEYAZIT UNIVERSITY THE GRADUATE SCHOOL OF SOCIAL SCIENCES

INVESTIGATION OF NOMOPHOBIA AND RELATED PSYCHOLOGICAL VARIABLES WITH CROSS-SECTIONAL AND EXPERIENCE SAMPLING METHODS: THE EFFECT OF EMOTION DYSREGULATION, AFFECT, BOREDOM, PSYCHOPATHOLOGY, AND SOCIAL CONTEXT

PhD THESIS

Özge ENEZ

DEPARTMENT OF PSYCHOLOGY

Ankara, 2021

THE REPUBLIC OF TURKEY
ANKARA YILDIRIM BEYAZIT UNIVERSITY THE GRADUATE SCHOOL OF SOCIAL SCIENCES

INVESTIGATION OF NOMOPHOBIA AND RELATED PSYCHOLOGICAL VARIABLES WITH CROSS-SECTIONAL AND EXPERIENCE SAMPLING METHODS: THE EFFECT OF EMOTION DYSREGULATION, AFFECT, BOREDOM, PSYCHOPATHOLOGY, AND SOCIAL CONTEXT

PhD THESIS

ÖZGE ENEZ

DEPARTMENT OF PSYCHOLOGY

Prof. Dr. Özden YALÇINKAYA ALKAR

Ankara, 2021

APPROVAL PAGE

The thesis, prepared by Özge ENEZ and titled "Investigation of Nomophobia and Related Psychological Variables with Cross-Sectional and Experience Sampling Methods: The Effect of Emotion Dysregulation, Affect, Boredom, Psychopathology, and Social Context" is accepted by a unanimous vote as a doctoral thesis at Ankara Yildirim Beyazıt University, Institute of Social Sciences, Department of Psychology.

TITLE, NAME AND SURNAME		**Institution**	**Signature**
Prof. Dr. Özden YALÇINKAYA ALKAR		Ankara Yıldırım Beyazıt University	
Approval ☐	Rejection ☐		
Prof. Dr. İ. Soner YILDIRIM		Middle East Technical University	
Approval ☐	Rejection ☐		
Assoc. Prof. Dr. Hüdayar CİHAN		Ankara Yıldırım Beyazıt University	
Approval ☐	Rejection ☐		
Asst. Prof. Dr. Emine İNAN		Ankara Yıldırım Beyazıt University	
Approval ☐	Rejection ☐		
Asst. Prof. Dr. Ezgi TUNA KAYKUSUZ		Çankaya University	
Approval ☐	Rejection ☐		

Thesis Defense Date: September 3rd , 2021

I certify that this thesis fulfils the requirements to be deemed a doctoral thesis at Ankara Yildirim Beyazıt University, Institute of Social Sciences, Department of Psychology.

Acting Director of the Institute of Social Sciences

Assoc. Prof. Dr. Seyfullah YILDIRIM

_____

PLAGIARISM PAGE

I hereby declare that all information in this document has been obtained and presented in accordance with academic rules and ethical conduct. I also declare that, as required by these rules and conduct, I have fully cited and referenced all material and results that are not original to this work. Date (03-09-2021)

Name, Last name: Özge ENEZ

Signature:

This dissertation is dedicated to the memory of my father,

Mürsel ENEZ...

ACKNOWLEDGEMENTS

First and foremost, I would like to express my deepest appreciation and gratitude to my supervisor Prof. Dr. Özden Yalçınkaya Alkar for her constant support, advice, and understanding during my dissertation process. Her guidance and immense knowledge have encouraged me in all the time of my academic research and my dissertation. I could not have imagined having a better supervisor and mentor for my dissertation.

Besides my supervisor, I would like to thank the thesis examining committee members, Asst. Prof. Dr. Ezgi Tuna Kaykusuz and Asst. Prof. Dr. Emine İnan, for their insightful comments, support, encouragement during my thesis process, and also for their thought-provoking suggestions which incented me to widen my dissertation from various perspectives.

I would also like to express my appreciation to the other two members of the thesis examining committee, Prof. Dr. İ. Soner Yıldırım and Assoc. Prof. Dr. Hüdayar Cihan, for their precious feedback, constructive criticism on my dissertation, and worthful contributions to the final version of this dissertation.

I would like to give special thanks to Dr. George Jessup for his assistance in developing the Turkish version of the PIEL Survey. He was very kind, helpful, and patient throughout the process, and was always there for my questions.

In addition, I would like to thank all of my friends who had faith in me and trusted me that I could achieve my goals. They always listened to my complaints. I was lucky to have wonderful and encouraging friends who boosted my confidence whenever I felt hopeless and exhausted. In particular, I would like to thank my friend Senem Mitap, who has been there for me whenever I needed her since high school. I would also like to express my sincere thanks to my dear friend Selcan Kilis, who contributed to every page of my dissertation. I would like to thank my friend Ayşe Gül İçin, who is the master of words and my travelling companion to Ankara.

I would like to express my huge thanks to my mum Fatma Enez and my brother Onur Enez for their encouragement, unconditional trust and love. It would be impossible for me to complete my dissertation without their tremendous understanding and support in the past few years.

I would like to express my deepest gratitude and appreciation to my dad Mürsel Enez, who was the biggest supporter of my path to academia. Hoping that he somehow saw that I have kept my promise…

Finally, I might have forgotten to mention others who were directly or indirectly involved in my dissertation. Many thanks to all of you.

ABSTRACT

INVESTIGATION OF NOMOPHOBIA AND RELATED PSYCHOLOGICAL VARIABLES WITH CROSS-SECTIONAL AND EXPERIENCE SAMPLING METHODS: THE EFFECT OF EMOTION DYSREGULATION, AFFECT, BOREDOM, PSYCHOPATHOLOGY, AND SOCIAL CONTEXT

The present dissertation mainly aimed to investigate trait nomophobia, state nomophobia, and their associated psychological constructs. To satisfy this aim, two studies were conducted. Study 1 aimed to investigate the correlational association of trait nomophobia with trait emotion dysregulation, trait PA, trait NA, BP, and psychopathological symptom severity. Study 1 also aimed to investigate the predictive power of these variables on trait nomophobia. In Study 1, the cross-sectional design was preferred. Data was collected from a large university student sample with standard measurement tools (N= 505). Study 1 revealed that the variables were significantly correlated with trait nomophobia (except trait PA). The five-predictor model significantly predicted trait nomophobia. In Study 2, the initial aim was to investigate whether state-based psychological constructs (emotion dysregulation, PA, NA, boredom, and satisfaction with the social context) and trait-based psychological constructs (nomophobia, emotion dysregulation, PA, NA, BP) predict state nomophobia. The second aim was to investigate the variation of daily nomophobia scores during a week. In Study 2, two groups were created (non-nomophobia and nomophobia) to reach the aims. The ESM approach was preferred. Data was collected with the standard measurement tools used in Study 1 and momentary assessments via an MP application (PIEL Survey) (N= 42). Study 2 showed that state-based psychological constructs significantly predicted state nomophobia, but trait-based psychological constructs failed to impact state nomophobia (except trait nomophobia). Daily nomophobia scores decreased in a quadratic trend throughout the week. The decrease in the nomophobia scores of nomophobic individuals was less than non-nomophobic individuals. Nomophobic individuals had higher daily nomophobia scores than non-nomophobic individuals. The general findings suggest that despite being related, trait and state indicators of nomophobia are not interchangeable. It is possible to recommend that rather than trait assessment, state assessment should be used

to make inferences about temporal relationships between momentary psychological constructs.

Keywords: Experience sampling method, Growth model, Hierarchical linear modelling, Nomophobia, Random intercept and slope model.

ÖZET

NOMOFOBİ VE İLGİLİ PSİKOLOJİK DEĞİŞKENLERİN KESİTSEL VE DENEYİM ÖRNEKLEME YÖNTEMLERİYLE İNCELENMESİ: DUYGU DÜZENLEME BOZUKLUĞU, DUYGULANIM, CAN SIKINTISI, PSİKOPATOLOJİ VE SOSYAL BAĞLAMIN ETKİSİ

Bu tez çalışmasının genel amacı karakter-temelli nomofobinin, durumsal nomofobinin ve bu iki yapı ile ilişkili olabileceği düşünülen psikolojik yapıların incelenmesidir. Bu amaçları gerçekleştirmek için iki ayrı çalışma yürütülmüştür. Çalışma 1'de, karakter-temelli nomofobinin karakter-temelli duygu düzenleme bozukluğu, karakter-temelli pozitif duygulanım, karakter-temelli negatif duygulanım, can sıkıntısı eğilimi ve psikopatolojik semptom şiddeti ile korelasyonel ilişkisini araştırmak amaçlanmıştır. Çalışma 1'de bu değişkenlerin karakter-temelli nomofobi üzerindeki yordayıcı gücünü araştırmak da amaçlamıştır. Çalışma 1'de kesitsel araştırma deseni kullanılmıştır. Veriler, standart ölçüm araçları kullanılarak 505 üniversite öğrencisinden oluşan geniş bir örneklemden toplanmıştır. Çalışma 1, değişkenlerin (pozitif duygulanım hariç) karakter-temelli nomofobi ile istatistiksel olarak anlamlı düzeyde ilişkili olduğunu göstermiştir. Beş-yordayıcı regresyon modeli karakter-temelli nomofobiyi istatistiksel olarak anlamlı düzeyde yordamıştır. Çalışma 2'de, durumsal psikolojik yapıların (duygu düzenleme bozukluğu, pozitif duygulanım, negatif duygulanım, can sıkıntısı, sosyal bağlamdan memnuniyet) ve karakter-temelli psikolojik yapıların (nomofobi, duygu düzenleme bozukluğu, pozitif duygulanım, negatif duygulanım, can sıkıntısı eğilimi) durumsal nomofobiyi yordama gücünü araştırmak amaçlanmıştır. Çalışma 2'de bir hafta boyunca günlük nomofobi puanlarının değişimini araştırmak da amaçlanmıştır. Çalışma 2'de bu amaçlara ulaşmak için iki grup oluşturulmuştur (nomofobik olmayan grup ve nomofobik grup). Bu çalışmada deneyim örnekleme yöntemi kullanılmıştır. Veriler, Çalışma 1'de kullanılan standart ölçüm araçları kullanılarak ve cep telefonu uygulaması üzerinden anlık ölçümler alınarak 42 üniversite öğrencisinden toplanmıştır. Çalışma 2'de, durumsal psikolojik yapıların durumsal nomofobiyi istatistiksel olarak anlamlı düzeyde yordadığı ancak karakter-temelli psikolojik yapıların (karakter-temelli nomofobi hariç) durumsal nomofobiyi istatistiksel olarak anlamlı düzeyde yordamadığı bulunmuştur. Günlük nomofobi puanlarının hafta boyunca ikinci dereceden bir eğilimle azaldığı saptanmıştır. Nomofobik bireylerin günlük nomofobi

puanlarındaki düşüş nomofobik olmayan bireylere göre daha azdır. Nomofobik bireylerin nomofobik olmayan bireylere oranla daha yüksek günlük nomofobi puanlarına sahip olduğu bulunmuştur. Genel bulgular, ilişkili olmasına rağmen, nomofobinin karakter-temelli ve durumsal öngörücülerinin farklı olduğunu göstermiştir. Anlık psikolojik yapılar arasındaki zamansal ilişkiler hakkında çıkarımlarda bulunmak için karakter-temelli değerlendirmenin yerine durumsal değerlendirmenin kullanılması gerektiğini önermek mümkündür.
Anahtar Kelimeler: Büyüme modeli, Deneyim örnekleme yöntemi, Hiyerarşik doğrusal modelleme, Nomofobi, Rastgele kesen ve eğim modeli.

TABLE OF CONTENTS

ABSTRACT i
ÖZET iii
TABLE OF CONTENTS v
LIST OF ABBREVIATIONS ix
LIST OF FIGURES xi
LIST OF TABLES xii
1. INTRODUCTION 1
1.1. Nomophobia 5
1.1.1. Definition of Nomophobia 5
1.1.2. Dimensions of Nomophobia 5
1.1.3. Diagnostic Criteria of Nomophobia 6
1.1.4. Prevalence of Nomophobia 7
1.2. Problematic Phone Use 9
1.2.1. Mobile Phone Dependence and Nomophobia 9
1.2.2. Smartphone Addiction and Nomophobia 10
1.2.3. Fear of Missing Out and Nomophobia 12
1.3. Previous Studies on Nomophobia 13
1.4. Study Variables 17
1.4.1. Emotion Dysregulation 19
1.4.1.1. Trait Emotion Dysregulation and Nomophobia 22
1.4.1.2. State Emotion Dysregulation and Nomophobia 24
1.4.2. Positive Affect and Negative Affect 25
1.4.2.1. Trait Affect and Nomophobia 27
1.4.2.2. State Affect and Nomophobia 30
1.4.3. Boredom and Nomophobia 32
1.4.3.1. Boredom Proneness and Nomophobia 34
1.4.3.2. State Boredom and Nomophobia 35
1.4.4. Psychological Symptom Severity and Nomophobia 37
1.4.5. Satisfaction with The Social Context and Nomophobia 42
1.5. Aims of The Dissertation 44
2. STUDY I 47
2.1. Method 47

2.1.1. Participants 47
2.1.2. Measurements 48
2.1.2.1. Personal Information Form 48
2.1.2.2. Nomophobia Scale 48
2.1.2.3. Emotion Dysregulation Scale 48
2.1.2.4. Positive and Negative Affect Schedule 49
2.1.2.5. Boredom Proneness Scale 49
2.1.2.6. Brief Symptom Inventory 49
2.1.3. Procedure 50
2.1.4. Statistical Analysis 50
2.2. Results of Study 1 51
2.2.1. Demographic Information Analyses 51
2.2.2. Correlation Analyses 55
2.2.3. Regression Analysis 60
2.3. Discussion of Study 1 63
2.3.1. Demographic Characteristics of The Participants 63
2.3.2. Emotion Dysregulation and Nomophobia 65
2.3.3. Trait Affect and Nomophobia 68
2.3.4. Boredom Proneness and Nomophobia 72
2.3.5. Psychological Symptom Severity and Nomophobia 74
2.3.6. The Five-Predictor Model and Nomophobia 78
3. STUDY II 82
3.1. Method 82
3.1.1. Experience Sampling Method 82
3.1.2. Participants 85
3.1.3. Measurements 86
3.1.4. Procedure 88
3.1.5. Statistical Analysis 90
3.2. Results of Study 2 91
3.2.1. Demographic Information Analysis 91
3.2.2. Analyses of Trait Measures and ESM Data 92
3.2.3. Hierarchical Linear Modelling 94
3.2.3.1. The Random Intercept and Slope Model 94
3.2.3.2. The Growth Curve Model 101
3.3. Discussion of Study 2 108

3.3.1. Demographic Characteristics of The Participants 108
3.3.2. State Nomophobia 109
3.3.2.1. Emotion Dysregulation and State Nomophobia 111
3.3.2.2. Affect and State Nomophobia 113
3.3.2.3. Boredom and State Nomophobia 116
3.3.2.4. Satisfaction with The Social Context and State Nomophobia 118
3.3.3. Day of The Week and Daily Nomophobia 120
4. GENERAL DISCUSSION 124
5. CONCLUSIONS AND RECOMMENDATIONS 131
6. REFERENCES 136
7. APPENDICES 209
APPENDIX A: PERSONAL INFORMATION FORM 209
APPENDIX B: THE NOMOPHOBIA QUESTIONNAIRE TURKISH VERSION 210
APPENDIX C: THE DIFFICULTY OF EMOTION REGULATION SCALE TURKISH VERSION 211
APPENDIX D: THE POSITIVE AND NEGATIVE AFFECT SCHEDULE TURKISH VERSION 213
APPENDIX E: THE SHORT VERSION OF THE BOREDOM PRONENESS SCALE TURKISH VERSION 214
APPENDIX F: THE BRIEF SYMPTOM INVENTORY TURKISH VERSION 215
APPENDIX G: ETHICAL APPROVAL 218
APPENDIX H: INFORMED CONSENT FORMS 219
APPENDIX I: ASSUMPTIONS OF MULTIPLE REGRESSION ANALYSIS 221
APPENDIX J: PIEL SURVEY (ESM QUESTIONNAIRE) 226
APPENDIX K: DESCRIPTIVE STATISTICS FOR THE DROPOUT GROUP 228
APPENDIX L: RELIABILITY ESTIMATES OF THE MODELS IN THE RANDOM INTERCEPT AND SLOPE MODEL 229
APPENDIX M: THE FIGURES OF MOMENTARY PATTERN OF THE LEVEL 1 PREDICTORS, MOMENTARY NOMOPHOBIA PATTERN OF EACH PARTICIPANT, AND MOMENTARY NOMOPHOBIA PATTERN OF ALL PARTICIPANTS 230
APPENDIX N: DAILY NOMOPHOBIA PATTERN OF EACH PARTICIPANT 234
APPENDIX O: DAILY NOMOPHOBIA PATTERN OF ALL PARTICIPANTS BY GROUP 235
APPENDIX P: DAILY PATTERNS OF THE LEVEL 1 PREDICTORS 236
APPENDIX Q: DAILY MEAN VALUES OF THE LEVEL 1 PREDICTORS IN THE GROWTH CURVE MODEL 238

APPENDIX R: RELIABILITY ESTIMATES OF THE NULL MODEL, THE LINEAR GROWTH MODEL, THE QUADRATIC GROWTH MODEL, AND MODEL 3 239

APPENDIX S: RESIDUAL ANALYSES OF THE RANDOM INTERCEPT AND SLOPE MODEL 240

APPENDIX T: RESIDUAL ANALYSES OF THE GROWTH MODEL 245

APPENDIX U: CURRICULUM VITAE 247

LIST OF ABBREVIATIONS

AIC: Akaike information criterion

ANOVA: One-way analysis of variance

BCa: Bias-corrected and accelerated bootstrap

BIC: Bayesian information criterion

BP: Boredom proneness

BPS-SR: Short version of the boredom proneness scale

BS: Boredom susceptibility

BSI: Brief symptom inventory

CI: Confidence interval

CIUT: Compensatory internet use theory

Covid-19: Coronavirus

DERS: Difficulty of emotion regulation scale

DSM-V: Diagnostic and Statistical Manual of Mental Disorders Fifth Edition

EDR: Emotion dysregulation

EM: Expectation maximization algorithm

ER: Emotion regulation

ESM: Experience sampling method

FML: Full maximum likelihood estimation method

FoMO: Fear of missing out

GSI: Global severity index

HLM: Hierarchical linear modelling

ICC: Intraclass correlation coefficient

ICD-11: International Statistical Classification of Diseases and Related Health Problems Eleventh Edition

ICT: Information and communication technologies

MP: Mobile phone

NA: Negative affect

NMP-Q: Nomophobia questionnaire

Nomophobia: No-mobile-phone phobia

PA: Positive affect

PANAS: Positive and negative affect schedule

REML:	Restricted maximum likelihood estimation method
SCL-90-R:	Symptom checklist-90-revised
SNS:	Social networking sites
SP:	Smartphone
SPSS 23:	Statistical package for social sciences 23
TSI:	Turkey Statistical Institute
UGT:	Uses and gratifications theory
VIF:	Variance inflation factor
-2LL:	-2 Log Likelihood

LIST OF FIGURES

Figure 2. 1. Scatter plot for the homoscedasticity assumption of the residuals 221
Figure 2. 2. Boxplot of Cook's Distance 221
Figure 2. 3. Normal P-P plot for the normality assumption of the residuals 222
Figure 2. 4. Histogram for the normality assumption of the residuals 222
Figure 2. 5. Scatter plot for the linearity assumption between nomophobia and emotion dysregulation 223
Figure 2. 6. Scatter plot for the linearity assumption between nomophobia and positive affect 223
Figure 2. 7. Scatter plot for the linearity assumption between nomophobia and negative affect 224
Figure 2. 8. Scatter plot for the linearity assumption between nomophobia and boredom proneness 224
Figure 2. 9. Scatter plot for the linearity assumption between nomophobia and psychopathological symptom severity 225
Figure 3. 1. Momentary pattern of state nomophobia 97
Figure 3. 2. Daily pattern of nomophobia 102
Figure 3. 3. Momentary pattern of state emotion dysregulation 230
Figure 3. 4. Momentary pattern of state positive affect 230
Figure 3. 5. Momentary pattern of state negative affect 231
Figure 3. 6. Momentary pattern of state boredom 231
Figure 3. 7. Momentary pattern of satisfaction with the social context 231
Figure 3. 8. Momentary nomophobia pattern of each participant 232
Figure 3. 9. Momentary nomophobia pattern of all participants by group 233
Figure 3. 10. Daily nomophobia pattern of each participant 234
Figure 3. 11. Daily nomophobia pattern of all participants by group 235
Figure 3. 12. Daily pattern of emotion dysregulation 236
Figure 3. 13. Daily pattern of positive affect 236
Figure 3. 14. Daily pattern of negative affect 236
Figure 3. 15. Daily pattern of boredom 237
Figure 3. 16. Daily pattern of satisfaction with the social context 237
Figure 3. 17. Scatterplot of the level 1 errors and the linearity between the observed and fitted values 240
Figure 3. 18. Scatterplot of the level 2 errors and the linearity between the observed and fitted values 241
Figure 3. 19. Scatterplot of the level 1 errors and the linearity between the observed and fitted values 245
Figure 3. 20. Scatterplot of the level 2 errors and the linearity between the observed and fitted values 246

LIST OF TABLES

Table 2.1. Means, standard deviations, ranges, skewness and kurtosis values of the variables 51

Table 2. 2. Participants' demographic information 52

Table 2. 3. Means and standard deviations, and minimum maximum values of nomophobia scores 53

Table 2. 4. Results of independent samples t-test analysis in terms of gender 53

Table 2. 5. Differences in terms of nomophobia score between groups associated with demographic information 54

Table 2. 6. Correlations of emotion dysregulation with nomophobia and the dimensions of nomophobia 56

Table 2. 7. Correlations between nomophobia and the dimensions of emotion dysregulation 57

Table 2. 8. Correlations of positive affect with nomophobia and the dimensions of nomophobia 57

Table 2. 9. Correlations of negative affect with nomophobia and the dimensions of nomophobia 58

Table 2. 10. Correlations of boredom proneness with nomophobia and the dimensions of nomophobia 59

Table 2. 11. Correlations of psychopathological symptoms severity with nomophobia and the dimensions of nomophobia 59

Table 2. 12. Correlations between the Brief symptom inventory subscales and nomophobia 60

Table 2. 13. Means, standard deviations, and correlations with confidence intervals 61

Table 2. 14. Results of the multiple linear regression analysis 62

Table 3. 1. Descriptive statistics for those who completed the study 92

Table 3. 2. Summary of means, standard deviations, and one way analyses of variance test of the Study 2 variables according to the group 94

Table 3. 3. Means, standard deviations, ranges, skewness and kurtosis values of the variables for the level 1 and level 2 variables 95

Table 3. 4. Parameter estimates of the null model in the random intercept and slope model 97

Table 3. 5. Parameter estimates of Model 1 and Model 2 101

Table 3. 6. Parameter estimates of the null model in the growth curve model 103

Table 3. 7. Parameter estimates of the linear growth model and the quadratic growth model 106

Table 3. 8. Parameter estimates of Model 3 108

Table 3. 9. Means, standard deviations, ranges, skewness and kurtosis values of the variables for the dropout group 228

Table 3. 10. Reliability estimates of the models in the random intercept and slope model 229
Table 3. 11. Daily pattern of variables..... 238
Table 3. 12. Reliability estimates of the null model, the linear growth model, the quadratic growth model, and Model 3..... 239
Table 3. 13. Parameter estimates of the heterogeneous variance model and the homogeneous variance model 243
Table 3. 14. Reliability estimates of the heterogeneous variance model and the homogeneous variance model 244

1. INTRODUCTION

In the early 2000s, information and communication technologies (ICT) have developed rapidly and the mobile phone (MP) has become an indispensable part of modern life. Today, advances in mobile technology have led to a situation where many users are permanently on the internet and connected to other people (Vorderer et al., 2016). A smartphone (SP) has the standard features of an MP such as calls and has more advanced features such as internet connection (Gezgin, Hamutoglu, Gultekin et al., 2018). Besides, it can be used for a variety of purposes such as notepad, camera, music player, and navigation (Lee et al., 2014; Sirakaya, 2018).

Turkey Statistical Institute (TSI) reported that the number of MP subscribers was approximately 81 thousand in 1994, 52 million in 2006, 70 million in 2013, and 81 million in 2018 (Turkey Statistical Institute [TSI], 2018). More recently, TSI reported that 95.3% of the population over 16 years of age had an MP in 2020. The rate was 94.2% for the 16-24 age range, 98% for the 25-34 age range, and 99.8% for university students (TSI, 2020). While the number of MP users worldwide was 3.668 billion in 2016, it was 6.055 in 2020. This number is expected to increase to 7.516 billion by 2026 (O'Dea, 2021).

Similar to MP ownership, over time, social networking sites (SNS) and MP applications have become popular among university students (Uzun et al., 2016). An average person has more than 40 apps on the MP (Deng et al., 2018). As reported by Smith (2015), 91% of youth used the MP for social media, 75% of youth used it to watch videos, and 64% of youth used it to listen to music. Additionally, 22% of youth log on to social networks at least 10 times within one day and with over 150 times control their phones (Malik, 2018; O'Keeffe & Clarke-Pearson, 2011). Previous studies have also revealed that university students use the MP almost six hours a day (Andrews et al., 2015; Souza et al., 2020; Xu et al., 2015) and spend more than two hours in social communication applications (Xu et al., 2015).

During the coronavirus (Covid-19) pandemic, many countries have imposed lockdowns to control the spread of the Covid-19. The lockdowns have negatively affected people's daily lives, leading them to use digital technologies more than ever before. To protect themselves from the virus as much as possible, many individuals avoided physical contact with other people. During the Covid-19 pandemic, online communication and phone-based communication are convenient ways to keep in touch with others amidst social distancing rules (Arora et al., 2021). Especially during this period, the MP has allowed maintaining interpersonal contacts and fulfilling work or school duties. It has also enabled individuals to easily plan their daily routines and use their free time efficiently (Bratina, 2019). Moreover, during this period, university education was online in Turkey. Digital devices have enabled university students to continue their education. These are some of the positive aspects of MP use during the lockdown.

It is impossible to deny the benefits of the MP during the Covid-19 period. However, since it is a safe method to stay in touch with others and almost the only way to maintain social relationships during the pandemic, the fear of being separated from it and the MP use rate has increased rapidly. Especially in emergency situations, the inability to use the MP has generated more fear and anxiety than usual (Caponnetto et al., 2021). Moreover, for university students, not being able to use the MP was almost equal to not being able to access the education materials, potentially prompting a more intense fear of not being able to use the MP. Many studies have examined the impact of the Covid-19 on MP use. Recent reports revealed that individuals spent longer time on SNSs, messaging services, and entertainment services such as Spotify. For example, worldwide, 79% of young adults used the MP more as a direct result of the lockdowns (Watson, 2021). Worldwide, nearly two billion people used WhatsApp, 1.3 billion used Facebook Messenger, and 1.2 billion used WeChat in the first quarter of 2021 (Tankovska, 2021b). Similarly, it was reported that 47% of adults in America used FaceTime as a result of staying home (Johnson, 2021). 41% of respondents in America reported that they communicated more through messaging services during the pandemic compared to before the pandemic (Tankovska, 2021a). Likewise, 78% of adults in America used Facebook and 49% used Instagram, and 14% of participants reported that they uploaded more videos on YouTube and Tik Tok (Tankovska, 2021c).

Regarding the MP, it should be noted that the MP is not only a technological device because individuals form an emotional and a physical attachment bond with it (Hoffner et al., 2015; Keefer et al., 2012; Kolsaker & Drakatos, 2009; Konok et al., 2016; Nie et al.,

2020), and accept it as a source of safety (Fowler & Noyes, 2015; Trub & Barbot, 2016). Therefore, separation from it causes anxiety (Arpaci, 2017; Cheever et al., 2014; Clayton et al., 2015; Mannion, 2018; Parent, 2014), stress, proximity seeking behaviour (Han et al., 2017; Konok et al., 2017), and several intense negative emotions (Hoffner et al., 2015). Likewise, since the MP is used as external memory to store personal memories, it is perceived as part of the body (Han et al., 2017; Vincent et al., 2005). Also, since the MP is used to save social contacts, it is perceived as an extension of social identity (Konok et al., 2016; Walsh et al., 2009) and self (Harkin & Kuss, 2020). As reported by Shwetak et al. (2006), individuals kept the MP %58 of the time within arm's reach (within 1-2 meters of the user), especially when they were away from home. Similarly, it was found that individuals kept their devices 83% of the time in the same room when they were at home (Aharony et al., 2011). Another study reported that users kept the MP nearby even though they were not using it (Walsh & White, 2007). Moreover, Vincent (2011) investigated the emotional words individuals used to describe their interaction with the MP. The most commonly expressed emotions were anxiety and panic. The participants stated that they experienced these negative emotions because of the fear of losing connectivity with others and losing personal data contained on the MP. The participants also mentioned that it provides a sense of security. These studies can be accepted as evidence of the emotional and physical bond established with the MP.

Moreover, the MP is a habit-forming device due to notifications. It was found that individuals accepted approximately 64 notifications per day. Even if the MP was in silent mode, notifications were viewed within minutes, indicating that individuals constantly check the MP (Pielot et al., 2014). To investigate the effect of notifications, Pielot and Rello (2015) conducted a qualitative study in which participants used the MP in "do not disturb mode" for 24 hours. Without notification alerts, half of the participants were afraid and anxious to miss urgent or important information. Two-thirds of the participants were afraid to not be able to meet the expectations of others about responding to calls or messages immediately. In addition, one-third of the participants did not feel interrupted by notification sounds. Similarly, as reported by Grandhi and Jones (2010), 65% of the calls were answered and only 20% of the calls were missed unintentionally. Participants felt unhappy if the calls were missed. These studies clearly demonstrated that notifications create impulsiveness for immediate participation, and lead to the fear of staying away from the MP and compulsive controlling behaviours (Oulasvirta et al., 2012).

Before going any further, although it is explained in detail in Section 1.5, to provide clarity, the purposes of the dissertation can be briefly explained as follows. This dissertation mainly aimed to investigate trait nomophobia, state nomophobia, and their associated psychological constructs (See Section 1.1 and Section 1.4). In this dissertation, uses and gratifications theory (UGT) (Blumler, 1979) and compensatory internet use theory (CIUT) (Kardefelt-Winther, 2014) were used to determine variables that might be associated with trait nomophobia and state nomophobia (See Section 1.4). To satisfy the aim, two studies were conducted. In general, Study 1 mainly aimed to investigate trait nomophobia by using the cross-sectional study design. The cross-sectional study design was preferred because it is beneficial for investigating how individuals' trait-based characteristics are related to trait nomophobia. In particular, Study 1 aimed to examine the correlational association of trait nomophobia with trait emotion dysregulation, trait positive affect, trait negative affect, boredom proneness, and psychopathological symptom severity. Study 1 also aimed to reveal the predictive power of these variables on trait nomophobia. In Study 2, nomophobia was considered as a dynamic construct as well as a stable construct. In general, Study 2 mainly aimed to investigate state nomophobia by using the experience sampling method (ESM). Briefly, ESM is a real-time data collection strategy and has its roots in self-monitoring approaches (Trull & Ebner-Priemer, 2009). This method is defined as a structured diary method in which individuals are asked to report their thoughts, emotions, symptoms, and the current context (Myin-Germeys et al., 2009, p. 1533) (See Section 3.1.1). In particular, Study 2 aimed to investigate whether state-based psychological constructs (emotion dysregulation, positive affect, negative affect, boredom, and satisfaction with the current social context) and trait-based psychological constructs (nomophobia, emotion dysregulation, positive affect, negative affect, and boredom proneness) predict state nomophobia. Study 2 also aimed to investigate the systematic change in daily nomophobia during a week depending on the day of the week and determine the difference in the daily nomophobia patterns between nomophobic individuals and non-nomophobic individuals. In the following sections, more detailed information was given about nomophobia, the dissertation variables, and the aims of the dissertation.

1.1. Nomophobia

1.1.1. Definition of Nomophobia

Nomophobia is an abbreviation for no-mobile-phone phobia and is evaluated as a disorder of the modern world (Durak, 2019; Yildirim, 2014). The nomophobia term was first used in 2008 by the United Kingdom Post Office in a study to determine the concerns of MP users. 2163 users participated in the study. It was found that 53% of MP users tended to be anxious when they were not able to use the MP (Securenvoy, 2012). Later, nomophobia has been defined by several researchers. At first, it was defined as "denotes discomfort or anxiety when out of mobile phone or computer contact and fear of becoming technologically incommunicable, distant from the phone or not connected to the Web" (King et al., 2010, p. 52). More recently, nomophobia has been defined as discomfort, stress or anxiety caused by the absence of an MP or any other virtual communication devices in people who use these devices habitually (Yildirim, 2014). Currently, it is seen as the modern fear of not being able to use the MP (Oz & Tortop, 2018). The term nomophobe is used to define a person suffering from nomophobia. The term nomophobic is used to define the characteristics of nomophobes and the behavioral patterns associated with nomophobia (Yildirim, 2014).

Before explaining nomophobia in detail, it is worth mentioning that a smartphone has more advanced features than a standard phone such as mobile internet (Gezgin, Hamutoglu, Gultekin et al., 2018). In particular, the use of mobile internet encourages controlling behaviors due to applications that have regular updates and notifications. Therefore, the smartphone might cause individuals to display greater habitual controlling behaviors and these behaviors can lead to the development and maintenance of nomophobia symptoms (Turner et al., 2008), and so nomophobia should be considered in relation to smartphones (Park et al., 2013; Yildirim, 2014). Therefore, within the scope of this dissertation, nomophobia was discussed in relation to smartphones. For consistency, the abbreviation "MP" for the phone was used in this dissertation.

1.1.2. Dimensions of Nomophobia

According to Yildirim's conceptualization (2014), nomophobia includes four dimensions. The first one is named as not being able to communicate and it expresses the anxiety of being unable to communicate with others and to be communicated by others. This dimension is related to the feelings that arise as a result of losing instant contact with other

people and being unable to use the MP applications allowing instant communication. The second one is named as losing connectedness that refers to the negative emotions that emerge as a result of the disconnection or interruption experienced by individuals with their online identity on SNS. It is related to compulsive behaviors such as continuous control of notifications to ensure connectedness. The third one is named as not being able to access information that is related to the distress arising from losing access to information via the MP and not being able to seek any information stored in the MP. The last one is named as giving up convenience that expresses the discomfort arising from giving up the convenience of the MP and the desire to use the comfort of having an MP. For example, one of the most convenient commodities provided by the MP is having constant access to the internet regardless of time and place. When this comfort is not provided, individuals experience intense distress (Yildirim, 2014).

1.1.3. Diagnostic Criteria of Nomophobia

Currently, nomophobia has not been recognized as a diagnostic category in the Diagnostic and Statistical Manual of Mental Disorders Fifth Edition (DSM-V) (Diagnostic and statistical manual of mental disorders fifth edition [DSM-V], 2013) or the International Statistical Classification of Diseases and Related Health Problems Eleventh Edition (ICD-11) (International classification of diseases for mortality and morbidity statistics [ICD-11], 2018). In the literature, some researchers have examined nomophobia in the addiction category (Forgays et al., 2014; Hasmawati et al., 2020; Tran, 2016), but some researchers have argued that the use of the addiction concept suppresses the real meaning of nomophobia (King et al., 2014; King et al., 2010; Yildirim, 2014). As the term implies, nomophobia (no-mobile-phone phobia), nomophobes experience intense fear, anxiety and distress, if they cannot use the MP (King et al., 2010; Yildirim, 2014). Therefore, nomophobia may be more appropriate to be classified as a phobia in general and a situational phobia in particular (Yildirim, 2014). For this reason, within the scope of this dissertation, nomophobia was considered a kind of situational phobia.

To put it briefly, situational phobias are one of the five types of specific phobia defined in the DSM-5. Specific phobias involve blood-injection-injury phobias, animal phobias, situational phobias, natural environment phobias, and other phobias such as phobic avoidance of certain situations which may cause choking or vomiting. To meet the diagnostic criteria, individuals must have an intense fear triggered by a specific object or situation

(Criteria A) and exposure to them must cause fear and anxiety (Criteria B). Exposure to the feared object must result in avoidance or distress if avoidance is not possible (Criteria C) which is disproportionate to the real danger caused by the stimuli (Criteria D). The fear, anxiety, or avoidance needs to be permanent for at least six months (Criteria E). The fear, anxiety, or avoidance must cause deteriorations in school, work, interpersonal relationships, and family functioning (Criteria F). The fear, anxiety, or avoidance must not be better explained by another mental health problem (Criteria G) (DSM-V, 2013).

Although nomophobia is not recognized as a diagnostic category, Bragazzi and Puente (2014) established the first diagnostic criteria of nomophobia based on a comprehensive overview of the existing literature. The clinical features of nomophobia were defined as follows: having at least one MP and using it regularly; spending an excessive length of time with it; always carrying a spare battery or a charger; feeling anxious and nervous about losing the MP; feeling anxious about lack of network coverage, empty battery or lack of credit; avoiding the places where the MP use is prohibited such as theatres; checking the MP frequently to see whether messages and calls are received; keeping it switched on 24 hours a day; sleeping together with it; checking it just before sleeping and immediately after waking up; preferring virtual communication instead of in-person communication; having financial problems due to the MP bills or the purchase of expensive MPs. As can be understood from these criteria, nomophobia is characterized by fear and anxiety that is disproportionate to the real danger in the absence of the MP.

1.1.4. Prevalence of Nomophobia

Generation Z, individuals born between the mid-1990s and mid-2000s, are defined as the first true digital natives to abandon traditional computers for mobile devices (Ahn & Jung, 2014; Spencer, 2019). Today's undergraduate students are considered digital natives because they are the first generation to have the MP and other technologies readily available at a young age (Gentina et al., 2018). Generation Z generally believes that the MP enhances their social life and finds it impossible to imagine daily life without an MP. It is no longer a device for communication for this generation but an indispensable part of their daily routine. It is like a camera, computer, or music player and is used to have fun, relieve anxiety, and feel safe (Kwon et al., 2013; Takao et al., 2009). Erdem et al. (2017) reported that the nomophobia scores of university students were significantly higher than public employees' nomophobia scores. Considering the effects of MP on daily life, emotional life and identity,

young adults experience more anxiety and frustration and decreased sense of freedom in the absence of an MP than older individuals (Bernardini, 2018). Therefore, situations, where the MP cannot be used, cause more fear and panic in young adults than older adults (Hasmawati et al., 2020).

To give some examples from prevalence studies in the literature, a prevalence study revealed that 73% of Indian university students had nomophobia. 83% of the participants had panic attacks when they could not use the MP and 21% experienced phantom ringing syndrome (Sharma et al., 2015). A more recent study showed that 61.5% of Indian university students had moderate and 6.1% had severe nomophobia, and only one participant did not suffer from nomophobia (Sethia et al., 2018). Arora et al. (2021) investigated the prevalence of nomophobia among Indian university students during the Covid-19 pandemic. According to the results, 4.5% of students were at extremely high risk and 73% of students were at high risk. A comparative study between the Portuguese and the Spanish university students revealed that the Spanish and Portuguese students' nomophobia levels were above the average. However, the Spanish students' nomophobia levels were lower than the Portuguese students' nomophobia levels. The Spanish students (35.4%) felt less anxious than the Portuguese students (54.7%) when the MP battery was empty (Gutiérrez et al., 2014). Similarly, approximately one-third of university students in France had nomophobia (Tavolacci et al., 2015). Almost 20% of students in Poland and 10% of students in Belarus had nomophobia (Krajewska-Kulak et al., 2012). On the contrary, according to the results of research conducted in Kosovo, nomophobia levels of university students were below the average (Gezgin & Parlak, 2018).

In Turkey, a previous study showed that almost 43% of university students had nomophobia. Not being to communicate and not being able to access information dimensions were the most common dimensions among the participants (Yildirim et al., 2016). Similarly, the prevalence of nomophobia was above the average in high school students (Gezgin & Cakir, 2016). A comparative study was also conducted to determine the prevalence of nomophobia among Turkish and Pakistani university students. According to the results, Turkish students' scores were higher than Pakistani students' scores (Ozdemir et al., 2018). More recently, Gurbuz and Ozkan (2020) reported that 8.5% of the young individuals were severe, 71.5% were moderate, and 20.0% were mild nomophobic. Similarly, Dalbudak et al. (2020) reported that 30.1% of the university students were mild, 55.6% were moderate, and 14.3% were severe nomophobic.

1.2. Problematic Phone Use

Before going any further, it might be useful to explain problematic MP use to clarify the concept of nomophobia. Problematic MP use is defined as "an inability to regulate one's use of the MP, which eventually involves negative consequences in daily life" (Billieux, 2012, p. 299). Mobile phone dependence, smartphone addiction, nomophobia, and fear of missing out (FoMO) are different constructs with some similar features. These constructs are considered problematic MP use. These disorders are associated with MP connection anxiety and increase the duration of MP use. They may exist together and affect each other's severity (Durak, 2019). It is important to note that nomophobia should not be considered dependence or addiction, but it is comorbid with the other types of problematic MP use. Nomophobia's association with other forms of problematic MP use were briefly explained below.

1.2.1. Mobile Phone Dependence and Nomophobia

In general, dependence refers to a physical condition in which the body adapts to the presence of something and only functions normally in the presence of it. It is characterized by tolerance and withdrawal symptoms (National Institute on Drug Abuse, 2007). MP dependence does not always cause harmful consequences and is not necessarily permanent. Some individuals use the MP purposively such as searching for up-to-date news or checking e-mails which reflects individuals' demands for informational needs. Such dependence is considered functional dependence. In contrast, some individuals use the MP to meet their need for immediacy or perpetual contact rather than instrumental usefulness. They spend a lot of time on the MP without a specific purpose in mind. Such dependence is considered existential dependence. It is associated with psychological problems such as the sense of isolation and the fear of being disconnected from online identity. For existentially dependent individuals, the absence of the MP is equal to social isolation. These individuals are generally unaware of their dependence or the effects of dependence on daily life. Therefore, they believe that there is no need to change their MP usage habits. In contrast, functionally dependent individuals accept that they need to change their habits (Park, 2019).

Negative-positive reinforcement models claim that dependence emerges as a way of coping with negative emotions (Baker et al., 2004). Individuals' desire to avoid unwanted emotions (positive reinforcement) leads to problematic involvement with the MP (Wise &

Koob, 2014). Although MP dependence is in the form of using the most basic features of technological devices at the beginning, the desire to use the MP increases over time. Consequently, dependence can become problematic and result in an inability to turn off the MP and a feeling of emptiness without it (Kaviani et al., 2020). To explain in detail, existentially dependent individuals experience intense anxiety, restlessness, and distress when they are not able to use the MP (Park, 2019). For such individuals, the need to develop a social identity and connect to social identity are the main social and psychological drivers of MP dependency (Walsh et al., 2010). If connectedness and social identification encourage dependence on the MP (Kaviani et al., 2020), they may suffer from nomophobia especially due to the fear of being disconnected from their online identity. Similarly, functionally dependent individuals experience emotional distress without the MP because of the functional convenience or instrumental usefulness of it such as acquiring news or setting up a meeting (Park, 2019). Therefore, it is possible to say that functionally dependent individuals may also suffer from nomophobia. That is, over time, both functional and existential dependence may turn into nomophobia (Farooqui et al., 2018; Kaviani et al., 2020; Vezzoli et al., 2021).

1.2.2. Smartphone Addiction and Nomophobia

Smartphone addiction is also not recognized as a diagnostic category in the DSM-5 (DSM-V, 2013) or the ICD-11 (ICD-11, 2018). In general, addiction is defined as compulsive use of something despite negative consequences (National Institute on Drug Abuse, 2007). It is a permanent psychological condition that encompasses a compulsion to take a substance or engage in harmful behaviors (Park, 2019). In particular, SP addiction is defined as "excessive or obsessive use of smartphones, which will interfere with the daily lives of users and cause negative consequences" (Lee et al., 2014, p. 1). SP addiction falls under the category of behavioral addiction because it has some common symptoms with drug addictions such as relapse and withdrawal (Billieux, Maurage et al., 2015; Kwon et al., 2013). It also has some common features with other technology-based addictions such as internet addiction and online gaming addiction (Lin et al., 2016). However, it can be more dangerous because the MP is easily accessible and ready to use in any environment (Durak, 2019).

The dimensions of SP addiction are a disturbance in daily life, positive anticipation, withdrawal, cyberspace-oriented relationship, overuse, and tolerance (Kwon et al., 2013).

The daily life disturbance dimension is related to the detrimental effects of excessive MP use such as concentration problems, blurred vision, and deterioration in social life (Billieux, Philippot et al., 2015). The positive anticipation dimension is defined as feeling excited about MP use and feeling emptiness without it. The withdrawal dimension involves being impatient, restless, and intolerable without an MP, constantly thinking about it, and feeling depressed when its use is restricted. The cyberspace-oriented relationship dimension is associated with the preference of online relationships rather than more intimate in-person relationships (Kwon et al., 2013). The overuse dimension corresponds to the uncontrollable use of the MP and the difficulty in controlling impulses associated with MP use. Lastly, the tolerance dimension is defined as a significant increase in the frequency and duration of MP use to obtain the desired effects (Billieux, Philippot et al., 2015; Choliz, 2012; Kwon et al., 2013).

On the one hand, SP addiction and nomophobia cannot be considered unrelated disorders because they have some common features and symptoms (Bragazzi & Puente, 2014). The MP is a source of relief and comfort in both disorders. It is used compulsorily and the absence of it causes negative emotions in both disorders (Tran, 2016). Moreover, MP use is negatively reinforced to resolve emotional problems caused by MP deprivation. This means that in both disorders, not being able to use the MP causes repeated discomfort that can only be resolved by having the MP (Choliz, 2012). Moreover, both disorders involve behaviors such as carrying a charger, feeling the urge to check the MP constantly, and the inability to stop MP use in response to certain situations or affective states (Bragazzi et al., 2019; Choliz, 2012; Kwon et al., 2013).

On the other hand, SP addiction and nomophobia differ mainly in the way individuals behave with their MPs (Buctot et al., 2020). The term nomophobia emphasizes the intense anxiety, distress, and fear caused by the unavailability or inaccessibility of the MP (Yildirim, 2014). In nomophobia, the MP provides a sense of security and is used as a safety signal. Therefore, nomophobes need the presence of the MP even if they are not using it (King et al., 2014; King et al., 2010). Moreover, nomophobia encompasses the fear of not being able to use it for communication or information seeking and the fear of losing the conveniences provided by the MP rather than the amount of use. That is, the term indicates that individuals experience nomophobia when there is a possibility of not using the MP (Yildirim, 2014). However, individuals suffer from SP addiction when they excessively use the MP regardless of harmful consequences (Bian & Leung, 2014). In addition, considering the diagnostic

criteria of both disorders, SP addicts have more difficulty in performing work, social or family obligations due to their addictive behaviors compared to nomophobic individuals (Bragazzi & Puente, 2014; Lin et al., 2016).

Based on the literature, nomophobia and SP addiction can be considered as two closely related psychological problems (Buctot et al., 2020). It is not possible to say which disorder is the precursor, but there might be a bidirectional relationship between the two that increases the severity of each other. Some researchers found that nomophobia significantly predicted SP addiction (Mallya et al., 2018; Semerci, 2019). However, some researchers reported that SP addiction significantly predicted nomophobia (Cobanoglu et al., 2021; Khan et al., 2021). It is possible to assume that individuals who are at risk of SP addiction may be more likely to be afraid of being unable to use the MP and suffer from nomophobia (Buctot et al., 2020; Durak, 2019; Lepp et al., 2015). This means that the desire to avoid the symptoms of SP addiction (e.g. depression and craving) can trigger the fear of being away from the MP (Kwon et al., 2013). In other words, SP addiction may pose a serious risk for the emergence of nomophobia, although most SP addicts may not be aware that they also develop nomophobia (Anshari et al., 2019).

1.2.3. Fear of Missing Out and Nomophobia

FoMO is an acronym for "fear of missing out" and is defined as "the fears, worries, and anxieties people may have in relation to being in (or out of) touch with the events, experiences, and conversations happening across their extended social circles" (Przybylski et al., 2013, p. 1842). In FoMO, individuals have an intense desire to access their social media accounts. It is a compulsive concern that a user may miss the opportunity to participate in a satisfying social event that is announced through posts on SNSs (Dossey, 2013). In FoMO, social media is perceived as the main resource for communication, and a way to enhance social competence and strengthen social connections (Ellison et al., 2007; Przybylski et al., 2013).

SNS use is one of the most popular activities on the MP, with around 75% of Facebook users access their accounts via the MP (Statista, 2015). Therefore, it is not surprising that FoMO and nomophobia are related. Moreover, these disorders have some common symptoms such as anxiety and fear (Przybylski et al., 2013; Yildirim, 2014). However, FoMO is associated with problematic use of SNSs (Gezgin, Hamutoglu, Gultekin

et al., 2018) because some users are afraid of not being able to follow the posts shared on SNSs (Carbonell et al., 2013; Elhai et al., 2016; Oberst et al., 2017). Therefore, FoMO is more associated with the time spent on these sites, rather than the time spent on the MP. Likewise, it is more associated with the fear of not being able to access these sites, rather than the fear of not being able to use the MP (Mannion, 2018). Since SNSs are generally accessed through the MP, individuals suffering from FoMO are more likely to exhibit nomophobic behaviors. As evidence, a previous study reported that FoMO significantly predicted nomophobia (Muench & Muench, 2020). Similarly, another study found that the predictive power of FoMO on nomophobia was 41%. In particular, FoMO had high correlations with the not being able to communicate and losing connectedness dimensions, as the young adults communicate mostly via SNSs (Gezgin, Hamutoglu, Gultekin et al., 2018). These findings indicate that FoMO may lead to nomophobia. However, the reverse may not always be true because nomophobia is not limited to the fear of losing the connection with social media. Nomophobia is a broader term. As an example, another dimension of nomophobia is giving up convenience, which causes a desire to stay close to the MP for various reasons such as online shopping or online banking (Bragazzi & Puente, 2014). Therefore, nomophobia may not always lead to FoMO (Maeng & Arbeau, 2018).

1.3. Previous Studies on Nomophobia

King et al. (2010) conducted one of the first research on nomophobia. They aimed to investigate the association between panic disorder and nomophobia. This relationship was demonstrated through the case report of an individual with agoraphobia and panic disorder. The researchers claimed that the MP provided a sense of security and reduced the anxiety level of the patient, and was used as an anxiety medication that provides autonomy. Therefore, the patient became dependent on the MP instead of learning how to deal with difficulties. In this study, the researchers proposed that nomophobia should be included in the situational phobias group. Later, an experimental study was conducted by King et al. (2014) to understand the symptoms and emotional changes related to the absence of an MP. It was found that participants with panic disorder had more extensive mood changes and symptoms than healthy participants in the absence of an MP. They have claimed that the MP has a potential role as a safety signal for such patients. Yildirim (2014) also conducted one of the first studies on nomophobia to explore the dimensions of nomophobia and validate a

questionnaire to measure nomophobia. After the development of the nomophobia questionnaire, the number of nomophobia studies increased rapidly.

In the nomophobia literature, the association between personality and nomophobia has been investigated by many researchers. For instance, Villar et al. (2017) reported that although nomophobia was positively correlated with extraversion, it was negatively correlated with conscientiousness and neuroticism. Okoye et al. (2017) reported that extraversion, openness to experience, and neuroticism positively predicted nomophobia but agreeableness negatively predicted nomophobia. Oz and Tortop (2018) reported that nomophobia was positively associated with extraversion, conscientiousness, openness to experience, and agreeableness but negatively associated with neuroticism. Yogurtcu (2018) also reported that nomophobia was positively associated with extraversion and neuroticism but negatively associated with openness to experience. Similarly, Uguz and Bacaksiz (2021) showed that extraversion was negatively associated with nomophobia but neuroticism was positively associated with it. Olivencia-Carrion et al. (2018) investigated the relationship of nomophobia with temperament and character. They found that cooperation (character) significantly reduced the level of nomophobia, and reward dependence (temperament) was positively associated with nomophobia.

Previous studies also reported that nomophobia was associated with avoidant and anxious attachment styles (Arpaci, Baloglu, et al., 2017; Buyukcolpan, 2019), self-negative views, low self-esteem, low self-efficacy, a dysregulated arousal, high impulsivity (Bragazzi & Puente, 2014; Durak, 2019; Villar et al., 2017), loneliness (Chethana, 2020; Durak, 2018; Gezgin, Hamutoglu, Sezen-Gultekin, et al., 2019; Ozdemir et al., 2018; Pourmohseni-Koluri et al., 2020), low self-happiness (Ozdemir et al., 2018), social appearance anxiety (Ayar et al., 2018), locus of control (Durak, 2018), being single, low life satisfaction (Karademir & Kaya, 2020), worry (Polat et al., 2021), stress (Tams et al., 2018; Wolfers et al., 2020), low psychological resilience (Arpaci & Gundogan, 2020), unhealthy lifestyle (Buctot et al., 2020), maladaptive coping strategies (Bragazzi et al., 2019), difficulty in interpersonal communication (Eginli & Tas, 2019), and multitasking (Hasmawati et al., 2020).

Nomophobia was also found to be associated with several environmental factors such as family education level (Gezgin, Cakir et al., 2018), parenting style, urban life (Durak, 2018), high monthly income (Ozdemir & Arslan, 2019), and vertical collectivism (Arpaci,

2017). More recently, a twin study revealed that nomophobia was affected by both genetic and environmental factors (Deryakulu & Ursavas, 2019).

Previous studies also revealed that nomophobia was related to the type of MP and the purpose of MP use (e.g., social network and shopping) (Sirakaya, 2018). Nomophobia was also found to be positively correlated with the duration of MP use (Daei et al., 2019; Durak, 2019; Jilisha et al., 2019; Sirakaya, 2018; Yildirim et al., 2016), the duration of SNS and mobile internet use (Ayar et al., 2018; Celik & Atilla, 2018; Dalbudak et al., 2020; Durak, 2018; Gezgin, 2017; Gezgin, Cakir et al., 2018; Jilisha et al., 2019), the daily amount of MP checking behaviours (Buyukcolpan, 2019; Gezgin et al., 2017; Jilisha et al., 2019; Yildiz et al., 2020), and cyberloafing (Yakoub & Thouqan, 2021). In addition, several researchers revealed that nomophobia was associated with SP addiction (Durak, 2019; Semerci, 2019), problematic MP use (Kaviani et al., 2020), SNS addiction (Durak, 2018; Karademir & Kaya, 2020), internet addiction (Gezgin, Cakir et al., 2018), and FoMO (Gezgin, Hamutoglu, Gultekin et al., 2018; Maeng & Arbeau, 2018; Muench & Muench, 2020).

However, the relationship between nomophobia and gender has not been clarified yet. Some studies found that being female was related to nomophobia (Celik & Atilla, 2018; Gezgin, Cakir et al., 2018; Maeng & Arbeau, 2018; Mallya et al., 2018; Yildirim et al., 2016; Yilmaz et al., 2018), but some found that being male was related to nomophobia (Durak, 2019; Ozdemir et al., 2018). Some studies did not find a significant relationship between gender and nomophobia (Adnan & Gezgin, 2016; Dixit et al., 2010; Villar et al., 2017; Yildiz et al., 2020).

Similarly, some studies reported that young age was a significant determinant of nomophobia (Darvishi et al., 2019; Karademir & Kaya, 2020; Musa et al., 2017; Yildirim & Correia, 2015). Some studies reported that young age was associated with nomophobia (Bragazzi & Puente, 2014; Durak, 2018; Gezgin, Cakir et al., 2018; Jilisha et al., 2019; Yilmaz et al., 2018). However, some studies could not find a significant relationship between the two (Maeng & Arbeau, 2018; Villar et al., 2017; Yildirim et al., 2016).

Moreover, the impact of nomophobia on employees' work engagement and interruption, emotional exhaustion, and productivity was investigated. According to the results, some nomophobic employees felt more productive, but some tended to feel

emotionally exhausted and less productive. It was also found that nomophobia increased work interruption (Wang & Suh, 2018) and workload perception of employees (Erdem & Ercil, 2017; Hosgor et al., 2020).

In the field of education, on the one hand, some researchers have argued that if the MP is used productively in the classroom, it can contribute to student learning (Ledbetter & Finn, 2013; O'Bannon & Thomas, 2015). Likewise, more than half of the university students feel more confident in discussing new topics when an MP is in hand, two-thirds think that it can help in understanding the material being taught (Musa & Ishak, 2021). On the other hand, Pavithra et al. (2015) reported that 23% of students experienced concentration problems and stress when the MP battery was running out. Similarly, students who engaged with the MP in the class received 30 % lower marks in the exams than those who did not engage with it (Froese et al., 2012). In particular, texting and SNS use in the classroom cause distraction and increased multitasking (Bowman et al., 2010). These behaviors are also associated with slower reading, less note-taking, less recall (Chen & Yan, 2016), and digital amnesia (Musa & Ishak, 2021). Therefore, several researchers have investigated the effect of nomophobia on academic achievement. These studies have shown that nomophobia has a negative effect on learning outcomes and academic achievement (Ahmed et al., 2019; Jilisha et al., 2019; Lee et al., 2017; Louragli et al., 2018; Mendoza et al., 2018; Prasad et al., 2017; Torpil et al., 2020), and it is one of the most important predictors of MP use for non-instructional purposes in the classroom (Sumuer et al., 2018). Moreover, nomophobia leads to attention deficit (Kirac, 2019), adjustment problems in social and professional spheres (Sachdeva et al., 2018), and worsening intellectual thinking skills (Sahin & Bulbuloglu, 2021). Therefore, it is important to conduct nomophobia studies with university students. So that university students can have productive learning environments.

Lastly, there are also some qualitative studies on nomophobia. For instance, Onal (2019) conducted a qualitative study to investigate adolescents' feelings about the absence of the MP. The participants said that staying away from the MP was equal to the loss of significant others and loss of identity. The most frequently used words to explain the MP were life, friend, and necessity. The most common words used to explain MP deprivation were death, loneliness, and emptiness. Another qualitative study was conducted by Gezgin et al. (2019) to identify pre-service teachers' metaphorical perceptions of nomophobia. The most repeated metaphors for nomophobia were loneliness and nothingness. Similarly, Han et al. (2017) conducted semantic network analyses on individuals' explanations of the

meaning of the MP. The most frequently used words to describe the MP were life, information, time, convenient, contact, people, friend, and my. They also found that some words were only used by the nomophobes such as every, alone, concentration, hurt, and want. The words such as game, comfortable, human, and efficient were only used by individuals who had a low level of nomophobia. Previous studies examining the relationship between the variables of this dissertation and nomophobia were given in the following sections.

1.4. Study Variables

In this dissertation, uses and gratifications theory (UGT) (Blumler, 1979) and compensatory internet use theory (CIUT) (Kardefelt-Winther, 2014) were used to determine variables that might be associated with nomophobia. Although these theories are related to internet, digital technology and media use, they are also used to conceptualize nomophobia (Durak, 2019). In addition, in this dissertation, attention has been paid to ensure that the study variables can be evaluated with standard measurement tools and are also suitable for momentary assessments.

To briefly explain these theories, UGT is a mass communications theory and posits that media users are active and independent in the selection of media content. According to UGT, individuals have different ways of using the internet depending on their needs and situational context. That is, individuals make intentional choices among available media content based on their cognitive, personal integrative, and affective needs (Blumler, 1979). Cognitive needs are related to curiosity and exploratory drives, and serve to understand the environment. Therefore, mass media and the internet are used for self-development by some users. Personal integrative needs are associated with strengthening the credibility and confidence of the individuals. Some individuals use the internet and media to increase self-esteem, and to reduce loneliness and social alienation. Affective needs are associated with the desire to strengthen pleasant emotional experiences, and media and the internet are used for these purposes (Black & Bryant, 1995). All these motivations and needs impact users' preferences to use mass media and the internet (Elhai & Contractor, 2018; Elhai et al., 2019). Moreover, according to UGT, the underlying motivations for technology use are instrumental motivation and habitual motivation. In the first one, individuals use technological devices intentionally to achieve a specific goal. That is, technology is used for

productivity and communication (Lukoff et al., 2018). In the second one, individuals use technology habitually such as habitual checking of notifications from SNSs (Rubin, 2009; Rubin, 1984). Lastly, UGT argues that the uses and gratifications of the internet also differ depending on the current context due to immediate access gratifications (Leung & Wei, 2000).

UGT is relevant to nomophobia because of its origins in the communications literature (Whiting & Williams, 2013). One of the main purposes of MP use is communication, and nomophobia is associated with an intense fear of not being able to communicate, losing connectedness, not being able to access information, and giving up convenience (Yildirim, 2014). Therefore, these needs can lead to problematic use of the internet and media, as well as cause nomophobia. Moreover, given that the MP can satisfy users various media gratifications such as watching TV, attending an online meeting, and shopping (Deng et al., 2018), the UGT framework helps to conceptualize nomophobia.

CIUT (Kardefelt-Winther, 2014) can be seen as an extension of UGT (Elhai & Contractor, 2018) but its main focus is on psychopathology in explaining problematic ICT use (Elhai et al., 2019). Theoretically, CIUT is grounded in the assumption that increased internet use is a compensatory process for coping with psychopathology. Specifically, this compensatory model posits that ICT use is grounded in psychosocial problems and unmet needs. Therefore, different motivations drive problematic use of ICT. According to CIUT, some of these motivations are to relieve emotional discomfort, reduce negative affect, and regulate emotions (Kardefelt-Winther, 2014). These motivations are stronger in individuals with psychopathological symptoms (Elhai et al., 2019). Moreover, CIUT explains users' motivation to use the internet not only based on their psychological problems but also contextual factors (Kardefelt-Winther, 2014). CIUT is relevant to nomophobia because nomophobic individuals are more likely to use maladaptive coping strategies when confronted with problems (Bragazzi et al., 2019) and the MP can be considered as a maladaptive coping strategy (Kuss et al., 2018; Murdock, 2013).

In addition, although these theories have been developed to explain media, ICT and internet use, several studies have used the UGT perspective to explain problematic MP use and SNSs use (Dhir et al., 2015; Elhai, Levine, et al., 2017; Grellhesl & Punyanunt-Carter, 2012; Park et al., 2013; Whiting & Williams, 2013). Similarly, several studies have used the

CIUT perspective to explain problematic MP use (Long et al., 2016; Wang et al., 2015; Zhitomirsky-Geffet & Blau, 2016).

To summarize, based on the assumptions of these theories, in this dissertation, nomophobia was expected to be associated with emotion dysregulation, negative affect, positive affect, boredom, psychopathological symptoms, and satisfaction with the social context. The relationship between the variables and nomophobia was explained in more detail in the following sections.

1.4.1. Emotion Dysregulation

According to Gross and Barrett (2011, p. 2), emotion is a collection of psychological states that encompass subjective experience, physiological responses (e.g., heart rate, sweating), and expressive behavior (e.g., facial, bodily). Emotions are often related to a number of subcomponents. They are associated with a particular event, person, and object; involve appraisals of this event, object, and person; contain physiological changes, action tendencies and expressive behaviors; and sometimes require regulation (Parkinson et al., 2005). In particular, emotions occur when an event affects a person's goals or life (Parkinson et al., 2005; Smith & Lazarus, 1993).

Several psychotherapy approaches emphasize the central role of emotion in functioning (Greenberg, 2004). From the emotion-focused theory perspective, emotion is considered a form of adaptive information processing and action preparation that directs individuals' responses according to their environment and enhances their well-being (Celik & Aydogdu, 2018; Frijda, 2009; Greenberg, 2004; Greenberg & Paivio, 1997). In the Gestalt approach, emotion is considered the most important regulator of behavior. Emotions provide awareness to individuals about their goals, needs, and concerns. However, painful or unwanted emotions are blocked or pushed into the unconscious mind because individuals usually want to avoid emotional pain (Cole, 1998).

Despite the vital importance and functions of emotions, people cannot experience or express their primary emotions in every context or situation. Emotions do not become functional and might lead to problems in daily life in times when they are not expressed at the right time and with accurate intensity (Gross & Thompson, 2007). Emotion regulation (ER) has been defined differently by several researchers. Some definitions stress the ability to control emotional experiences and expressions of negative emotions, and reduce

emotional arousal. Some definitions stress the functional aspect of all emotions. Taken together, adaptive ER does not necessarily require an immediate reduction of negative emotions. It includes controlling behaviors that are impulsive or not appropriate rather than controlling emotions. It also involves altering the intensity of emotions or the duration that an emotion is experienced rather than eliminating certain emotions (Gratz & Roemer, 2004; Gross & Thompson, 2007; Mazaheri, 2015).

According to the process-oriented emotion regulation model, ER refers to how individuals try to impact which emotions they feel, when they feel them, and how they experience or express them (Gross & Thompson, 2007). ER involves attempts to decrease the intensity of negative emotions (down-regulation), increase the intensity of positive emotions (up-regulation), or maintain the stability of current emotions (Gross, 2008; Gross & Thompson, 2007; Yukcu & Demircioglu, 2017). Being aware of certain requirements (i.e. cognitive, emotional, social) of a certain situation is necessary for ER. Therefore, ER should be flexible and appropriate to both the person and the situation (Gratz & Roemer, 2004; Hollett & Harris, 2019; Yukcu & Demircioglu, 2017). The process-oriented emotion regulation model defines five different types of ER strategies to reduce, maintain, or increase the intensity of emotions. These strategies are situation selection, situation modification, attentional deployment, cognitive change, and response modulation. While regulation occurs before appraisals and reactions for altering the impact of stimuli that triggers emotions in the first four strategies (antecedent-focused ER), in the fifth strategy it occurs after the reaction to emotional stimuli has been formed (response-focused ER) (Gross, 2008).

According to the conceptualization of Gratz and Roemer (2004), ER includes four dimensions:

> These dimensions are awareness and understanding of emotion; acceptance of emotion; ability to control impulsive behaviors and behave in accordance with desired goals when experiencing negative emotions; and ability to use situationally appropriate ER strategies, flexibly to modulate emotional responses as desired to meet individual goals and situational demands. (Gratz & Roemer, 2004, p.42)

The absence of any or all of these capabilities points to difficulties in ER and is defined as emotion dysregulation. In other words, emotion dysregulation is an unsuccessful attempt to control or suppress unwanted emotions (Gratz & Roemer, 2004; Hollett & Harris,

2019). According to Gratz and Roemer (2004), emotion dysregulation involves six dimensions:

> These dimensions are lack of awareness of emotional responses, lack of clarity of emotional responses, nonacceptance of emotional responses, limited access to effective strategies, difficulties in controlling impulses when experiencing negative affect, and difficulties in engaging goal-directed behavior when experiencing negative affect. (Gratz & Roemer, 2004, p.43)

The lack of emotional awareness dimension is characterized by the inability to understand and accept the importance of emotions. The lack of emotional clarity dimension is characterized by difficulties in defining and expressing emotions. The non-acceptance of emotional responses dimension evaluates one's emotions about emotional responses. Higher scores in this dimension reflect negative emotions about emotional responses, such as being embarrassed for getting angry. The limited access to ER strategies dimension assesses the belief that negative emotions are out of control or unmanageable. High scores in this dimension indicate difficulties in capacity to change current emotions. The difficulties in controlling impulses dimension is characterized by one's inability to regulate behavior while under emotional distress. The difficulties in engaging goal-directed behavior dimension is characterized by difficulties in regular engagement in goal-directed behavior and concentrating on tasks while experiencing negative emotions. Individuals who score high in this dimension also experience difficulties in self-regulation (Gratz & Roemer, 2004; Hollett & Harris, 2019; Ruscitti et al., 2016).

In the modern world, the MP has a direct effect on people's emotions. A qualitative study reported that individuals experienced various emotions associated with MP use such as love or hate relationship with the MP, getting frustrated or worried if someone cannot reach others via the MP, or feeling uncomfortable due to being accessible all the time (Fitzgerald et al., 2005). Since the MP is deeply connected to the emotional lives of users, it becomes a tool that mediates the expression, display, and experience of emotions (Vincent, 2011).

According to CUIT, emotion dysregulation leads to compensatory behaviors such as higher engagement in digital technology use (Kardefelt-Winther, 2014). This motivation corresponds to the personal integrative and affective needs, and the habitual motivation

explained in UGT. According to UGT, individuals choose media content to regulate their emotional states (Blumler, 1979). For example, listening to music through the MP can alter emotional states by offering a respite from a stressful environment (Katz et al., 2008), or sharing personal information with different network channels can help achieve specific interpersonal emotion regulation goals (Bazarova et al., 2015). These assumptions have also been supported by previous studies. Several researchers have reported that individuals who have difficulties in ER are more likely to use the MP as a maladaptive ER strategy to avoid or decrease negative emotions (Brand et al., 2016; Elhai, Dvorak, et al., 2017; Elhai et al., 2018; Firat et al., 2018; Gul et al., 2019; Hoffner & Lee, 2015; Hormes et al., 2014; Kneer & Glock, 2013; Li et al., 2011; Phoenix et al., 2018; Sakiroglu, 2019; Squires et al., 2020; Toda et al., 2014; van Deursen et al., 2015; Whang et al., 2003; Yu et al., 2013; Zhitomirsky-Geffet & Blau, 2016). Based on their findings, the inclusion of emotion dysregulation as a predictor variable aligns with the UGT (Blumler, 1979) and CIUT (Kardefelt-Winther, 2014) perspectives. In the following sections, the expected relationship of nomophobia with trait and state emotion dysregulation were explained in detail.

1.4.1.1. Trait Emotion Dysregulation and Nomophobia

There are few studies in the literature examining the association between emotion dysregulation and nomophobia. One of them found a positive correlation between emotion dysregulation and nomophobia (Celik & Atilla, 2018). Similarly, one study revealed the relationship between cyberbullying, nomophobia, and emotion dysregulation (Catone et al., 2020). Two studies also reported that emotion management and emotion regulation skills significantly predicted nomophobia (Davoudi et al., 2019; Ercengiz et al., 2020). In addition, lots of studies examined the relationship of emotion dysregulation with problematic internet use (Amendola et al., 2019; Casale et al., 2016; Donald et al., 2019; Pettorruso et al., 2020; Phoenix et al., 2018; Rogier & Velotti, 2018; Sertbas et al., 2020), problematic MP use (Firat et al., 2018; Gul et al., 2019; Lo Coco et al., 2020; Squires et al., 2020), problematic SNS use (Drach et al., 2021; Gioia & Boursier, 2020; Hormes et al., 2014), and problematic gaming (Estévez et al., 2017; Gutiérrez et al., 2014; Hollett & Harris, 2019).

Previous researchers have revealed that when individuals focus on immediate emotional relief, they are more likely to use maladaptive ER strategies such as distraction and suppression (Gratz & Roemer, 2004; Hayes et al., 1999; Sheppes et al., 2011). Several researchers have also reported that especially young adults who have difficulties in ER are

more prone to regulate their painful emotions only by indulging in activities on the MP that offer immediate pleasure (Amendola et al., 2019; Billieux, 2012; Estévez et al., 2017; Greenwood & Long, 2009; Guerrero, 2019; Hoffner & Lee, 2015; Hollett & Harris, 2019; Pettorruso et al., 2020; Rogier & Velotti, 2018; Thompson, 1994; Tice et al., 2001). For example; mobile games, checking emails, sending text messages, and surfing on the internet can be a shield for such individuals to avoid negative emotions (Blasi et al., 2019; Deleuze et al., 2019; Hoffner & Lee, 2015; Hollett & Harris, 2019; Katz et al., 2008; Roberts et al., 2015). Based on these findings, it is possible to assume that if young adults cannot find adaptive techniques for ER, they may believe that spending time with the MP is the only way to control, avoid and suppress emotions. Consequently, MP use as a strategy to cope with negative emotions can trigger nomophobia by causing the need for the presence of it at all times.

Moreover, since the MP is easily accessible and entertaining, individuals with emotion dysregulation may have trouble regulating their phone-related behaviors and time spent on the MP (Billieux, 2012; Gratz & Roemer, 2004; Hoffner & Lee, 2015; Hollett & Harris, 2019; Rogier & Velotti, 2018; Young & Rogers, 1998), leading to a persistent and prolonged MP use (Drach et al., 2021; Hormes et al., 2014; Pettorruso et al., 2020; Rothen et al., 2018; Satici & Deniz, 2020). In other words, increased time spent on the MP may lead to a gradual decrease in the capacity to find alternative ER strategies and also alternative leisure activities. Therefore, the absence of the MP may increase the intensity of negative emotions. As a result, individuals may feel the obligation to keep the MP with them all the time. This obligation may turn into nomophobia over time.

In addition, emotion dysregulation leads to difficulties with the ability to identify, express, and label emotions (Gratz & Roemer, 2004). Technology-based conversation allows individuals to recount their emotional experience regardless of time and place, and to adaptively reinterpret their negative emotions during the conversation (Lee et al., 2020). Also, the virtual world and technology-based communication allow for greater controllability over emotions compared to real-life situations (Buckner et al., 2012; Casale et al., 2016; Hoffner & Lee, 2015; Hollett & Harris, 2019). Therefore, emotion dysregulation may strengthen individuals' beliefs about the usefulness of the online world (Buckner et al., 2012; Marino et al., 2020; Sapacz et al., 2016; Yavuz et al., 2020) and communication applications (Buckner et al., 2012; Buyukcolpan, 2019; Casale et al., 2016; Hoffner & Lee, 2015; Hollett & Harris, 2019; Kashdan & Farmer, 2014; Rodríguez et al., 2020). It is

possible to assume that individuals with emotion dysregulation may need others to have emotional awareness or emotional control, and may need the MP to experience their emotions instead of avoiding them. For such reasons, the fear of MP absence may increase the risk of nomophobia in these individuals.

1.4.1.2. State Emotion Dysregulation and Nomophobia

Since emotion is a dynamic construct, momentary assessment of emotional experience provides a more complete understanding of objective and subjective experiences of emotion dysregulation (Schatten et al., 2019). Since the ESM approach allows for the identification of contextual factors that trigger an emotional response, it is particularly well suited to measure momentary emotion dysregulation (Mackesy-Amiti & Donenberg, 2020). On the one hand, past studies have revealed that there is a relationship between the results of trait-based assessments of emotion dysregulation and momentary assessments (Daros et al., 2020; Lavender et al., 2017). As an example, Daros et al. (2020) showed that trait emotion dysregulation was related to more attempts to regulate emotions, lower perceived effectiveness in ER, and more frequent use of avoidant ER strategies. Trait emotion dysregulation was also positively related to disability to identify emotions throughout the day. On the other hand, they have also reported that despite being related, trait-based assessments of emotion dysregulation are not suitable for the assessment of momentary emotion dysregulation. Therefore, in Study 2, both trait and state emotion dysregulation were measured. Since no study has been identified that investigated the relationship between state nomophobia and emotion dysregulation using the ESM approach, the expected relationship between them was explained in the light of the related literature.

To start with, people need to express their inner states to others after an emotional event. In particular, when facing a negative emotional experience, individuals want to share their emotions with others (Lougheed et al., 2015; Rimé, 2009). For example, Kenny et al. (2016) found that 55% of the participants reported that they usually talked to someone about their negative experiences. In the modern world, phone-based communication is as important as face-to-face communication because it is a safe option to receive emotional support from others regardless of time and place (Colasante et al., 2020). Therefore, when emotions are unmanageable and indescribable, online emotional disclosure may increase the need for the MP (Zych et al., 2020) and elevated concerns about the absence of the MP.

Moreover, individuals commonly use digital technologies as a tool for momentary ER technique such as watching online videos (Myrick, 2015), listening to music from digital platforms (Randall & Rickard, 2016), and shopping online (Bui & Kemp, 2013). Such MP activities allow individuals temporarily to escape from negative emotions experienced in the real world. As evidence, previous ESM studies showed that emotional suppression was positively associated with the weekly MP usage time (Cameron & Overall, 2018; Elhai, Dvorak, et al., 2017). Based on their findings, it may be assumed that some individuals prefer to suppress their unmanageable current emotions by using the MP (Blalock et al., 2016). However, suppression is an ineffective regulation strategy to reduce the intensity of emotions (Elhai, Dvorak, et al., 2017), resulting in an increased need for the MP. Therefore, it is logical to assume that current difficulties in ER may increase nomophobic behaviours.

Lastly, most research on emotion dysregulation has focused on negative emotions. However, the theoretical and empirical literature has shown that people may also have problems in the regulation of positive emotions (Linehan, 1993; Linehan et al., 2007; Segal et al., 2002). Individuals are more likely to behave impulsively under intense positive emotions (Cyders & Smith, 2008b), which leads to maladaptive behaviors (Zapolski et al., 2009) such as substance misuse, pathological gambling, and risky sexual behavior (Cyders et al., 2009; Cyders & Smith, 2007; Cyders & Smith, 2008a; Weiss, Gratz et al., 2015; Zapolski et al., 2009). Therefore, it may be assumed that a deficit in positive emotion regulation may also lead to an excessive persistence of pleasant activities on the MP such as online gambling (Cummins et al., 2009). As a result, the MP may help to the regulation of positive emotions and deficits in the regulation of positive emotions may also lead to nomophobia.

1.4.2. Positive Affect and Negative Affect

Affect is defined by several researchers in different ways. According to Russell (2003, p. 148), affect is “a consciously accessible neurophysiological state that need not be directed at anything, and characterized as a state of pleasure or displeasure felt with some degree of activation”. According to Gray and Watson (2007, p. 171), affect plays a central role in people experience and gives a continuous hedonic tone that colors individuals’ lives. The affect term is also used to define the experience of feeling or emotion that mediates an organism's interaction with stimuli (Schutz et al., 2010). The term also refers to affect display that is "a facial, vocal, or gestural behavior that serves as an indicator of affect" (VandenBos,

2006, p. 26). Although individuals constantly experience affect, its intensity varies over time. Before making any decision, individuals remember the affective component of a particular object or situation. Therefore, like emotions, affect guides the person for rapid physical responses and directs the behavior to meet a specific need. Consequently, future behaviors are determined by affect (Crispim et al., 2015).

In this dissertation, affect was evaluated based on Watson and Tellegen (1985) two-factor affect model. According to their model, affect has two distinct dimensions that can be represented as orthogonal dimensions in factor analysis. These dimensions were labelled as positive affect (PA) and negative affect (NA). Positive affect and negative affect are independent constructs, indicating that the level of NA that individuals experience is not related to the level of PA (Ashby et al., 1999). However, people high in PA respond particularly to positive mood inductions, whereas people high in NA respond particularly to negative mood inductions (Cropanzano et al., 2003).

According to Watson et al. (1988), affect is relatively stable over time and differs between individuals (trait affect), but it may also change depending on the context (state affect). In general, PA is defined as a psychological construct describing the degree that positive emotions people experience and how this affects their interactions with other individuals or the environment (Ashby et al., 1999). In particular, trait PA reflects people's stable level of pleasurable engagement with the environment, but state PA is a more temporary and situation-specific experience of positive emotions (Gray & Watson, 2007). Individuals high in PA are generally enthusiastic, energetic, confident, active, and alert. They generally use healthier coping styles and are more goal-oriented (Li et al., 2017; Paterson et al., 2015). Moreover, PA is positively associated with sociability, life satisfaction, optimism, self-esteem, helpfulness, and pleasurable engagement. In contrast, low PA is characterized by sadness and lethargy (Ashby et al., 1999; Watson et al., 1988). Trait NA is defined as the tendency for a person to experience a variety of negative emotions across context and time. These emotions include anger, contempt, guilt, fear, and nervousness (Watson & Clark, 1984). Although trait NA reflects individuals' tendency to experience negative emotions, state NA reflects individuals' short-term and context-specific experience of negative emotions (Gray & Watson, 2007). NA is related to stress, anxiety, depression, dissatisfaction, health complaints, poor coping skills, and poor self-concept. People high in NA tend to focus on the negative aspects of themselves, the world, the future,

and others. In contrast, low NA is characterized by calmness and serenity (Jeronimus et al., 2014).

1.4.2.1. Trait Affect and Nomophobia

To date, only one study has been identified investigating the relationship between trait affect and nomophobia using the Positive and negative affect schedule (PANAS). Delavarpour et al. (2019) found that trait PA and trait NA significantly predicted nomophobia. In a similar vein, some studies reported that some affective states were positively correlated with nomophobia such as stress, anxiety (Sureka et al., 2021), anger (Kumar & Thomas, 2020), and worry (Mir & Akhtar, 2020). One study revealed that individuals felt worried, nervous, and irritated when they were unable to use the MP, and they used it more frequently to alleviate these aversive affective states (Chauhan & Jain, 2020). An experimental study also found that MP separation led to greater anxiety and unpleasantness (Clayton et al., 2015). Similarly, Furst and Evans (2021) reported that individuals showed emotional reactions to the loss and recovery of an MP. When the MP connection was severed, participants experienced intense emotional distress. When it was recovered, participants experienced joy and resumed the habitual use behavior. Moreover, some of these participants used words related to negative affective states to describe their experiences of losing the MP such as panic, scared, lost, drained, disoriented, anxious, naked, crazy, isolated, bored, and empty. However, some participants used words related to positive affective states such as relief, happiness, excitement, and freedom.

In addition, several studies investigated the relationship between trait affect and phone-related disorders using the PANAS. Among these studies, some reported that trait affect was a significant predictor of internet addiction (Savci & Aysan, 2016), and problematic SNS use (Gao et al., 2017; Horwood & Anglim, 2018; Schivinski et al., 2020). Several studies revealed a positive correlation between PA and FoMO (Przybylski et al., 2013; Riordan et al., 2020) and non-problematic MP use (Marty-Dugas & Smilek, 2020). In contrast, some reported that trait PA had a negative correlation with MP addiction (Fu et al., 2020; Li et al., 2020), problematic MP use (Horwood & Anglim, 2019; Marty-Dugas & Smilek, 2020), SNS addiction (Satici, 2019; Savci & Aysan, 2016; Savci et al., 2018), and internet addiction (Kraut et al., 1998; Vidyachathoth et al., 2014). Moreover, some studies showed that PA was not correlated with FoMO (Li et al., 2020; Milyavskaya et al., 2018). Previous studies also reported that trait NA had a positive correlation with FoMO (Li et al.,

2020; Przybylski et al., 2013; Riordan et al., 2020; Satici, 2019; Wolniewicz et al., 2018), MP addiction (Li et al., 2020; Satici, 2019; Wolniewicz et al., 2018), problematic MP use (Fu et al., 2020; Horwood & Anglim, 2019; Marty-Dugas & Smilek, 2020), SNS addiction (Abbasi & Drouin, 2019; Katz et al., 2018; Satici, 2019; Savci et al., 2018), internet addiction (Abbasi & Drouin, 2019; Marty-Dugas & Smilek, 2020), non-problematic MP use (Marty-Dugas & Smilek, 2020), and problematic online gaming (Billieux, Thorens et al., 2015). One study reported that trait NA was not correlated with social MP use (Wolniewicz et al., 2018).

The studies given above have shown that there is a relationship between the MP and affective states. However, as can be seen from the results, there is no consensus on the relationship of trait PA or trait NA with phone-related psychological problems. One study even revealed that Facebook use was positively correlated with PA and NA, but Instagram use was negatively correlated with them (Ustundag, 2020). Therefore, examining the relationship of affect with nomophobia might be useful to clarify the literature and to fill the gap. In particular, Study 1 aimed to investigate whether nomophobia has a correlational relationship with trait PA and trait NA and whether they predict nomophobia. Based on existing studies, the possible relationship between nomophobia and trait affect can be explained as follows. It is important to note that since PA and NA are independent constructs (Watson & Tellegen, 1985), the underlying mechanisms of their association with nomophobia might be different. Therefore, both were considered as research variables.

To start with trait PA, positive affectivity brings individuals closer and helps individuals to establish successful interpersonal relationships (Chotpitayasunondh & Douglas, 2018; Waugh & Fredrickson, 2006). On the positive side, individuals can use the MP to maintain constructive interpersonal relationships (Ellison et al., 2007; Nabi et al., 2013). As shown by past studies, using MP for social reasons can result in many helpful psychosocial outcomes that can be listed as increased social support (Tifferet, 2020), a better quality of friendship (Wang et al., 2019), increased degree of happiness (Ward et al., 2018), and life satisfaction (Rae & Lonborg, 2015). On the negative side, people high in positive affectivity may be more prone to suffer from nomophobia due to their constant desire to use the MP for such purposes. In particular, the satisfaction felt from receiving MP notifications is thought to increase MP use and MP control frequency (Oulasvirta et al., 2012). Moreover, individuals often use the MP for relaxation and entertainment, and expect positive outcomes (Ku et al., 2013; Opsenica-Kostić et al., 2020; Park et al., 2009). In accordance with the CIUT (Kardefelt-Winther, 2014) and UGT (Blumler, 1979) perspectives, individuals who

are high in positive affectivity may have a strong desire to use the MP as a source for entertainment and social capital. As a result, it is possible for them to feel anxious about situations in which they cannot use the MP. That is, MP use for such purposes can lead to nomophobia.

To continue with trait NA, individuals high in negative affectivity may turn to the MP for several social and personal purposes (Andreassen et al., 2014; Burke et al., 2010). First, the MP promotes perceptions of social connectedness, and provides social and psychological benefits to users (Fox & Moreland, 2015), which in turn facilitates emotional well-being (Nabi et al., 2013; Przybylski et al., 2013). As argued by Abbasi and Drouin (2019), individuals use SNSs to decrease their NA levels. However, they become more vulnerable to technology addiction and experience more permanent NA in the long run. Their findings indicate that initially, connection habits may be deemed good habits as they provide a connection with social resources that dispel NA (LaRose et al., 2014). However, if users turn to the MP as a source of support whenever they need it, the need to use the MP at any time and in any situation may lead to nomophobia.

Second, negative affectivity leads to deleterious effects on social interactions such as interpersonal conflict (Sanford & Rowatt, 2004). The MP provides an escape from in-person interaction without being completely isolated through online or text-based commination (Abeele et al., 2016; Buckner et al., 2012). In addition, text messages give individuals time to think about how to structure what they want to say while providing more control over communication. Therefore, individuals may feel more comfortable and secure during such interactions (Abeele et al., 2016). Consequently, people high in trait NA may tend to prefer phone-based or online communication, potentially leading to nomophobia.

Last, negative affectivity may lead to an increase in non-social MP use. For example; constant checking of news and consuming media can be seen as a shield to avoid NA (Blumler, 1979; Wegmann et al., 2018; Wolniewicz et al., 2018). However, in accordance with the CIUT (Kardefelt-Winther, 2014) and UGT (Blumler, 1979) perspectives, MP use may become a habit and be used as a maladaptive coping strategy. Over time, increased frequency of MP use may lead to craving symptoms following a period of abstinence (Katz et al., 2018). That is, since negative affectivity is a significant predictor of craving, it may increase MP use by triggering craving (De-Sola et al., 2017). Based on this information, MP use may decrease NA but NA may become more severe and permanent in the absence of the

MP. Consequently, MP separation may cause elevated concerns, worrisome thoughts, and tensed feelings (Mir & Akhtar, 2020), potentially resulting in nomophobia and more intense negative affective states.

1.4.2.2. State Affect and Nomophobia

State affect is influenced by the current situation and fluctuate over time (Verduyn et al., 2009). As evidence, previous studies reported that the lowest level of happiness was experienced on Sundays (Csikszentmihalyi & Hunter, 2003) and the first part of the day (Dockray et al., 2010), and NA was most pronounced in the morning (Kahneman et al., 2004). In the ESM literature, no research examining the relationship between state nomophobia and state affect has been identified, but few studies have focused on the relationship between MP use and state affect. Many of them have focused on the impact of MP or SNS use on state affect, while a few of them have focused on the impact of state affect on MP or SNS use. In particular, previous ESM studies revealed that SNS use predicted increased state NA (Aalbers et al., 2018; Bayer, Ellison, Schoenebeck et al., 2016; Beyens et al., 2020; Faelens et al., 2021) and increased state PA (Bayer, Ellison, Schoenebeck, Brady et al., 2016; Beyens et al., 2020). FoMO was also found to be a significant predictor of increased state NA (Elhai et al., 2020; Milyavskaya et al., 2018). Similarly, MP use was found to be a significant predictor of increased state NA and decreased state PA (Roggeveen et al., 2018). On the contrary, one study reported that when users were not allowed to use social media for a week, they reported lower PA and NA levels (Stieger & Lewetz, 2018).

Based on the related literature, it is possible to make several assumptions about the relationship between state affect and state nomophobia. To start with, the MP may be used as a tool to increase state PA. In particular, it can be used to satisfy the personal integrative needs in UGT such as social connectedness and social relatedness (Wolniewicz et al., 2019). From the CIUT perspective, the lack of stimulation increases a motivation to use a variety of online applications such as online games (Kardefelt-Winther, 2014). Online behaviors have positive outcomes on individuals, so individuals may need the MP to have the desired stimulation and to increase state PA (Kanjo et al., 2017; Thomas et al., 2020). These expectations may lead to dependence on MP applications (Wegmann et al., 2018), resulting in an intense fear of not being able to use these applications.

To continue with, previous studies found that on the days, when individuals shared a positive experience with others, they reported higher state PA (Gable et al., 2004; Lambert et al., 2012; Langston, 1994). Moreover, as sharing increased their PA levels over time, individuals who shared positive personal events at a given moment were more likely to share again in the future (Lambert et al., 2012). Some studies also reported that state PA increased when the participants interacted directly with others using social media apps and accepted notifications from online communication apps (Kanjo et al., 2017; Sarsenbayeva et al., 2020). These findings indicate that MP use may be enjoyable and exciting at an early stage, and users may experience enhanced PA during the MP activities. However, MP use may become a habit and individuals may wish to share their every positive experiences with others anywhere at any time (Li et al., 2020) or use social media apps. In the light of the findings, it is possible to say that sharing a positive emotional experience via SNS or communication apps increases state PA, and then higher PA increases the need for sharing. This leads up to the hypothesis that individuals are motivated to share positive events that they have experienced but this motivation results in dependence on the MP and nomophobia.

Likewise, personal negative or positive experiences are shared not only by calls or social media posts but also on blogs. Blogging through the MP improves social integration and social capital regardless of time and space. Thus, blogging has a positive effect on state PA (Baker & Moore, 2008; Koo et al., 2008). Also, writing has a therapeutic effect on negative emotions, so blogging may help decrease state NA (Langens & Schüler, 2005). That is, as the state NA level increases, individuals may want to reduce it by writing blogs. Therefore, it can be assumed that state PA and state NA increase the need for sharing, and this need may trigger nomophobic behaviors.

Lastly, similar to trait NA, users often turn to the MP as a coping tool when they experience a high level of state NA (Ko et al., 2009; Villanueva et al., 2020; Yen et al., 2011). From the UGT perspective, state NA drives individuals to seek rewarding experiences to alleviate their unwanted affective states (Elhai et al., 2019; Przybylski et al., 2013). From the perspective of CIUT, problematic technology use may emerge due to the amount of compensation required to alleviate state NA (Kardefelt-Winther, 2014). Instead of enduring such undesirable states, the MP provides individuals with an instant way to escape from almost any annoying situation or negative emotions at least mentally (Lukoff et al., 2018). This motivation can be an explanation for individuals' concerns about the absence of an MP in such situations. Therefore, overuse of the MP as a compensatory behavior to decrease

state NA may lead to an increased dependence on it (Wegmann et al., 2018), resulting in nomophobia.

1.4.3. Boredom and Nomophobia

Compared to other emotions, little research has been conducted on boredom. One possible reason for this neglect is that boredom is a silent emotion as compared to more easily observable emotions such as fear or happiness. Boredom is not a prototypical emotion and no prototypical facial and gesture expressions of it (Ekman, 1984; Goetz et al., 2013). In general, boredom is defined as "an aversion for the repetitive experience of any kind routine work and boring people, and extreme restlessness under conditions when escape from constancy is impossible" (Zuckerman, 1979, p. 103) and "state of consciousness, a particular combination of perceptions, affect, cognitions, and attributions" (Mikulas & Vodanovich, 1993, p. 8). As can be seen from these definitions, boredom is a multi-faceted construct that can be considered as a personality trait (trait boredom) and a context-specific state (state boredom) (Weybright et al., 2015). State boredom and trait boredom are different from each other but they are interrelated (Nett et al., 2011; Todman, 2013).

State boredom is a momentary affective state and related to situational meaninglessness (Gana et al., 2019). It is defined as "a state of relatively low or high arousal, and dissatisfaction which is attributed to an inadequately stimulating situation" (Mikulas & Vodanovich, 1993, p. 3). In other words, state boredom is an inevitable response to a monotonous task and inadequately stimulating or rewarding environment. State boredom is associated with frustration, dissatisfaction, and disinterest in response to low arousal (Esman, 1979; Gana et al., 2019). It is more related to situational factors than internal ones (Elpidorou, 2014; Larson & Richards, 1991).

In the literature, trait boredom is conceptualized in two ways: boredom susceptibility (BS) and boredom proneness (BP) (Mercer-Lynn et al., 2013). BS is defined as "aversion to routine works and boring people, a preference for exciting people and variety, and restlessness when things are stable" (Zuckerman et al., 1978, p. 140). It is one of the four dimensions of sensation seeking (Zuckerman, 1971). BP is defined as "one's proneness toward experiencing boredom" (Farmer & Sundberg, 1986, p. 5). BP refers to a general lack of interest, a perception of the environment as monotonous and disconnection with this environment (Gana et al., 2019). BP is associated with both external and internal factors

(Esman, 1979). The external factor is related to a person's inability to satisfy the need for excitement and change (Vodanovich & Kass, 1990). In other words, boredom prone individuals want to engage in satisfying activities, but their attempts generally fail (Struk et al., 2016). The internal factor is related to a difficulty in determining leisure-time interests, a decreased ability to identify and process emotions, and attention-related cognitive failures (Barnett, 2011; Harris, 2000; Malkovsky et al., 2012; Swinkels & Giuliano, 1995; Vodanovich & Kass, 1990; Weybright et al., 2015). It is important to note that although BP and BS are interrelated, they are different from each other (Martínez-Vispo et al., 2019). In this dissertation, BP and state boredom were considered as research variables.

Before going any further, it is important to mention that boredom has increased dramatically over the past few years (Weybright et al., 2020). It occurs frequently in all domains of young adults' daily lives, including leisure activities (Larson & Richards, 1991). Previous studies have revealed that between 30% and 90% of adults (Harris, 2000; Klapp, 1987) and 98% of adolescents (Yazzie-Mintz, 2007) in America experience boredom at some point in their daily lives. Larson and Richards (1991) reported that adolescents were bored at 32% of the time spent in school and 23% of the time spent outside of school. Similarly, more than half of university students experience boredom during classes (Mann & Robinson, 2009; Nett et al., 2011).

In today's society, technology has changed individuals' tolerance for boredom. The potential cure for boredom is often thought of as entertainment and individuals turn to MP activities as a tool to reduce boredom (Ranki, 2016). As a result of the advancement of mobile technology, activities on the MP have occupied most of the leisure time of adolescents and have replaced other social activities (Zhou & Leung, 2012). For instance, Smith (2011) found that 42% of MP owners used the MP for entertainment when they felt bored. Another study found that young individuals preferred to spend most of their leisure time using technological devices and were at risk of excessive technology use due to boredom (Biolcati et al., 2017). Therefore, in the modern world, examining boredom requires considering the technological devices that young adults devote a significant amount of time (Biolcati & Cani, 2015).

From the UGT perspective, boredom drives individuals to seek out rewarding activities to alleviate this aversive affective state (Elhai et al., 2019; Przybylski et al., 2013). Individuals high in boredom have expectations to avoid boredom and satisfy their affective

needs through activities on the MP, resulting in dependence on MP applications (Blumler, 1979; Wegmann et al., 2018; Wolniewicz et al., 2018). Similarly, from the perspective of CIUT, problematic technology use emerges due to the amount of compensation required to alleviate boredom (Kardefelt-Winther, 2014). Therefore, overuse of the MP as a compensatory behavior to decrease boredom leads to dependence on it (Wegmann et al., 2018). Based on these assumptions, BP and state boredom were determined as research variables. In the following paragraphs, their expected associations with nomophobia were explained.

1.4.3.1. Boredom Proneness and Nomophobia

When the related literature examined, to date, only two studies has been idendified that examined the relationship between BP and nomophobia. Regan et al. (2020) found that BP was positively associated with MP overuse and nomophobia. Similarly, Ozturk and Cosanay (2020) reported that the tendency to experience boredom was a significant predictor of nomophobia among university students. Past studies have also supported the relationship between BP and problematic technology use. BP was found to be a risk factor for the development and maintenance of internet communication disorder (Ben-Yehuda et al., 2016; Salisbury, 2010; Wegmann et al., 2018), problematic internet use (Chou et al., 2018; Lin et al., 2009; Nichols & Nicki, 2004; Skues et al., 2016; Wegmann et al., 2018), problematic MP use (Biolcati et al., 2017; Bozaci, 2020; Dey et al., 2019; Matic et al., 2015; Regan et al., 2020; Schroeter et al., 2015; Slaih et al., 2019; Zhang et al., 2014), phubbing frequency (Al-Saggaf et al., 2019; Yam & Kumcagiz, 2020), problematic SNS use (Bai et al., 2021; Griffiths, 2013; Rosen et al., 2013; Xu & Tan, 2012), mobile game addiction (Sanyal et al., 2015; Wan & Chiou, 2006; Zhou & Leung, 2012), and FoMO (Wolniewicz et al., 2019). It is important to note that nomophobia is also associated with these technology-based psychological problems (Durak, 2019; Gezgin, Hamutoglu, Gultekin et al., 2018; Lepp et al., 2015; Maeng & Arbeau, 2018; Yildirim et al., 2016). Therefore, in this dissertation, the relationship between nomophobia and BP, and its predictive power on nomophobia were investigated. Based on the results of these studies, the expected association between BP and nomophobia can be explained as follows.

Individuals prone to boredom try to cope with chronic boredom by continuously seeking new stimuli to reach their optimal arousal levels (Zhang et al., 2019). The possibility of having a lasting stimulation may lead to excessive use of the MP (Matic et al., 2015). As

evidence, previous researchers have identified various motivations that cause to play mobile games or use SNS. Some of these motivations are entertainment, passing time, boredom, escaping from reality, and the need for excitement and challenge (Throuvala et al., 2019; Wan & Chiou, 2006; Zhou & Leung, 2012). As can be understood from these motivations, MP use is one of the strategies to cope with boredom for boredom prone individuals (Mann & Robinson, 2009). Previous researchers have also reported that cognitive-approach coping strategies (e.g. focusing on the significance of a boring task) are the most beneficial strategies to reduce trait boredom (Daniels et al., 2015; Nett et al., 2010). However, behavioral-avoidance strategies (e.g. watching videos and listening to music) are commonly used by boredom prone individuals because these strategies provide an easy way to relieve boredom (Nett et al., 2011). These findings indicate that individuals prone to boredom experience gratification and arousal during MP activities, and may use the MP as an easy way to eliminate the negative effects of their tendencies (Sanyal et al., 2015; Wegmann et al., 2018). Consequently, such individuals may be more likely to overuse the MP (Wegmann et al., 2018) and experience intense distress without it (Zhou & Leung, 2012).

It is also important to add that while activities on the MP provide additional stimuli, they generally do not require specific skills or attention, unlike structural hobbies. As found by Biolcati et al. (2017), boredom prone adolescents were less likely to participate in hobbies such as sports or reading but were more likely to use technological devices than their peers with a low level of BP. Therefore, it is logical to assume that MP use may turn into a maladaptive coping mechanism over time, and boredom prone users may lose the ability to fill their time with non-phone activities or structural hobbies. As a result, such users may experience intense fear of being separated from the MP (Matic et al., 2015), potentially ending with nomophobia.

1.4.3.2. State Boredom and Nomophobia

BP has been widely investigated in past studies (Fahlman et al., 2011), but state boredom is still underrepresented in empirical studies (Hunter & Eastwood, 2018). Even though, BP significantly predicts state boredom (Chan et al., 2018), individuals' actual boredom experience cannot be predicted solely based on trait measures (Todman, 2013). Therefore, few researchers have focused on the investigation of how people experience boredom in daily life. A comprehensive ESM study on boredom revealed that boredom increased in the presence of strangers or colleagues and when participants were alone.

Participants reported a high level of boredom during the weekdays and in the afternoon. Moreover, boredom increased in some places such as schools, hospitals, and airports. Studying, doing nothing in particular, and working were the situational correlates of boredom (Chin et al., 2017). Similarly, Mark et al. (2014) reported that boredom was higher on Mondays and in the afternoon. They also reported that using Facebook and switching windows on the computer were related to increased boredom.

In the nomophobia literature, no study has been found examining the relationship between state nomophobia and state boredom. However, several researchers examined the association between MP use and state boredom. State boredom was found to be associated with increased SNS use (Stieger & Lewetz, 2018), internet surfing, and inbox and calendar use (Mark et al., 2014), online gambling (Goldstein et al., 2016), Snapchat use (Noë et al., 2019), and MP use (Dora et al., 2020; Kateb, 2017; Leung, 2020; Pielot et al., 2015). In the light of the relevant literature, the expected relationship between these two can be explained as follows.

State boredom is related to dissatisfaction with the current context (Harris, 2000; Mikulas & Vodanovich, 1993) and the perceived meaninglessness of a situation (Chan et al., 2018). One of the markers of state boredom is a strong desire to change or escape from the current activity or situation (van Tilburg & Igou, 2012). The MP may decrease state boredom and give individuals more control over the current environment by allowing them to distract their attention on the environment (Dora et al., 2020; Dwyer et al., 2018) or by providing additional stimulation (Brissett & Snow, 1993). Therefore, if bored individuals have the opportunity to be constantly exposed to external stimulation to increase the feelings of excitement and sensation (Skues et al., 2016), they may be more likely to use the MP in a similar situation again (Wegmann et al., 2018). Therefore, it is logical to assume that bored individuals turn to the MP to compensate for their dissatisfaction with the real world (Dora et al., 2020; Pielot et al., 2015). Consequently, individuals may worry about not being able to use the MP in environments where they may experience boredom, potentially leading to state nomophobia.

Similar to trait boredom, a previous ESM study reported that individuals turned to the MP as a behavioral-avoidance coping strategy to deal with state boredom (Nett et al., 2011). Considering that some MP apps automatically suggest content and individuals are more interested in the recommended content by the MP apps when they are bored (Pielot et

al., 2015), they have a chance to ease their boredom effortlessly. This is why almost 90% of university students use the MP to reduce state boredom (Kateb, 2017). However, over time, such MP use may cause individuals to lose their ability to cope with state boredom. Due to weakened coping skills, they may be more likely to experience intense anxiety, distress, and also boredom without an MP (Yam & Kumcagiz, 2020; Zhou & Leung, 2012), which may lead to state nomophobia.

1.4.4. Psychological Symptom Severity and Nomophobia

Nomophobia is a transdiagnostic pathology with some psychiatric disorders such as panic disorder, personality disorders, sleeping disorders, obsessive-compulsive disorder, eating disorders, social phobia, agoraphobia, substance use disorder, and behavioral addiction disorders (e.g., pathological gambling and compulsive shopping) (Bragazzi & Puente, 2014; Dewey, 2016; Jahrami et al., 2021; Khan et al., 2021; King et al., 2014; King et al., 2013; King et al., 2010; Lee et al., 2014; Shankar et al., 2018). Previous studies have suggested that nomophobia may have a negative impact on mental health. Also, poor mental health may have a negative effect on nomophobia (Bragazzi & Puente, 2014; Dewey, 2016; King et al., 2014; King et al., 2013; King et al., 2010; Lee et al., 2014). In other words, the relationship between mental health and nomophobia is bidirectional, whereby nomophobia is driven by psychiatric symptoms and increased nomophobia leads to an increase in psychiatric symptoms, indicating a paradoxical relationship.

The Brief symptom inventory (BSI) evaluates psychopathological symptoms under nine factors. These factors are hostility, anxiety, somatization, depression, obsessive-compulsive symptoms, phobic anxiety, paranoid thought, interpersonal sensitivity, and psychoticism (Derogatis, 1992). However, Sahin and Durak (1994) have revealed that psychopathological symptoms in the Turkish population should be examined under five factors. These factors are depression, anxiety, negative self-concept, somatization, and hostility. Therefore, in this dissertation, psychopathological symptoms were evaluated under five factors. The BSI subscales can be used separately to obtain scores from each factor. It is also possible to determine the Global severity index (GSI) score with the BSI. The GSI is the most sensitive indicator of a person's psychological distress level and combines information about the number of total symptoms (Derogatis, 1992). In this dissertation, the correlational relationships between the factors and nomophobia were examined. However, since the GSI gives information about the severity of psychopathology, it was assumed that

the GSI scores might be a more important research variable than a single type of psychopathology. Therefore, this dissertation aimed to investigate the relationship between psychopathological symptom severity and nomophobia among Turkish university students. To better explain the expected relationship between psychopathology and nomophobia, the expected relationships between the BSI subscales and nomophobia were explained as follows in the light of the relevant literature.

When the literature is reviewed, the past research's findings on the relationship between the severity of psychopathology and nomophobia were quite limited. Adawi et al. (2019) conducted a study to test the factor structure, reliability, and validity of the BSI in nomophobes. According to their results, the nomophobes reported an increase in all dimensions of the BSI. More recently, Goncalves et al. (2020) examined the relationship between nomophobia and psychopathological symptom severity among university students. According to their findings, the GSI and all subscales of the BSI were positively correlated with nomophobia. Yilmaz and Bekaroglu (2021) also examined the association between psychopathology and nomophobia using the Symptom Checklist-90-Revised (SCL-90-R). According to their findings, nomophobia was positively correlated with all subscales of the SCL-90-R and the subscales significantly predicted nomophobia.

Moreover, previous studies reported that hostility (Adalier & Balkan, 2012; Calpbinici & Tas-Arslan, 2019; Dong et al., 2011; Evren et al., 2019; Gentile et al., 2011; Jang et al., 2008; Ko et al., 2014; Ko et al., 2009; Ko et al., 2007; Laconi et al., 2018; Xiuqin et al., 2010; Yang et al., 2005; Yen et al., 2008; Yen et al., 2007), anxiety (Adalier & Balkan, 2012; Ghaderi Rammazi et al., 2018; Tonioni et al., 2012; Xiuqin et al., 2010; Yen et al., 2008), depression (Adalier & Balkan, 2012; Ghaderi Rammazi et al., 2018; Koronczai et al., 2019; Müller et al., 2014; Tonioni et al., 2012; Wolfling et al., 2013; Xiuqin et al., 2010; Yen et al., 2008), obsessive-compulsive symptoms (Adalier & Balkan, 2012; Koronczai et al., 2019; Laconi et al., 2018; Müller et al., 2014; Wolfling et al., 2013; Xiuqin et al., 2010), interpersonal sensitivity (Adalier & Balkan, 2012; Koronczai et al., 2019; Wolfling et al., 2013), somatization (Calpbinici & Tas-Arslan, 2019; Cerutti et al., 2016; Jenaro et al., 2007; Koc, 2011; Yen et al., 2017), phobic anxiety, paranoid ideation, and psychoticism (Adalier & Balkan, 2012; Dong et al., 2011; Roma et al., 2019; Yen et al., 2008), and the GSI (Beranuy et al., 2009; Budak et al., 2015; Calpbinici & Tas-Arslan, 2019; Cerutti et al., 2006; Dalbudak et al., 2013; Koronczai et al., 2019; Müller et al., 2014; Roma et al., 2019; Siomos et al., 2014; Wolfling et al., 2013; Yang et al., 2005; Yen et al., 2008) were positively

correlated with problematic internet use. Similarly, previous studies revealed that problematic MP use was positively correlated with depression, anxiety (Alavi et al., 2020; Contractor, Frankfurt, et al., 2017; Contractor, Weiss, et al., 2017; Elhai, Dvorak, et al., 2017; Ha et al., 2008; Kormendi et al., 2016; Romano et al., 2017; Saling & Haire, 2016; Samaha & Hawi, 2016), hostility (Calpbinici & Tas-Arslan, 2019; Throuvala et al., 2019), obsessive-compulsive symptoms, interpersonal sensitivity (Ha et al., 2008), somatization (Alavi et al., 2020; Calpbinici & Tas-Arslan, 2019; Firat et al., 2018; Jenaro et al., 2007; Kamibeppu & Sugiura, 2005; Oftedal et al., 2000; Sandström et al., 2001; Tavakolizadeh et al., 2014), phobic anxiety, paranoid ideation, psychoticism, and the GSI (Calpbinici & Tas-Arslan, 2019; Emelin et al., 2017; Ergun et al., 2019; Ha et al., 2008; Panova & Lleras, 2016).

To start with the first subscale of the BSI, depression is one of the most frequently reported psychiatric symptoms associated with nomophobia (Bragazzi & Puente, 2014; Buyukcolpan, 2019; Dewey, 2016; Kateb, 2017; King et al., 2014; King et al., 2010; Kuscu et al., 2021; Yilmaz & Bekaroğlu, 2021). Depression is characterized by dysphoric affect, loss of interest in daily activities, and a sense of desperation (Derogatis & Melisaratos, 1983). In parallel with the assumptions of CIUT (Kardefelt-Winther, 2014), previous studies have reported that depressed individuals use the MP as a maladaptive coping strategy and an experiential avoidance strategy to get away from everyday problems, and a regulation strategy to regulate negative emotions (Elhai, Dvorak, et al., 2017; Laconi et al., 2017; Mitchell & Hussain, 2018). On the one hand, the MP provides a unique opportunity to adjust emotional problems and provides a sense of control over symptoms. On the other hand, depressive individuals may not be able to improve their ability to control their symptoms without an MP (Yen et al., 2009). Considering that depression severity is linked to MP use (Beard & Wolf, 2001; Elhai et al., 2018; Ha et al., 2008; Young & Rogers, 1998) and excessive preoccupation with the MP is associated with nomophobia (Yildirim, 2014), it is possible to hypothesize that there is a bidirectional relationship between nomophobia and depression. That is, if the MP is used as a symptom reduction method, the fear of being separated from it may be more intense in depressed individuals. Also, if such individuals cannot find an appropriate coping strategy, the fear of staying away from the MP can make their symptoms more severe, which may further make them more depressed (Yen et al., 2009).

To continue with the second one, anxiety is characterized by restlessness, nervousness, panic, and irritability (Derogatis & Melisaratos, 1983). It is also one of the most common symptoms of nomophobia and gradually increases after separation from the MP (Anshari et al., 2019; Bragazzi & Puente, 2014; Cheever et al., 2014; Clayton et al., 2015; King et al., 2010; Konok et al., 2016; Kuscu et al., 2021; Kuss et al., 2018; Mir & Akhtar, 2020). Previous studies have reported that people who tend to develop nomophobia are more prone to anxiety because the absence of the MP produce anxiety (Adawi et al., 2019; Goncalves et al., 2020; Kateb, 2017; Yilmaz & Bekaroglu, 2021). Based on their findings and the assumptions of CIUT (Kardefelt-Winther, 2014), it is possible to assume that the MP is used as an anxiety medication and a dysfunctional coping strategy by anxious individuals. Instead of learning how to deal with symptoms, they may develop a pathological dependence on the MP, resulting in nomophobia (Kara et al., 2019; King et al., 2013; King et al., 2010). Therefore, it is possible to hypothesize that young adults with severe anxiety experience an intense fear of being not able to use the MP, as they are more prone to use it to reduce anxiety symptoms (Kuss et al., 2018).

To date, no research was identified that investigated the relationship between nomophobia and negative self-concept due to the differences in the factor structures of the BSI and the BSI-TR. However, previous studies have found that dependence, rejection, low self-esteem, loneliness (Durak, 2018; Shankar et al., 2018), negative self-views, low self-efficacy (Bragazzi & Puente, 2014; Durak, 2018), social appearance anxiety (Ayar et al., 2018), and social phobia (Khan et al., 2021; King et al., 2014) are significantly correlated with nomophobia. The negative self-concept subscale of the BSI-TR contains items that aim to measure similar psychological constructs (Sahin & Durak, 1994). Therefore, it is possible to assume that individuals with a negative self-concept may need the MP to increase their sense of positivity about themselves and maintain social relationships. For example, levelling up in mobile games can increase their self-esteem or playing multiplayer games may satisfy their social needs (Zhou & Leung, 2012). Similarly, in the online world, individuals have the opportunity to present themselves as they wish (Emelin et al., 2017; Peng & Liu, 2010; Young & Rogers, 1998) and avoid negative aspects of themselves (Dalbudak et al., 2013; Villanueva et al., 2020). Therefore, individuals with a negative self-concept may find relief and happiness in the virtual world, and separation from the virtual world may be equal to the loss of these opportunities. Since access to the virtual world is

possible via the MP at any time, the severity of nomophobia symptoms may be higher in such individuals.

The fourth subscale of the BSI is somatization. It is defined as a tendency to experience psychological distress arising from the perception of physical dysfunction in the cardiovascular, gastrointestinal, and respiratory systems. It is also characterized by pain and discomfort localized in the gross musculature (Adalier & Balkan, 2012). The nomophobes are more likely to have somatic symptoms such as respiratory change, perspiration, agitation, disorientation, tachycardia, trembling, high blood pressure, and an increase in heart rate in the absence of the MP (Clayton et al., 2015; Konok et al., 2017; Shankar et al., 2018). The nomophobes also experience several physical health problems. The most frequently reported health problems are headache, eye impairment, sleep disturbance (Kwon et al., 2013), pain in the arms and shoulders, the tension in the neck (Abdelhameed & Abdel-aziem, 2016; Kim, 2015), and pain in the hands (Gold et al., 2012). These findings indicate that nomophobia may increase somatic symptoms. However, recurrent somatic symptoms may also increase the symptoms of nomophobia (Yilmaz & Bekaroğlu, 2021). It is possible to assume that such individuals may not be accepted by others due to their somatic symptoms. Therefore, they may need the MP to avoid face-to-face relationships and prefer to spend more time in a virtual world (Firat et al., 2018). However, in the long term, social avoidance may lead to loss of social skills and more impairments in social life (Cerruti et al., 2017). As a result, they may spend even more time on the MP to deal with these additional problems and to ignore their somatic symptoms. That is, as with the other three subscales, the MP use as a medicine to decrease such symptoms (Ergun et al., 2019) may lead to nomophobia.

The last subscale is hostility. Hostility reflects feelings of irritability, the urge to break objects, and uncontrollable anger (Adalier & Balkan, 2012). To date, three studies reported a positive relationship between nomophobia and hostility (Adawi et al., 2019; Goncalves et al., 2020; Yilmaz & Bekaroglu, 2021) but one study reported an insignificant association between the two (Nuri et al., 2021). Based on the related literature, it is possible to assume that there is a relationship between nomophobia and hostility. To explain in detail, hostility predicts escape-avoidance coping styles as a way of coping with emotional stress (McCormick & Smith, 1995; Stavropoulos et al., 2017; Yen et al., 2007). Considering the explanations of UGT about stress (Blumler, 1979), as the MP provides an environment to escape from emotional stress, young adults with a high level of hostility may use it to cope with hostility (Ko et al., 2008) and exhibit nomophobic behaviors. Moreover, since hostility

cause interpersonal conflict and rejection in the real world (Douglas et al., 2008), it may lead to an increase in online bullying behaviors such as cyberaggression (Garaigordobil et al., 2020) and trolling (Buckner et al., 2012; Vernon et al., 2017). The anonymous nature of the online world provides a way for such individuals to saturate hostility by expressing their aggression in unacceptable ways in the real world (Choo et al., 2010; Kim, 2013; Ko et al., 2009; Lea & Spears, 1991; Yen et al., 2017; Yen et al., 2011; Yen et al., 2007). Therefore, MP activities may be seen as the only way to saturate hostile desires and the only way of interaction may be limited to phone-mediated interaction. This may lead to fear of not being able to use the MP.

To conclude, 75% of psychological disorders have the first onset before the age of 24 (Breslau et al., 2008; Ettner et al., 1997; Kessler et al., 2005) and younger people are particularly at risk for nomophobia (Bragazzi & Puente, 2014; Durak, 2018; Gezgin, Cakir et al., 2018). Therefore, it is important to examine the relationship between nomophobia and psychopathological symptoms, and investigate the psychological features of nomophobia with the participation of university students.

1.4.5. Satisfaction with The Social Context and Nomophobia

Most of the traditional assessment approaches ignore the contextual relationships between research variables. Since research phenomena are generally assessed in a single occasion, the effect of the current context is not considered. One of the most important benefits of the ESM approach is the ability to assess the impact of the current context on research variables. Therefore, the ESM approach allows to conduct context-sensitive assessment and analyses, and gives detailed information about research phenomena in particular situations (Ebner-Priemer & Trull, 2009). In Study 2, it was assumed that satisfaction with social context predicts state nomophobia. In particular, an increase in the satisfaction with the social context scores of the participants was expected to lead to an increase in their state nomophobia scores.

In the literature, no ESM study has been found that examined the relationship between satisfaction with the social context and state nomophobia. However, previous studies have found that some context is related to MP use (Do et al., 2011; Wac et al., 2011). For example, Cohen and Lemish (2003) found that nearly 33% of calls were made at home, 19% of calls were made at work or school, and 15% of all calls were made while driving.

Similarly, Pielot et al. (2017) reported that the user's context was the most important predictor of MP use and most of the calls were at home or while travelling compared to being at work. Ferreira et al. (2014) also found that individuals used the MP more often indoors than outdoors and when they were alone. These findings indicate that context is one of the most important predictors of MP use, and it may also have an effect on nomophobia.

Moreover, CIUT explains users' motivation to internet use not only based on psychological problems but also contextual factors (Kardefelt-Winther, 2014). Similarly, according to UGT, individuals have different ways of using the internet depending on both their needs and situational context (Blumler, 1979). It is also important to mention that nomophobes need the MP in any environment (Hasmawati et al., 2020) because the MP gives them a sense of safety and security (Ferreira et al., 2014). Therefore, the presence of it may lead to a more positive evaluation of the environment (Dwyer et al., 2018). This conscious or unconscious link between the MP and satisfaction with the context may become automatically active when individuals experience increased satisfaction. This implicit link between the MP and the positive evaluation of the environment may lead to nomophobia, even if users are not aware of the cause. Therefore, the effect of social context should be considered to make accurate inferences about individuals' fear of not being able to use the MP.

In addition, previous ESM studies have shown the impact of social context in emotion regulation (Aldao, 2013; English et al., 2017; McRae et al., 2011; Srivastava et al., 2009). Previous ESM studies have also revealed that characteristics of the current situation are associated with state affect (Csikszentmihalyi & Hunter, 2003; Diener et al., 1984; Hasler et al., 2008; Kahneman et al., 2004; Larson et al., 1985; Sandstrom et al., 2017). In particular, individuals are more likely to report increased PA in social situations (Hasler et al., 2008) and increased NA at work (Sandstrom et al., 2017). Similarly, individuals experience increased PA and decreased NA with a friend or family member than alone or with a stranger (Csikszentmihalyi & Hunter, 2003; Diener et al., 1984; Ito et al., 2018; Larson et al., 1985). Moreover, people are more likely to experience boredom in schools, hospitals, airports, and workplaces (Chin et al., 2017). These findings are critical because they indicate that affective states, emotion regulation, and emotions are deeply embedded within social contexts (Morris et al., 2007; Silk et al., 2011; Zeman et al., 2006). Therefore, the effects of state PA, state NA, state boredom, and momentary difficulties in ER on nomophobic behaviors should be investigated by considering the effect of social context.

1.5. Aims of The Dissertation

The expected relationships of selected psychological constructs with nomophobia from the perspectives of UGT (Blumler, 1979) and CIUT (Kardefelt-Winther, 2014) were explained in the previous sections. In this dissertation, two separate studies were conducted to investigate these relationships.

In Study 1, the trait approach was preferred because it is beneficial for investigating how individuals' trait-based characteristics are related to trait nomophobia. The trait approach is well-suited for assessing the overall structure of nomophobia, as data are collected from a large number of individuals with standard measurement tools (Stone et al., 1991). In Study 1, the following hypotheses were tested by using the cross-sectional design:

H1: There is a significant and positive relationship between emotion dysregulation and nomophobia.

H2a: There is a significant and positive relationship between trait positive affect and nomophobia.

H2b: There is a significant and positive relationship between trait negative affect and nomophobia.

H3: There is a significant and positive relationship between boredom proneness and nomophobia.

H4: There is a significant and positive relationship between psychopathological symptom severity and nomophobia.

H5: The five-predictor model (emotion dysregulation, trait positive affect, trait negative affect, boredom proneness, and psychopathological symptom severity) significantly predicts nomophobia.

In Study 2, the ESM approach was used to determine the state nomophobia's associations with research variables both the within-person level and the between-person level. It is important to mention that trait-based assessments are not suitable for the assessment of the momentary emotion dysregulation (Daros et al., 2020), state affect (Ben-Zeev et al., 2009; Thomas & Diener, 1990; Wirtz et al., 2003), and state boredom (Fisher,

1993; Mark et al., 2014; Mikulas & Vodanovich, 1993; Pielot et al., 2015). The findings of retrospective methodologies are based on aggregated ratings of the research phenomenon, and data are collected under certain conditions within a limited time (Bradburn et al., 1987; Schatten et al., 2019). As a result, the findings are affected by autobiographical memory effects and the memory-experience gap (Ben-Zeev et al., 2009; Miron-Shatz et al., 2009; Thomas & Diener, 1990). Therefore, to investigate the momentary effects of these predictors on state nomophobia, these variables should also be examined with momentary assessments. In the light of this information, in Study 2, the following hypothesis was tested by using the ESM approach:

H6: Momentary psychological constructs (emotion dysregulation, positive affect, negative affect, boredom, and satisfaction with the current social context), and individuals' trait-based characteristics (nomophobia, emotion dysregulation, positive affect, negative affect, and boredom proneness) predict state nomophobia.

In addition, previous studies revealed that individuals tended to keep the MP within arm's reach on weekdays compared to weekends (Shwetak et al., 2006). It was also found that 78.4% of the notifications were received on weekdays and 21.6 % on weekends. Individuals responded to MP notifications in a shorter time on weekdays compared to weekends (Pielot et al., 2014). Similarly, Deng et al. (2018) reported that the duration of MP use decreased from Monday to Saturday. Based on these findings, it is possible to assume that nomophobia scores may also fluctuate depending on the day of the week. Since no studies supporting this assumption could be identified, Study 2 sought answers to the following research questions instead of forming directional hypotheses:

1. Is there a systematic change in daily nomophobia scores during the week depending on the day of the week?

2. Does the change in daily nomophobia scores throughout the week differ between the nomophobia group and the non-nomophobia group?

3. Does the group (nomophobia/non-nomophobia) moderate the association between daily nomophobia and the day of the week?

Here, it is important to note that the psychological mechanisms and situational determinants that could potentially be associated with nomophobia were determined as

research variables based on the assumptions of UGT (Blumler, 1979) and CIUT (Kardefelt-Winther, 2014). In the selection of the research variables, increasing attention has been directed to ensure that the variables are relatively less stable throughout life. The research variables were also selected among the variables whose relationship with nomophobia was relatively less investigated in previous studies. In addition, considering the research designs, attention has been paid to ensure that the variables can be evaluated with momentary assessments as well as standard measurement tools.

Despite a detailed review of the nomophobia literature, no studies have been found that investigated state nomophobia. To date, most studies have used cross-sectional designs to investigate nomophobia and most researchers have focused on trait nomophobia. Therefore, this dissertation can provide empirical evidence that nomophobia can be evaluated as a stable construct as well as a dynamic construct. In addition, no studies have been found that assessed state nomophobia and trait nomophobia in one study. For an in-depth investigation of nomophobia, the use of ESM in combination with the cross-sectional design may provide an opportunity to explain and compare the discrepancy or concordance between the results. In this way, this dissertation may have greater explanatory power than a single-method study design. Lastly, no studies have been found that assessed state nomophobia's association with the Study 2 predictors both the within-person level and the between-person level, and trait nomophobia's relation to the Study 1 predictors within the same study. Therefore, the findings of this dissertation are expected to contribute to the expansion of the nomophobia literature. The findings might also make valuable contributions to the clinical field by providing a better understanding of the factors that should be considered in prevention programs and treatment interventions developed for nomophobia.

2. STUDY I

2.1. Method

2.1.1. Participants

Due to the characteristics of today's society, nomophobia is emerging as a common phenomenon among Generation Z, who were born between the mid-1990s and mid-2000s (Ahn & Jung, 2014; Spencer, 2019). Previous studies have reported that Generation Z is more vulnerable than other generations in experiencing nomophobia (Gentina et al., 2018; Hasmawati et al., 2020). Today's undergraduates and high school students are considered Generation Z. In this dissertation, instead of collecting data from both high school and university students, it was deemed appropriate to collect data only from university students. In this way, education level was prevented from being a confounding variable and the outcome bias that could arise from the education level of the participants was eliminated. Moreover, considering the high prevalence of nomophobia among university students (Bragazzi & Puente, 2014; Durak, 2018; Gurbuz & Ozkan, 2020), nomophobia studies should be conducted with the participation of university students. For such reasons, participants were selected among university students. In addition, according to uses and gratifications theory (UGT), media use motivations are also related to the demographic characteristics of individuals such as gender and age (Elhai & Contractor, 2018; Elhai et al., 2019). In this dissertation, being a university student was considered as a demographic characteristic of the participants.

For participant selection, convenient sampling method was performed. The inclusion criteria for participation were having a mobile phone (MP) and being a university student. The participants were selected among students from Giresun University. In this way, the university factor was prevented from being a confusing variable. In other words, the outcome bias that may arise from the differences in the facilities of the universities or the cities where the universities are located and the biases that may arise from the differences between the student profiles in different universities were controlled. Of the total sample, 263 (52.1%) were female, 242 (47.9%) were male, and their ages ranged between 17 and 30 years (M= 20.54, SD = 1.87).

2.1.2. Measurements

2.1.2.1. Personal Information Form

The personal information form was prepared by the researcher and used to determine the socio-demographic characteristics of the participants. The form consists of questions about age, gender, accommodation status, duration of MP ownership, duration of daily MP and mobile internet usage, purposes of MP usage, and frequency of checking the MP (See Appendix A).

2.1.2.2. Nomophobia Scale

The Nomophobia Questionnaire (NMP-Q) was developed by Yildirim and Correia (2015) to determine the nomophobia levels of individuals. The reliability and validity assessments of the Turkish version (NMP-Q-TR) were done by Yildirim et al. (2016). The NMP-Q-TR consists of 20 items and includes four dimensions: (1) Not being able to access information, (2) Giving up convenience, (3) Not being able to communicate, and (4) Losing connectedness. It is a 7-point Likert-type scale (1= *strongly disagree* and 7= *strongly agree*). The total score that can be obtained from the questionnaire range between 20 and 140. Higher scores indicate more severe levels of nomophobia. The internal consistency coefficient (Cronbach alpha coefficient) of the scale was .92. The coefficients of its dimensions were .90, .74, .94 and .91, respectively. Confirmatory factor analysis showed that CFI was .92, GFI was .97, and RMSEA was .08. In this study, Cronbach alpha coefficient of the NMP-Q-TR was .92, and the coefficients of the dimensions were .79, .79, .92 and .88, respectively (See Appendix B).

2.1.2.3. Emotion Dysregulation Scale

The Difficulty of Emotion Regulation Scale (DERS) was developed by Gratz and Roemer (2004) to determine the level of difficulties in emotion regulation. The DERS was adapted to Turkish culture by Rugancı and Gencoz (2010). The Turkish version of the scale (DERS-TR) has 35 items and six subscales: (1) Awareness, (2) Clarity, (3) Nonacceptance, (4) Strategies, (5) Impulse, and (6) Goals. Responses are given on a 5-point Likert-type scale (1=*almost never* and 5=*almost always*). High scores obtained from the scale indicate difficulty in emotion regulation. Cronbach alpha coefficient of the DERS-TR was found as .94 and the coefficients of the subscales were .75, .82, .83, .89, .90 and 90, respectively. The

test-retest reliability of the total scale was .83. In this study, Cronbach alpha coefficient of the DERS-TR was .92, and the coefficients of the subscales were .68, .84, .78, .86, .82 and .85, respectively (See Appendix C).

2.1.2.4. Positive and Negative Affect Schedule

The Positive and Negative Affect Schedule (PANAS) was developed by Watson et al. (1988) to measure positive and negative affect. The PANAS was validated in Turkish culture by Gencoz (2000). The PANAS-TR is a 20-item scale, and consisted of two subscales: (1) Positive affect and (2) Negative affect. Responses are given on a 5-point Likert-type scale (1= *very slightly or not at all* and 5=*very much or extremely*). The positive and negative affect scales' scores range between 10 and 50. The higher scores indicate higher affect. Cronbach alpha coefficient was .83 for the positive affect subscale and was .86 for the negative affect subscale. Test-retest coefficients were found as .40 and .54 for the positive affect and negative affect subscales, respectively. In this study, Cronbach alpha coefficient was .80 for the positive affect subscale and .77 for the negative affect subscale (See Appendix D).

2.1.2.5. Boredom Proneness Scale

The short version of the Boredom Proneness Scale (BPS-SR) was developed by Struk et al. (2016) to capture the general tendency to experience boredom. The BPS-SR was validated in Turkish culture by Koc et al. (2018). The BPS-SR-TR has eight items. It is a 7-point Likert-type scale (1= *strongly disagree* and 7= *strongly agree*). High scores obtained from the scale indicate a tendency to experience boredom. Confirmatory factor analysis showed that CFI was .96, TLI was .94, and RMSEA was .07. Cronbach alpha coefficient of the scale was .86. In the current study, the coefficient was .79 (See Appendix E).

2.1.2.6. Brief Symptom Inventory

The Brief Symptom Inventory (BSI) was developed by Derogatis and Melisaratos (1983) to determine the psychopathology levels of the individuals. The BSI was validated in Turkish culture by Sahin and Durak (1994). The BSI-TR has 53 items and these items are rated on a 5-point Likert-type scale (0= *not at all* and 4= *extremely*). The BSI-TR has five subscales: (1) Somatization, (2) Depression, (3) Anxiety, (4) Hostility, and (5) Negative self-concept. It is also possible to determine the General severity index (GSI) which is a weighted

frequency score based on the sum of the scores the participants have rated on each item. High scores indicate that the psychological distress level of the participant is high (Boulet & Boss, 1991; Derogatis, 1992). The validity of the scale was tested in three separate studies. Cronbach alpha coefficient of the scale ranged between .95 and .96, and the coefficients obtained for the subscales ranged between .63 and .86 (Sahin & Durak, 1994). In the current study, Cronbach alpha coefficient was .95 for the BSI-TR. The coefficients of the subscales were .76, ,87, .84, .76 and .86, respectively (See Appendix F).

2.1.3. Procedure

Ethical approval for this dissertation was obtained from the Ethics Committee of Ankara Yıldırım Beyazıt University (See Appendix G). Before collecting data, the information regarding the nature, confidentiality and requirements of the study has been provided to the participants (See Appendix H). Participation in the study was on a voluntary basis and informed consent form was given to the participants.

Before data collection, power analysis in the GPower software program was used to determine the required sample size for regression and correlation analyses. The alpha level probability was set as 0.05 and the beta level probability was set as 0.10 (Cunningham & McCrum-Gardner, 2007). Effect size was kept at a medium level (Cohen, 1988). Power analysis indicated that 465 participants are needed for this study. Therefore, 505 participants were taken as the optimal sample size for the investigation. Data were collected by paper-pencil data collection method during the 2019-2020 academic year.

2.1.4. Statistical Analysis

To conduct statistical analyses, the Statistical Package for Social Sciences 23 (SPSS 23) program was used. Descriptive analysis of demographic information was performed using frequency tests for categorical and ordinal data, and calculation of means and standard deviations for continuous data. Independent samples t-test was performed to reveal the effect of gender and the effect of living settings on nomophobia. One-way analysis of variance (ANOVA) test was performed in order to explore whether participants' nomophobic behaviors differed in terms of living with someone or alone, duration of MP ownership, duration of daily MP use, duration of daily mobile internet use, and daily frequency of checking the MP. The bivariate Pearson correlation analysis (two-tailed) was performed to examine the correlational relationships between the study variables and nomophobia, and to

test the study hypotheses. A multiple linear regression analysis forced entry (enter) method was conducted to predict nomophobia from positive affect (PA), negative affect (NA), emotion dysregulation, boredom proneness (BP), and psychopathological symptom severity. The significance level was 0.05 in the statistical analyses.

2.2. Results of Study 1

Prior to analyses, outlier detection analysis was conducted and the data of eight participants were eliminated from the dataset. Therefore, further analyses were carried out using data from 497 participants. Second, an assessment of the normality of data is a prerequisite for many statistical tests, so the values of skewness and kurtosis were calculated to measure normal distribution. The skewness values of the study variables ranged between -.30 and .90, the kurtosis coefficients ranged between -.50 and .39. The values were represented in Table 2.1. The skewness and kurtosis values were between +1.96 and -1.96 (Tabachnick & Fidell, 2007), showing normally distributed data.

Table 2.1. Means, standard deviations, ranges, skewness and kurtosis values of the variables

Variables	*M*	*SD*	Range	Minimum	Maximum	Skewness	Kurtosis
Nomophobia	3.99	1.17	6	1	7	-.03	-.50
PA	3.27	.3	4	1	5	-.30	-.07
NA	2.18	.3	5	1	5	.59	.36
Boredom	3.43	.05	6	1	7	.33	-.25
DERS	2.47	.03	3	1	4	.44	-.05
BSI	1.05	.03	3	0	3	.68	-.18
Anxiety	.91	.03	3	0	3	.89	.22
Depression	1.38	.04	3	0	3	.51	-.46
Negative self	.96	.03	3	0	3	.87	.18
Somatization	.81	.03	3	0	3	.90	.39
Hostility	1.22	.03	3	0	3	.63	-.22

Note. M = Mean, SD = Standard deviation, PA= Positive affect, NA= Negative affect, DERS= The Difficulty of emotion regulation scale, BSI= The Brief symptom inventory.

2.2.1. Demographic Information Analyses

Of the total sample, 255 (52.3%) were female, 242 (48.7%) were male, and their ages ranged between 17 and 30 years (*M*= 20.55, *SD*= 1.87). According to the descriptive statistics, 21.3% of participants had low level of nomophobia (21 ≤ NMP-Q-TR < 60), 57.9% of participants had moderate level of nomophobia (60 ≤ NMP-Q-TR < 100), and 20.7% of

participants had severe level of nomophobia (100 ≤ NMP-Q-TR ≤ 140) (Yildirim et al., 2016). Participants' demographic information were represented in Table 2.2.

Table 2. 2. Participants' demographic information

Gender	N	%
Female	255	51.3
Male	242	48.7
Level of nomophobia		
None	0	0
Low	106	21.3
Moderate	288	57.9
Severe	103	20.7
Living settings		
Home	198	39.8
Dormitory	299	60.2
Living with		
Family	84	16.9
Friends	391	78.7
Alone	22	4.4
Duration of phone ownership		
Less than 1 year	15	3.0
1-3 years	26	5.2
3-5 years	73	14.7
More than 5 years	383	77.1
Duration of daily phone use		
Less than 1 hour	15	3.0
1-3 hours	82	16.5
3-5 hours	195	39.2
More than 5 hours	205	41.2
Duration of daily mobile internet use		
Less than 1 hour	54	10.9
1-3 hours	123	24.7
3-5 hours	186	37.4
More than 5 hours	134	27.0
Frequency of checking the phone		
0-10 minutes	101	20.3
11-20 minutes	158	31.8
21-30 minutes	90	18.1
31-60 minutes	110	22.1
More than 61 minutes	38	7.6
Main purpose of phone usage		
Communication	116	23.3
Social media	287	57.7
Work	2	.4
Research	25	5.0
Camera	4	.8
Game	6	1.2
Music	56	11.3
Shopping	1	.2

Note. N= Number. % = Frequency.

When Table 2.2 is examined, it can be seen that the first purpose of MP use was social networking sites (57.7%). The following purposes were communication (23.3%), music (11.3%), and research (5%). However; game (1.2%), work (0.4%), and shopping (0.2%) were not the main purposes for MP use for most of the participants.

Participants reported higher scores on two dimensions of nomophobia: not being able to access information (*M*= 4.58, *SD*= 1.43) and not being able to communicate (*M*= 4.54, *SD*= 1.53). They reported lower scores for giving up convenience (*M*= 3.93, *SD*= 1.43) and losing connectedness (*M*= 2,91, *SD*= 1.44) dimensions. Means and standard deviations of nomophobia scores were represented in Table 2.3.

Table 2. 3. Means and standard deviations, and minimum maximum values of nomophobia scores

		Not Being Able to Access Information		Losing Connectedness		Not Being Able to Communicate		Giving Up Convenience	
	N	M	SD	M	SD	M	SD	M	SD
F	255	4.73	1.38	3.05	1.43	4.96	1.33	4.27	1.47
M	242	4.42	1.46	2.75	1.43	4.10	1.61	3.57	1.30
T	497	4.58	1.42	2.91	1.43	4.54	1.53	3.93	1.43

Note. N= Number. M= Mean. SD= Standard deviation, Min= Minimum, Max= Maximum, F=Female, M=Male, T=Total.

Independent samples t-test was performed to reveal the effect of gender on nomophobia. According to the results, gender had a statistically significant effect on nomophobia (t (495) = 5.634, p< .001). It was found that females' nomophobia scores (*M*= 4.27, *SD*= 1.12) were significantly higher than males' scores (*M*= 3.69, *SD*= 1.15). The effect size for this analysis (*d*= .51) was found to exceed Cohen (1988) convention for a large effect (*d*> .50). Similarly, as shown in Table 2.3 and Table 2.4, statistically significant relationships were found between all dimensions of nomophobia and gender. Females' scores were higher than males' scores in all dimensions.

Table 2. 4. Results of independent samples t-test analysis in terms of gender

	N	df	t	p	d
Nomophobia	497	495	5.63***	<.001	.51
Not Being Able to Access Information	497	495	2.46*	.01	.22
Losing Connectedness	497	495	2.34*	.02	.21
Not Being Able to Communicate	497	495	6.53***	<.001	.58
Giving Up Convenience	497	495	5.65***	<.001	.51

Note. N= Number, df= Degrees of freedom, d= Cohen's effect size, *p<.05, *** p<.001

Independent samples t-test was performed to compare the nomophobia level of participants living at home with the nomophobia level of participants living in a dormitory. According to the findings, living settings had a significant effect on nomophobia (t (495) =

-3.18, p= .002). According to Cohen (1988) convention for a small effect (d< .30), the effect size for this analysis (d= .29) was small. It was found that the nomophobia levels of participants living in a dormitory (M= 4.12, SD= 1.12) were significantly higher than the nomophobia levels of participants living at home (M= 3.78, SD= 1.21).

One-way ANOVA test was performed to investigate whether participants' nomophobia severity differs in terms of living with someone (family or friend) or alone, duration of MP ownership, duration of daily MP use, duration of daily mobile internet use, and daily frequency of checking the MP. As a follow-up, Bonferroni test was employed to understand which groups differed from each other. The Bonferroni test was preferred because the group sizes were unequal. The results of the Bonferroni test for post hoc comparisons in terms of nomophobia score between groups associated with demographic information, as well as the means and standard deviations for the groups were presented in Table 2.5.

Table 2. 5. Differences in terms of nomophobia score between groups associated with demographic information

Living with	M	SD
Family	3.76	1.28
Friends	4.02	1.13
Alone	4.32	1.30
Duration of phone ownership		
a. Less than 1 hour	4.07	.97
b. 1-3 hours	3.94	1.30
c. 3-5 hours	4.01	1.18
d. More than 5 hours	3.98	1.17
Duration of daily phone use		
a. Less than 1 hour	3.18_{d}	1.244
b. 1-3 hours	3.60_{d}	1.122
c. 3-5 hours	3.90_{d}	1.114
d. More than 5 hours	$4.28_{a, b, c}$	1.154
Duration of daily mobile internet use		
a. Less than 1 hour	$3.46_{c, d}$	1.257
b. 1-3 hours	3.81_{d}	1.168
c. 3-5 hours	$4.00_{a, d}$	1.052
d. More than 5 hours	$4.34_{a, b, c}$	1.189
Frequency of checking the phone		
a. 0-10 minutes	$4.44_{c, d, e}$	1.19
b. 11-20 minutes	$4.22_{d, e}$	1.10
c. 21-30 minutes	$3.84_{a, e}$	.95
d. 31-60 minutes	$3.70_{a, b, e}$	1.12
e. More than 61 minutes	$3.01_{a, b, c, d}$	1.20

Note. M = Mean, SD = Standard deviation. Mean scores on the same row that do not share the same subscript were significantly different from each other; .05 alpha level of Bonferroni test.

According to the findings, there was no significant relationship between the nomophobia level of participants in terms of living with someone (family or friend) or alone (F (2, 494) = 2.57, p> .05, η^2= .01). Similarly, there was no significant relationship between the nomophobia severity and the duration of MP ownership (F (3, 493) = 0.05, p> .05, η^2= .00).

However, the results showed that there was a statistically significant difference between the nomophobia level of participants in terms of daily MP usage time (F (3, 493) = 10.82, p< .001, η^2= .06). The results of the Bonferroni test revealed that the nomophobia scores of individuals who use the MP at least five hours a day (M= 4.28, SD= 1.15) were significantly higher than the nomophobia scores of individuals who use the MP for three to five hours (M= 3.90, SD= 1.11), one to three hours (M= 3.60, SD= 1.12), and less than one hour (M= 3.18, SD= 1.24). Similarly, there was a statistically significant difference between nomophobia levels of participants in terms of daily mobile internet usage time (F (3, 493) = 9.04, p< .001, η^2= .05). Using the Bonferroni test, it was found that individuals who use mobile internet for at least five hours per day (M= 4.34, SD= 1.19) had significantly higher nomophobia scores than the individuals who use mobile internet for three to five hours (M= 4.00, SD= 1.05), one to three hours (M= 3.81, SD= 1.16), and less than one hour (M= 3.46, SD= 1.24).

Moreover, a statistically significant difference was found between the nomophobia level of participants in terms of daily frequency of checking the MP (F (4, 492) = 15.64, p< .001, η^2= .11). The results of the Bonferroni test revealed that the nomophobia levels of the group who checked the MP for at least 61 minutes (M= 3.01, SD= 1.20) had significantly lower nomophobia levels than the groups who checked it for 10 minutes or less (M= 4.44, SD= 1.18), every 11-20 minutes (M= 4.22, SD= 1.10), every 21-30 minutes (M= 3.84, SD= .95), and 31-60 minutes (M= 3.70, SD= 1.11).

2.2.2. Correlation Analyses

To investigate the correlational relationships between the study variables and nomophobia, and to test the following hypotheses, the bivariate Pearson correlation analysis was used. For the multi-collinearity check in the variables, Pearson's correlation coefficient matrix was calculated. Each correlation pair was below .90. Therefore, it is possible to say that there was no multicollinearity in the variables (Dohoo et al., 1997). Linearity was

examined visually using scatterplots (See Appendix I). An alpha level of 0.05 was used to assess the significance of relationships unless otherwise specified. The 95% bias-corrected and accelerated bootstrap (BCa) confidence intervals (CI) were reported in square brackets.

H1: There is a significant and positive relationship between emotion dysregulation and nomophobia.

Results of the correlation analysis confirmed the significant and positive correlation between nomophobia and emotion dysregulation (r = .29, R^2= .08, 95% BCa CI [.21,.36], p< .001). The Pearson correlation coefficients were also computed to assess the relationships between the dimensions of nomophobia and emotion dysregulation. Results showed that emotion dysregulation was significantly and positively correlated with not being able to access information dimension (r = .23, R^2= .06, 95% BCa CI [.15,.32], p< .001), losing connectedness dimension (r = .24, R^2= .06, 95% BCa CI [.15,.33], p<. 001), not being able to communicate dimension (r = .19, R^2= .04, 95% BCa CI [.10, .27], p< .001), and giving up convenience dimension (r = .27, R^2= .07, 95% BCa CI [.18, .35], p< .001). The results of the analyses were represented in Table 2.6. The Pearson correlation coefficients were also calculated to assess the relationships between the dimensions of emotion dysregulation and nomophobia. All dimensions (except the awareness dimension) were significantly and positively correlated with nomophobia. The results of the analyses were displayed in Table 2.7. Overall, there was a small, statistically significant, and positive correlation between emotion dysregulation and nomophobia (Cohen, 1988).

Table 2. 6. Correlations of emotion dysregulation with nomophobia and the dimensions of nomophobia

	Emotion dysregulation					
					BCa 95% Confidence Interval	
	N	r	R^2	p	Lower	Upper
1.Nomophobia	497	.29**	.08	<.001	.21	.36
2.Not Being Able to Access Information	497	.23**	.06	<.001	.15	.32
3.Losing Connectedness	497	.24**	.06	<.001	.15	.33
4.Not Being Able to Communicate	497	.19**	.04	<.001	.10	.27
5.Giving Up Convenience	497	.27**	.07	<.001	.18	.35

Note. **p<.01, N= Number.

Table 2. 7. Correlations between nomophobia and the dimensions of emotion dysregulation

	Nomophobia					
					BCa 95% Confidence Interval	
	N	r	R^2	p	Lower	Upper
1.Clarity	497	.14**	.02	.002	.06	.22
2.Awareness	497	-.03	.00	.56	-.13	.07
3.Impulse	497	.23**	.05	<.001	.15	.31
4.Non-acceptance	497	.26**	.07	<.001	.18	.34
5.Goals	497	.25**	.06	<.001	.16	.34
6.Strategies	497	.27**	.07	<.001	.18	.35

Note. **p<.01, N= Number.

H2a: There is a significant and positive relationship between trait positive affect and nomophobia.

Results showed that nomophobia was not correlated with PA (r = .06, R^2= .00, 95% BCa CI [-.04, .16], p> .05). The Pearson correlation coefficients were also calculated to examine the relationships between PA and the dimensions of nomophobia. Similarly, PA was not correlated with giving up convenience dimension (r = .04, R^2= .00, 95% BCa CI [-.06,.12], p> .05), not being able to communicate dimension (r = .01, R^2= .00, 95% BCa CI [-.08,.01], p> .05), and losing connectedness dimension (r = .04, R^2= .00, 95% BCa CI [-.06,.18], p> .05). In contrast, PA was significantly and positively correlated with not being able to access information dimension (r = .15, R^2= .02, 95% BCa CI [.05,.25], p= .001). Contrary to expectations, correlation analysis results did not confirm the hypothesis. The results of the analyses were represented in Table 2.8.

Table 2. 8. Correlations of positive affect with nomophobia and the dimensions of nomophobia

	Positive Affect					
					BCa 95% Confidence Interval	
	N	r	R^2	p	Lower	Upper
1.Nomophobia	497	.06	.00	.17	-.04	.16
2.Not Being Able to Access Information	497	.15**	.02	.001	.05	.25
3.Losing Connectedness	497	.04	.00	.42	-.06	.18
4.Not Being Able to Communicate	497	.01	.00	.88	-.08	.01
5.Giving Up Convenience	497	.04	.00	.43	-.06	.12

Note. **p<.01, N= Number.

H2b: There is a significant and positive relationship between trait negative affect and nomophobia.

Results of the correlation analysis confirmed that nomophobia was significantly and positively correlated with NA (r = .24, R^2= .06, 95% BCa CI [.15,.32], p< .001). Moreover, NA was significantly and positively correlated with not being able to access information dimension (r = .21, R^2= .05, 95% BCa CI [.13,.29], p<. 001), losing connectedness dimension (r = .18, R^2= .03, 95% BCa CI [.09,.27], p< .001), not being able to communicate dimension (r = .14, R^2= .02, 95% BCa CI [.05,.23], p= .002), and giving up convenience dimension (r = .25, R^2= .06, 95% BCa CI [.17,.33], p< .001). To sum; there was a small, positive, and statistically significant correlation between NA and nomophobia (Cohen, 1988). The results of the analyses were represented in Table 2.9.

Table 2. 9. Correlations of negative affect with nomophobia and the dimensions of nomophobia

	Negative Affect					
					BCa 95% Confidence Interval	
	N	r	R^2	p	Lower	Upper
1.Nomophobia	497	.24**	.06	<.001	.15	.32
2.Not Being Able to Access Information	497	.21**	.05	<.001	.13	.29
3.Losing Connectedness	497	.18**	.03	<.001	.09	.27
4.Not Being Able to Communicate	497	.14**	.02	.002	.05	.23
5.Giving Up Convenience	497	.25**	.06	<.001	.17	.33

Note. **p<.01, N= Number.

H3: There is a significant and positive relationship between boredom proneness and nomophobia.

Correlation analysis showed that nomophobia was significantly and positively correlated with BP (r = .28, R^2= .08, 95% BCa CI [.19,.37], p< .001). Results also confirmed that BP was significantly and positively correlated with not being able to access information dimension (r = .22, R^2= .05, 95% BCa CI [.12,.30], p< .001), losing connectedness dimension (r = .26, R^2= .07, 95% BCa CI [.17,.34], p< .001), not being able to communicate dimension (r = .17, R^2= .03, 95% BCa CI [.09,.25], p< .001), and giving up convenience dimension (r = .27, R^2= .07, 95% BCa CI [.17,.36], p< .001). In brief; there was a small, statistically significant, and positive correlation between BP and nomophobia (Cohen, 1988). The results of the analyses were represented in Table 2.10.

Table 2. 10. Correlations of boredom proneness with nomophobia and the dimensions of nomophobia

	Boredom Proneness					
					BCa 95% Confidence Interval	
	N	r	R^2	p	Lower	Upper
1.Nomophobia	497	.28**	.08	<.001	.19	.37
2.Not Being Able to Access Information	497	.22**	.05	<.001	.12	.30
3.Losing Connectedness	497	.26**	.07	<.001	.17	.34
4.Not Being Able to Communicate	497	.17**	.03	<.001	.09	.25
5.Giving Up Convenience	497	.27**	.07	<.001	.17	.36

Note. **p<.01, N= Number.

H4: There is a significant and positive relationship between psychopathological symptom severity and nomophobia.

To test this hypothesis, the General severity index (GSI) of the BSI were used. According to the results, nomophobia was significantly and positively correlated with the severity of clinically relevant psychopathological symptoms (r = .26, R^2= .07, 95% BCa CI [.18, .34], p< .001). Results also confirmed that the symptom severity was significantly and positively correlated with not being able to access information dimension (r = .20, R^2= .04, 95% BCa CI [.11,.28], p< .001), losing connectedness dimension (r = .19, R^2= .03, 95% BCa CI [.10,.27], p< .001), not being able to communicate dimension (r = .20, R^2= .04, 95% BCa CI [.12,.28], p< .001), and giving up convenience dimension (r = .26, R^2= .07, 95% BCa CI [.18,.33], p< .001). To conclude; there was a small, positive, and statistically significant, correlation between psychological symptoms and nomophobia (Cohen, 1988). The results of the analyses were given in Table 2.11.

Table 2. 11. Correlations of psychopathological symptoms severity with nomophobia and the dimensions of nomophobia

	Psychopathological Symptoms Severity					
					BCa 95% Confidence Interval	
	N	r	R^2	p	Lower	Upper
1.Nomophobia	497	.26**	.07	<.001	.18	.34
2.Not Being Able to Access Information	497	.20**	.04	<.001	.11	.28
3.Losing Connectedness	497	.19**	.03	<.001	.10	.27
4.Not Being Able to Communicate	497	.20**	.04	<.001	.12	.28
5.Giving Up Convenience	497	.26**	.07	<.001	.18	.33

Note. **p<.01, N= Number.

In addition, the correlations between the BSI subscales and nomophobia were examined. According to the findings, nomophobia was positively and significantly correlated with somatization (r = .20, R^2= .04, 95% BCa CI [.11,.28], p< .001), depression (r = .23, R^2= .05, 95% BCa CI [.12,.32], p< .001), anxiety (r = .26, R^2= .07, 95% BCa CI [.16,.34], p< .001), hostility (r = .25, R^2= .06, 95% BCa CI [.16,.34], p< .001), and negative self-concept (r = .22, R^2= .05, 95% BCa CI [.14,.31], p< .001). The results of the analyses were given in Table 2.12.

Table 2. 12. Correlations between the Brief symptom inventory subscales and nomophobia

	Nomophobia					
					BCa 95% Confidence Interval	
	N	r	R^2	p	Lower	Upper
1.Somatization	497	.20**	.04	<.001	.11	.28
2.Depression	497	.23**	.05	<.001	.12	.32
3.Anxiety	497	.26**	.07	<.001	.16	.34
4.Hostility	497	.25**	.06	<.001	.16	.34
5.Negative self-concept	497	.22**	.05	<.001	.14	.31

Note. **p<.01, N= Number.

2.2.3. Regression Analysis

H5: The five-predictor model (emotion dysregulation, trait positive affect, trait negative affect, boredom proneness, and psychopathological symptom severity) significantly predicts nomophobia.

Prior to multiple linear regression analysis, multicollinearity diagnostics were controlled. The variance inflation factor (VIF) values were less than 10 for all predictors. The tolerance statistics were above 0.1 (Field, 2013). These results indicated that there was no multicollinearity in the data. Durbin-Watson statistic was 1.89, which indicated that the values of the residuals were independent (acceptable range changes between 1.50 and 2.50) (Field, 2013). By using linear regression plots of standardized residuals versus standardized predicted values, homoscedasticity assumption was also confirmed. To detect outliers, Cook's distance values were calculated. All values were less than 1, showing that individual cases did not unduly influence the analysis (Cook & Weisberg, 1982). As mentioned above, normality and linearity assumptions were confirmed. The figures showing the

homoscedasticity, linearity, normality assumptions, and the figure showing Cook's distance values were given in Appendix I.

Later, a multiple linear regression analysis forced entry (enter) method was used to predict nomophobia from emotion dysregulation, trait NA, trait PA, BP, and psychopathological symptom severity. As explained above, no statistically significant correlation was found between PA and nomophobia (r = .06, p> .05). However, PA was evaluated in the regression equation as a suppressor variable. Suppressor variable is defined as a predictor variable that is not correlated (or correlated minimally) with the dependent variable but is correlated with at least one of the independent variables. Suppressor variable increases the magnitude of regression coefficients related to other independent variables in the multiple regression equation (Conger, 1974) because it clears the outcome-irrelevant variation from the independent variables and suppresses errors in the independent variables. Thus, it improves the overall predictive power of the regression model by revealing the true relationship between the independent variables and dependent variable (Kristin, 1997). In this study, although the correlation between PA and nomophobia was not statistically significant, the correlation coefficient was not zero. In addition, PA had statistically significant correlations with emotion dysregulation (r = -.20, p< .001) and BP (r = .34, p< .001). Therefore, PA was evaluated in the regression equation as a suppressor variable. Correlations between variables were presented in Table 2.13.

Table 2. 13. Means, standard deviations, and correlations with confidence intervals

Variable	M	SD	1	2	3	4	5
1.PA	2.47	.59					
2.NA	2.18	.63	.07 [-.02, .16]				
3.BP	3.43	1.15	-.34** [-.43, -.25]	.36** [.28, .45]			
4.GSI	1.05	.64	-.09 [-.18, -.00]	.57** [.52, .63]	.47** [.40, .54]		
5.EDR	3.27	.66	-.20** [-.29, -.11]	.54** [.47, .60]	.55** [.48, .62]	.59** [.53, .65]	
6.Nomophobia	3.99	1.17	.06 [-.04, .16]	.24** [.15, .32]	.28** [.19, .37]	.26** [.18, .34]	.29** [.21, .36]

Note. **p<.01, M= Mean, SD= Standard deviation, PA= Positive affect, NA= Negative affect, BP= Boredom proneness, GSI= Psychopathological symptom severity, EDR= Emotion dysregulation. Values in square brackets indicate the BCa 95% confidence interval for each correlation.

The results of multiple linear regression analysis showed that the five-predictor regression model was statistically significant (F (5,491) = 15.79, p< .001), indicating that the model significantly predicts nomophobia. The five-predictor model accounted for 13.9% of the variability, as indexed by the R^2 statistic (R= .37, R^2= .139). Based on the standardized regression coefficients, the importance order of predictors on nomophobia was BP (β= .22, t= 4.03, p< .001), PA (β= .17, t= 3.62, p< .001), emotion dysregulation (β= .14, t= 2.28, p= .023), psychopathological symptom severity (β= .07, t= 1.28, p> .05), and NA (β= .04, t= .64, p> .05).

Results showed that the predictive powers of BP, PA, and emotion dysregulation were statistically significant, but the predictive powers of psychopathological symptom severity and NA were not significant. Therefore, single regression analysis was applied for these two predictors separately. The results showed that the predictive power of NA (F (1,495) = 30.48, p< .001, R= .24, R^2= .06, t= 5.21) and the predictive value of psychopathological symptom severity (F (1,495) = 36.61, p< .001, R= .26, R^2= .07, t= 6.05) were statistically significant. Without them, the three-predictor regression model was also statistically significant (F (3,493) = 25.27, p<.001, R= .37, R^2= .133), but accounted for less variability (13.3%) than the five-predictor model. In addition, considering that these two variables had significant correlations with nomophobia, it was decided to keep them in the regression model. The results of the multiple linear regression analysis were represented in Table 2.14.

Table 2. 14. Results of the multiple linear regression analysis

Model Predictors	B	SE	β	t	p	95% CI for B		Correlations		Collinearity Statistics	
						Lower	Upper	Zero-order	Partial	Tolerance	VIF
Constant	1.32	.39		3.40	.001	.56	2.09				
EDR	.27	.12	.14	2.28	.02	.04	.50	.29	.10	.50	1.98
NA	.07	.10	.04	.64	.53	-.14	.27	.24	.03	.58	1.73
BP	.22	.06	.22	4.03	<.001	.11	.33	.29	.18	.60	1.68
GSI	.13	.11	.07	1.28	.20	-.07	.34	.26	.06	.54	1.86
PA	.29	.08	.17	3.62	<.001	.13	.45	.06	.16	.83	1.21
Model Fit	F (5,491) = 15.79, p<.001, R= .372, R^2= .139										

Note. EDR= Emotion dysregulation, PA= Positive affect, NA= Negative affect, BP= Boredom proneness, GSI= Psychopathological symptom severity, VIF= The variance inflation factor, CI= Confidence interval.

2.3. Discussion of Study 1

2.3.1. Demographic Characteristics of The Participants

According to the findings, 57.9% of participants had moderate and 20.7% of participants had severe nomophobia. These rates are similar to previous prevalence studies conducted in Turkey (Dalbudak et al., 2020; Gurbuz & Ozkan, 2020) and underline the high prevalence of nomophobia among Turkish university students. Similar to previous studies (Ak & Yildirim, 2018; Yildirim et al., 2016), the most common dimensions were not being able to access information and not being able to communicate. These findings disclosed the importance of phone-based communication and information access through the MP for the university students in this sample, and their personal informational and social needs. Similar to the finding of Yildiz et al. (2020), the participants of the present study mainly used the MP for social networking sites. This finding underlines the importance of social media for university students (Gezgin, Hamutoglu, Gultekin et al., 2018).

In line with previous studies, females' nomophobia scores were higher than males' scores (Celik & Atilla, 2018; Gezgin, Cakir et al., 2018; Maeng & Arbeau, 2018; Mallya et al., 2018; Yildirim et al., 2016; Yilmaz et al., 2018), indicating that females are at risk for nomophobia. The proneness of females to nomophobia can be explained as follows. Previous studies have reported that females use the MP more than males for communication and social purposes (Bianchi & Phillips, 2005; Karaaslan & Budak, 2012; van Deursen et al., 2015). Similar to their findings, considering the most common dimensions in the current study (not being able to access information and not being able to communicate), the current findings also support the idea that females may be more likely to exhibit nomophobic behaviors due to their fear of not being able to communicate through the MP and access information through social media (Gezgin, Cakir et al., 2018). In addition, the higher nomophobia scores of females than males can be explained by attachment style. Evidence has revealed that females tend to display more anxious attachment than males (Arpaci, Baloglu, et al., 2017; Collins & Read, 1990) and nomophobia is associated with anxious attachment style (Arpaci, Baloglu, et al., 2017; Buyukcolpan, 2019). Anxiously attached individuals are emotionally more dependent and want more intimacy or attention in their relationships (Arpaci, Baloglu, et al., 2017). Based on these findings, it is possible to say that anxious attachment may be reflected upon an MP, especially by females, because the MP reduces attachment anxiety by offering constant communication with others (Arpaci, Baloglu, et al., 2017; Hibbard, 2015).

Moreover, anxiously attached individuals have a fear of being rejected and abandoned (Konok et al., 2016). According to Winnicott (1953), people's control over objects makes objects secure attachment targets. Therefore, the MP can be considered as an alternative attachment target for females who experience problems with developing reliable attachment bonds with others (Flores, 2004). As a result, females' lack of access to MP could possibly result in higher levels of fear or discomfort compared to males. As different outcomes have been reported by past studies for the intercourse between gender and nomophobia, the present finding may help clarify the relationship between gender and nomophobia.

It was also found that the nomophobia levels of university students living in a dormitory were higher than the nomophobia levels of university students living at home. This finding indicates that living in a dorm may increase nomophobic behaviors due to dormitory conditions. For example, students living in dormitories may have more fear of not hearing calls, not being able to charge the MP whenever they want, or not being able to communicate with their family members whenever they need. A non-significant relationship between the nomophobia level of participants in terms of living with someone (family or friend) or alone confirms this assumption. Moreover, students living in a dorm live away from their primary attachment figures. Various researchers (Bowlby, 1969; Keefer et al., 2012) describe object attachment as a kind of compensatory attachment strategy that occurs in the absence of a primary attachment figure, suggesting that the phone may be accepted as an attachment object. Previous studies have also revealed that university students form an attachment to the MP (Keefer et al., 2012; Konok et al., 2016; Konok et al., 2017) and they gain a sense of safety in the presence of an MP (Fowler & Noyes, 2015; Konok et al., 2017). Therefore, students who live in a dorm may exhibit more nomophobic behaviours if the MP is perceived as an attachment figure. In addition, the primary purpose of the MP is communication, so it provides a constant connection with primary attachment figures (Mannion, 2018). That is, such students may experience separation anxiety without the MP because they cannot communicate with their primary attachment figures (Parent, 2014), potentially leading to nomophobia. However, these assumptions have not been tested in the present study and need further investigation with future studies.

It was also found that university students' nomophobic behaviors increased as the duration of daily MP use, duration of daily mobile internet use, and daily frequency of checking the MP increased. In parallel with the findings of previous studies (Buyukcolpan, 2019; Celik & Atilla, 2018; Dalbudak et al., 2020; Gezgin, Cakir et al., 2018; Sirakaya,

2018; Yildiz et al., 2020), the present findings indicate that young adults who use the MP or mobile internet for more than five hours and control the MP more frequently are more likely to exhibit nomophobic behaviors. These findings also fit the diagnostic criteria for nomophobia (Bragazzi & Puente, 2014). However, the duration of MP ownership was not associated with nomophobia, which is also similar to the findings of previous studies (Adnan & Gezgin, 2016; Ak & Yildirim, 2018). This finding shows that the phone usage pattern has more impact on nomophobia than the duration of ownership.

2.3.2. Emotion Dysregulation and Nomophobia

Since self-control and emotional control abilities are still developing (Berthelsen et al., 2017), the emotional state is less positive and more unstable at young ages (Larson et al., 2002). Therefore, young age is characterized by vulnerability to psychopathological problems and emotion dysregulation (Steinberg, 2005). Considering the prevalence of nomophobia and emotion dysregulation among young people, the lack of study investigating the relationship between these two is a major drawback in the relevant literature. In parallel with the findings of past studies (Catone et al., 2020; Celik & Atilla, 2018), this dissertation has proved that emotion dysregulation is positively associated with young adults nomophobic behaviors and significantly predicts their nomophobia severity. The findings were discussed with the findings of related studies in the following paragraphs. To explain the relationship more clearly, it would be useful to mention the relationship between the sub-dimensions of emotion dysregulation and nomophobia.

To start with, correlation analysis showed that the difficulties in controlling impulses when experiencing NA dimension was positively associated with nomophobia. Similarly, evidence has shown that impulsive behaviours are associated with problematic social networking sites (SNS) use (Rothen et al., 2018), and this dimension significantly predicts problematic internet use (Pettorruso et al., 2020) and problem gaming (Hollett & Harris, 2019). Considering that impulsivity makes it difficult to discontinue and control habitual behaviors (Hoffner & Lee, 2015), a high score in this dimension may lead to permanent and long-term use of the MP. As found in this study, the duration of MP use is also positively associated with nomophobia. Although it is not possible to make a definite inference from the results of correlation analysis, nomophobia may be a consequence of impulsive behaviors displayed to regulate negative emotions and and a lack of self-control caused by impulsivity.

The limited access to emotion regulation (ER) strategies dimension was also found to be positively associated with nomophobia. In a similar vein, previous studies reported that this dimension was a significant predictor of problematic media consumption (Greenwood & Long, 2009) and problematic internet use (Pettorruso et al., 2020). Estévez et al. (2017) also found that this dimension and the former one were the most significant predictors of problematic gaming. These studies partially support the findings of the present study. Moreover, several researchers have also claimed that the MP (Elhai, Dvorak, et al., 2017; Elhai et al., 2018; van Deursen et al., 2015; Zhitomirsky-Geffet & Blau, 2016) and the internet (Salovey et al., 2002; Sertbas et al., 2020; Tull et al., 2009) are used by young adults as a maladaptive coping strategy to avoid negative emotions. All these findings and the current findings indicate that young adults who have difficulty in finding adaptive ER strategies are more likely to use the MP as an ER strategy. Therefore, such individuals may rely solely on the MP to reduce their negative and overwhelming emotions, as they are unable to find alternative techniques (McNicol & Thorsteinsson, 2017; Sun et al., 2019), potentially leading to nomophobic behaviors.

In Study 1, the difficulties in engaging goal-directed behavior dimension was also positively associated with nomophobia. This dimension is related to the avoidance of distressing emotions (Gratz & Roemer, 2004) and young adults who score high in this dimension have problems in self-regulation (Gratz & Roemer, 2004; Hollett & Harris, 2019; Ruscitti et al., 2016). Since the presence of unwanted emotions inhibits individuals' efforts to engage in intentional goal-oriented behaviors (Gratz & Roemer, 2004), such individuals are not able to control themselves while spending time with the MP (Buckner et al., 2012; Hollett & Harris, 2019). Therefore, increased time spent on the MP may lead to a gradual decrease in the capacity to find alternative leisure activities or participate in purposeful activities. Consequently, due to dependence on the MP, these individuals may feel intense distress without it and exhibit nomophobic tendencies.

Similarly, the non-acceptance of emotional responses dimension was positively associated with nomophobia. Experiential avoidance is frequently observed in individuals who score high in this dimension and these individuals tend to use suppression as an ER strategy (Gratz & Roemer, 2004; Hayes et al., 1999). Thus, they may use the MP as a tool to escape from the reality of their emotions or suppress their real emotions. Moreover, the virtual world provides the opportunity to experience emotions freely (Hollett & Harris, 2019). Therefore, individuals who experience difficulty in accepting emotions in the real

world may also use the MP as a tool for emotional discharge. In parallel with the findings of this dissertation, previous researchers found that problematic SNSs users and problematic internet users were more likely to have problems in the non-acceptance of emotional responses, difficulties in controlling impulses, and difficulties in engaging goal-directed behaviors dimensions (Drach et al., 2021; Hormes et al., 2014; Pettorruso et al., 2020). All these findings support the assumption that problematic involvement in MP activities is related to a desire to suppress or avoid negative emotions (Kneer & Glock, 2013; Li et al., 2011) and this desire may turn into nomophobia over time.

According to the results, there was a positive relationship between nomophobia and the lack of emotional clarity dimension. This dimension is characterized by difficulties in identifying and expressing emotions (Gratz & Roemer, 2004). Several researchers have argued that interaction with others provides support for reframing or thinking about problems in more positive ways and helps clarify emotions (Buckner et al., 2012; Hoffner & Lee, 2015; Phoenix et al., 2018). However, if individuals have difficulties in emotional expression (Cisler et al., 2010), they may prefer MP conversation to avoid in-person interactions (Rodríguez et al., 2020; Sapacz et al., 2016). Previous researchers have also shown that a reduction in the ability to identify and label emotions is associated with problematic internet use (Donald et al., 2020) and problematic MP use (Rodríguez et al., 2020). Given that social support and interpersonal contact have beneficial effects on ER, and the MP is almost the best solution for social interaction or emotion expression (e.g. emojis) for such individuals, the MP can be used for compensation of emotion dysregulation by them (Buckner et al., 2012; Hoffner & Lee, 2015). Therefore, it is not surprising that young adults who score high in this dimension may experience intense anxiety or distress when they are not able to use the MP and suffer from nomophobia.

In contrast, the lack of emotional awareness dimension was not found to be associated with nomophobia. Although this dimension is closely related to the lack of emotional clarity dimension, it is surprising that it is not related to nomophobia. It is important to note that some studies also revealed that this dimension was not related to problematic SNS use (Drach et al., 2021; Hormes et al., 2014) and problematic internet use (Pettorruso et al., 2020). Based on these findings, it is possible to assume that young adults are generally aware of the importance of their emotions or they do not need an MP for emotional awareness. What they need is the presence of the MP to control and express their uncontrollable emotions, and reduce the emotional burden that they cannot handle.

Therefore, the MP may not be a tool for emotional awareness, but a tool for expressing, experiencing, changing, and controlling emotions.

Summing up, the findings of Study 1 are in line with the assumptions of UGT (Blumler, 1979) and compensatory internet use theory (CIUT) (Kardefelt-Winther, 2014). Although the MP helps individuals manage emotional problems more effectively, it has negative effects on individuals in long term (Akin, 2014). However, despite the delayed negative consequences, some users continue to compulsively use the MP as a dysfunctional ER strategy (Drach et al., 2021; Phoenix et al., 2018; Rothen et al., 2018). This habitual behaviour causes young adults to feel a constant desire to have an MP to deal with their emotions, further increasing their likelihood of having nomophobia. In addition, nomophobia may also contribute to emotion dysregulation, as it causes an increase in negative emotions (Rodríguez-García et al., 2020). In other words, the results of the correlation analyses support the assumption that there is a bidirectional relationship between the two that intensifies each other's severity. However, considering the results of the regression analysis, it is possible to say that emotion dysregulation may be the precursor of nomophobia. Future studies should explore the predictive power of nomophobia on emotion dysregulation.

2.3.3. Trait Affect and Nomophobia

Study 1 aimed to investigate nomophobia's correlational relationship with trait PA and trait NA, and their predictive effects on nomophobia. Contrary to expectations, trait PA was not correlated with nomophobia. However, it significantly predicted nomophobia. Delavarpour et al. (2019) also reported that trait PA significantly predicted nomophobia, but they did not mention the correlational relationship between the two. When the literature is examined, conflicting findings of trait PA draw attention. While some researchers stated that trait PA was positively associated with MP-related psychological problems (Marty-Dugas & Smilek, 2020; Przybylski et al., 2013; Riordan et al., 2020), some researchers reported that it was negatively associated (Fu et al., 2020; Horwood & Anglim, 2019; Satici, 2019; Savci & Aysan, 2016; Savci et al., 2018). Moreover, some studies showed that PA was not correlated with fear of missing out (FoMO) (Li et al., 2020; Milyavskaya et al., 2018). In contrast, in Study 1, trait NA was positively associated with nomophobia, but its predictive power was not statistically significant, conflicting with the findings of Delavarpour et al. (2019). The current findings were discussed below, respectively.

According to the findings of the correlation and regression analyses, the relationship between nomophobia and positive affectivity is not straightforward, and needs further investigation. However, one possible explanation for the insignificant relationship between trait PA and nomophobia might be that individuals are more willing to share their positive experiences on social media, but are reluctant to share their negative ones (Kanjo et al., 2017). Therefore, constant exposure to the happiness of others on these sites may reduce a person's positive affectivity due to unfavorable social comparisons on social networks (Panger, 2017). Moreover, MP use may be enjoyable and exciting at an early stage, and users may experience increased state PA during MP activities (Li et al., 2020). However, the effect of MP use on PA is limited to short-term experiences (Bayer, Ellison, Schoenebeck, Brady et al., 2016). In the long run, MP use may reduce positive affectivity because the absence of it increases withdrawal symptoms (Stieger & Lewetz, 2018). Once individuals realize the negative effect of the MP on their positive affective states, they may avoid using it frequently.

Another possible reason why trait PA was unrelated to nomophobia is that positive affectivity is associated with an increased preference for in-person interpersonal contact, and helps individuals to maintain successful interpersonal relationships (Chotpitayasunondh & Douglas, 2018; Waugh & Fredrickson, 2006). Therefore, individuals high in trait PA may tend to spend their time with face-to-face activities rather than MP activities (Villanueva et al., 2020). Therefore, being connected with others in the real world may be a protective factor against nomophobia (Stieger & Lewetz, 2018).

However, it should be noted that when the relationship between the dimensions of nomophobia and trait PA is examined, it is striking that trait PA has a positive correlation with the not being able to access information dimension. Individuals high in positive affectivity respond particularly to positive mood inductions (Cropanzano et al., 2003). Therefore, these individuals may use the MP to access positive content on online media platforms (Stieger & Lewetz, 2018). Since the absence of the MP blocks accessing positive content on these sites and if such individuals use the MP mainly for these purposes, they may experience nomophobia. That is, due to the positive correlation of trait PA with the not being able to access information dimension, it might be possible that trait PA was positively correlated with nomophobia, although the correlation coefficient was not statistically significant.

In the five-predictor model, its predictive power can be explained by considering its relation to BP and emotion dysregulation. According to the present findings, trait PA was positively correlated with BP, similar to the findings of Barnett and Klitzing (2006). One possible explanation is that both BP and trait PA are associated with arousal (Mikulas & Vodanovich, 1993; Peterson, 2006) and sensation seeking (Hu et al., 2017; Mathiak et al., 2013; Wang et al., 2020). This brings the mind that individuals who scored high in both trait PA and BP may excessively use specific MP applications such as mobile games or media platforms to experience gratification, pleasure, and physiological arousal (Brand et al., 2016; Hu et al., 2017; Kaye & Bryce, 2014; Lee et al., 2015; Wegmann et al., 2018). Therefore, such individuals may be more likely to need the MP and exhibit nomophobic behaviors.

According to the present findings, trait PA was negatively correlated with emotion dysregulation, similar to the findings of McLaughlin et al. (2019). Evidence has also revealed that SNS use increases individuals' positive emotions and decreases negative ones (Grassi et al., 2009; Juneja & Sethi, 2015). That is, in addition to the alleviation of NA, individuals use the MP because of its PA-enhancing effect. Even if the effect of SNS use on PA is limited to short-term experiences (Bayer, Ellison, Schoenebeck, Brady et al., 2016), the effect may impact some long term factors, such as social support. Given the fact that social support and interpersonal contact have implications on ER, the MP can be used to compensate for emotion dysregulation by individuals low in trait PA (Buckner et al., 2012; Hoffner & Lee, 2015). That is, if individuals have difficulty in upregulating their positive affective states, they may need the presence of an MP. Therefore, based on these findings, it is possible to say that individuals who have difficulties in ER and are low in positive affectivity may be more likely to suffer from nomophobia. In other words, the use of MP as a dysfunctional ER strategy by individuals low in trait PA may have an impact on their nomophobia levels. However, these assumptions are beyond the focus of this dissertation. Future studies should focus on the mediator relationship between them and nomophobia.

To continue with the explanation of the correlation between trait NA and nomophobia, the current results are in line with the assumptions of UGT (Blumler, 1979) and CIUT (Kardefelt-Winther, 2014). It is possible to assume that nomophobia follows the same pattern as MP addiction in terms of positive and then negative reinforcement. The rewards provided by the MP such as social gratification, more control over social interactions, and avoidance coping may compound with consequences, namely nomophobia symptoms (Tran, 2016). To explain in detail, evidence suggests that addictive behaviors are

used in a dysfunctional fashion to cope with unwanted affective states (Brand et al., 2016; Kardefelt-Winther, 2014; Yen et al., 2008), and trait NA captures the general tendency to engage in maladaptive coping strategies (Horwood & Anglim, 2019). Although negative affective states may decrease during MP activities, coping skills may also decline in favor of dysfunctional coping by using the MP. Therefore, in the long run, negative affectivity may predict compulsive MP usage behaviors. The perception that they cannot cope with NA may render individuals more vulnerable to nomophobia due to the increased need for the MP (Brailovskaia et al., 2020).

Similarly, MP use can become a form of automated escapism from negative affective states and turn into a mindless form of usage (Horwood & Anglim, 2019). Since affective states shape individuals' behaviors and interactions (Reeve, 2018), individuals high in negative affectivity may consume more media entertainment in anticipation of improving their affective states (Caplan, 2003; Marino et al., 2016; Nabi et al., 2013; Young, 1998). Therefore, nomophobia symptoms may co-vary positively with both positive expectancies such as to experience enjoyment or connectedness, and avoidance expectancies such as to avoid aversive states. However, the reverse may also be possible. Considering that nomophobia is related to negative emotions such as boredom and loneliness (Durak, 2018; Regan et al., 2020; Shankar et al., 2018), and MP separation causes elevated concerns, worrisome thoughts, and tensed feelings in nomophobes (Mir & Akhtar, 2020), nomophobia may also have an impact on negative affectivity. From this point on, negative affectivity might be the factor that impacts nomophobia and is also impacted by nomophobia. The positive correlation between the two supports this assumption.

Lastly, negative affectivity is related to impulsivity (Billieux et al., 2007) and positive affectivity is related to sensation-seeking (Hu et al., 2017). A dysfunctional interaction between poor executive control and situationally accelerated reward-seeking may promote habitual use of the MP (Whiteside & Lynam, 2001). Therefore, individuals high in trait NA or trait PA may excessively use specific MP applications such as mobile games or media platforms to experience pleasure and physiological arousal (Brand et al., 2016; Hu et al., 2017; Kaye & Bryce, 2014; Lee et al., 2015). Consequently, an urge to downregulate trait NA or upregulate trait PA may lead to impulsive acts on the MP such as compulsive shopping (Flight et al., 2012). That is, the use of MP might be evaluated as regarded as a short-term pursuit of attractive behavior that results in the experience of gratification despite negative long-term consequences (Brand et al., 2016), namely nomophobia.

2.3.4. Boredom Proneness and Nomophobia

The present study revealed that BP is a personal risk factor for nomophobia. Similar to the findings of previous studies (Ozturk & Cosanay, 2020; Regan et al., 2020) and in line with the CIUT (Kardefelt-Winther, 2014) and UGT (Blumler, 1979) assumptions, BP was positively associated with nomophobia. Moreover, it was a significant predictor of nomophobia. Since there is a lack of studies investigating the relationship between the two, these findings were discussed below based on the findings of past studies investigating the relationships between BP and problematic use of MP and the internet.

According to positive reinforcement models, at first, people enjoy using the MP and then crave the positive aspects of their compulsive behaviors (Robinson & Berridge, 2001). In particular, boredom prone young adults expect to escape from boredom by engaging in activities on the MP (Mann & Robinson, 2009; Wegmann et al., 2018; Zhou & Leung, 2012). Since the MP gives them immediate rewards and provides gratification through a variety of activities (Chou et al., 2018), such individuals tend to use it in health-compromising ways (Ozturk & Cosanay, 2020; Regan et al., 2020; Wegmann et al., 2018). Likewise, as being in a low state of arousal, boredom prone individuals generally have difficulty in showing interest in everyday activities or enjoying leisure time (Chou et al., 2018). These individuals tend to use the MP apps more for coping with chronic boredom instead of seeking structured activities in which specific skills are required (Regan et al., 2020). As the MP is an effective tool that provides them with adequate stimulation at all times and in any situation, the MP becomes the focus of their lives and life becomes more boring without it (Stockdale & Coyne, 2020; Wan & Chiou, 2006). Therefore, it is possible to say that such individuals cannot stay away from the MP, and want to be constantly busy with it in every environment to eliminate the negative effect of their tendencies (Biolcati & Cani, 2015; Yam & Kumcagiz, 2020). That means adaptive MP use may turn into maladaptive use easily in boredom prone individuals, resulting in dependence on the MP and then nomophobia.

Moreover, in line with the UGT assumptions (Blumler, 1979), prior studies have posited that individuals use the MP to satisfy their social and emotional needs (Kim & Park, 2007; Li & Chung, 2006). Boredom prone individuals tend to be isolated (McGiboney & Carter, 1988; Tolor, 1989). If they cannot meet the need for a satisfying relationship in the real world, they may try to meet this need in the online word through SNSs (Bai et al., 2021; Griffiths, 2013; Rosen et al., 2013; Wolniewicz et al., 2019; Xu & Tan, 2012; Yam &

Kumcagiz, 2020). That is, the possibility of social engagement may lead to excessive MP use for social purposes (Biolcati et al., 2017; Matic et al., 2015; Sanyal et al., 2015; Yang et al., 2020; Zhang et al., 2014; Zhou & Leung, 2012). Over time, such individuals may lose their social skills and loss of skills may produce more intense boredom and isolation, leading to nomophobia.

Furthermore, exerting self-control under boredom-related tension is often difficult (Billieux, 2012). Therefore, similar to emotion dysregulation, boredom prone individuals also generally experience apathy and difficulty concentrating on the current activity (Fisher, 1993; Struk et al., 2016). They are highly distractible and more likely to engage in secondary activities during a primary activity. That is, when they are performing a boring task, there is a cognitive pull to do something more engaging and satisfying (Salisbury, 2010). As reported by previous studies, BP is positively associated with purposeless browsing, loss of time on the internet (Chou et al., 2018; Lin et al., 2009; Wegmann et al., 2018), the time spent on mobile games (Sanyal et al., 2015; Zhou & Leung, 2012), and the use of online communication applications (Regan et al., 2020). Based on the previous findings and the present findings, it is possible to say that boredom prone individuals and individuals who experience difficulties in ER (engaging in goal-directed behavior dimension) may not be able to control the time spent on the MP. Over time, overuse of the MP may turn into nomophobia due to difficulties in behaving in a goal-directed manner.

Likewise, several researchers have reported that impulsivity, sensation seeking, self-regulation, and attentional control are associated with nomophobia (Bragazzi & Puente, 2014; Durak, 2019; Villar et al., 2017) and BP (Dahlen et al., 2004; Eastwood et al., 2012; Hunter et al., 2016; Krueger et al., 2007; Struk et al., 2015). Previous studies have also reported that nomophobia and BP endorse a habitual checking behaviour that is further reinforced by informational and relational rewards (Al-Saggaf et al., 2019; Oulasvirta et al., 2012; Yam & Kumcagiz, 2020). Taken together, since the MP demands more and more attention from individuals, it becomes almost impossible to ignore notifications. Therefore, nomophobes and boredom prone individuals have difficulty focusing their attention on the current activity (David & Roberts, 2017). That is, BP and nomophobia can intensify each other's intensity due to the difficulty of concentrating on the current task and postponing MP use (Stockdale & Coyne, 2020; Yang et al., 2020), indicating a reciprocal relationship between the two.

2.3.5. Psychological Symptom Severity and Nomophobia

The results of the correlation analysis revealed that nomophobia was positively correlated with psychopathological symptom severity as indicated by the GSI and all subscales of the BSI, supporting the findings of previous studies (Adawi et al., 2019; Goncalves et al., 2020). However, in this study, psychological symptom severity was not a significant predictor of nomophobia. To the best of the researcher's knowledge, there is no study investigating the relationships between nomophobia and psychopathological symptoms among Turkish university students using the BSI-TR. However, Yilmaz and Bekaroglu (2021) investigated the association between psychopathology and nomophobia using the Symptom checklist-90-revised (SCL-90-R) and reported similar results. According to their findings, nomophobia was positively correlated with all subscales of the SCL-90-R and the subscales predicted nomophobia. Based on the findings of previous studies, the present findings can be explained as follows.

To start with, young adults with various psychological disorders are increasingly turning to the internet and SNSs to seek advice from others for their problems, access online interventions, and use self-help applications (Smith, 2015; Torous et al., 2014; Ziebland & Wyke, 2012). On the positive side, within an online network, individuals can remain anonymous and seek information or help without interacting with others (Chung, 2014; Mo & Coulson, 2010; van Uden-Kraan et al., 2008). Thus, anonymity in the virtual world can facilitate self-disclosure and provide relief or alternative solutions to psychological problems (Naslund et al., 2014; Turgeman et al., 2020). Moreover, online therapies may provide an opportunity to reduce their symptoms (Wilson et al., 2010) because online therapies overcome traditional barriers in help-seeking such as time, place, and shame (Amichai-Hamburger & Barak, 2009). In particular, treatment without fear of stigmatization makes the internet and the MP an important tool for individuals with psychopathological symptoms (Berger et al., 2005). On the negative side, excessive MP use for these purposes may result in emotional distress and more severe psychopathological symptoms without it. Therefore, such individuals may experience an intense fear of not being able to use the MP, especially when their symptoms are severe (Torous et al., 2014). The possibility of unavailability of the MP when needed may trigger both nomophobia and psychopathological symptoms.

Moreover, the MP can be considered self-medication and MP dependence may develop as a way of dealing with psychopathological symptoms (Baker et al., 2004; Elhai,

Dvorak, et al., 2017; Elhai et al., 2018; Ergun et al., 2019; Farahani et al., 2018; Kara et al., 2019; King et al., 2013; King et al., 2010; Laconi et al., 2018; Mitchell & Hussain, 2018; Pani et al., 2010; Ryan & Xenos, 2011). According to CIUT, psychopathological symptoms lead to problematic use of technological devices (Kardefelt-Winther, 2014). Young adults with psychopathological symptoms usually feel helpless or frustrated when faced with a challenge (Babadi-Akashe et al., 2014). They try to decrease their internal tensions by using the MP, thus they are more vulnerable to problematic MP use (Calpbinici & Tas-Arslan, 2019; Emelin et al., 2017; Ha et al., 2008; Panova & Lleras, 2016). In other words, as the MP offers plenty of entertaining activities, it can be used as a method to suppress or escape from psychopathological symptoms. Over time, the expectancy of relief increases the likelihood that targeted use will become a habit (van Deursen et al., 2015). However, habitual MP use can be seen as a maladaptive coping strategy that may provide a short-term solution to symptoms but exacerbate symptoms in the long run (Kuss et al., 2018; Murdock, 2013). As a result, the relief provided by MP activities may increase the probability of developing nomophobia (Yen et al., 2009).

With regard to interpersonal and social aspects, individuals with psychopathological symptoms may overuse the MP for non-social purposes such as online shopping or browsing passively on social media without interacting with others (Verduyn et al., 2015). Thereby, non-social use can reduce their symptoms for a limited time. However, it may cause an increase in social isolation and social avoidance in the long term. Previous studies have revealed that individuals with psychopathological symptoms (Baddeley et al., 2012; Billieux, 2012; Douglas et al., 2008; Firat et al., 2018; King et al., 2014; King et al., 2013; Kupferberg et al., 2016; Pierce, 2009) and nomophobia (Khan et al., 2021; King et al., 2013; Panova & Lleras, 2016) experience difficulties in face-to-face interaction due to impaired cognitive and social functioning. On the one hand, the MP enables them to have social relationships (Aker et al., 2017; Boumosleh & Jaalouk, 2017; Cheever et al., 2014; Demirci et al., 2015; Elhai et al., 2016; Harwood et al., 2014; Hawi & Samaha, 2017; Kim et al., 2019; Lee et al., 2018; Turgeman et al., 2020; Yang et al., 2019) and satisfy their social needs in the virtual world, where a person can interact with others remotely (Griffiths & Meredith, 2009). On the other hand, if social difficulties caused by psychopathological symptoms and nomophobia do not improve, such individuals may satisfy their social needs predominantly from virtual relationships (Ha et al., 2008; Ko et al., 2014; Mitchell & Hussain, 2018). Therefore, they may experience impairments in the real world without an

MP (Farahani et al., 2018; González-Bueso et al., 2020). In short, both nomophobia and psychopathological symptoms cause deficits in social skills, so they may increase the need for the MP and intensify each other's severity (Anshari et al., 2016; Caplan, 2003; King et al., 2013; Ko et al., 2014).

Previous studies have also found that depression, anxiety, and negative self-concept lead to an increase in reassurance-seeking behaviors (Billieux, 2012; Billieux, Maurage et al., 2015; Butt & Phillips, 2008; Ko et al., 2014). The need for reassurance can be met through online activities. For example, notifications from SNSs are compulsively controlled by depressive individuals because notifications are seen as a sign of social reassurance (Elhai, Dvorak, et al., 2017). In addition, individuals can reduce the risk of rejection and criticism in the virtual world (Billieux, 2012) because the virtual world allows them to hide the real self and create an ideal persona that might be different from the real self (Farahani et al., 2018; Peng & Liu, 2010; Reid & Reid, 2007; Young & Rogers, 1998). Therefore, online reassurance and the desire to avoid negative evaluations may further increase the need for the MP (Ha et al., 2008; Ko et al., 2014; Mitchell & Hussain, 2018). Moreover, the asynchronous exchange of information on the MP gives more time to think about the content of the messages and provides more control over the relationships. Since individuals who score high in the depression, anxiety, and negative self-concept dimensions often need approval in their relationships (Billieux, 2012), this opportunity makes asynchronous communication more charming for such individuals (Baddeley et al., 2012; Gonzales & Hancock, 2010; King et al., 2014; King et al., 2013; Nezlek et al., 2000; Pierce, 2009). Therefore, as also found in this study, high scores on these dimensions may intensify nomophobic behaviors and keep the person dependent on the MP (Cronkite et al., 1998; Rachman et al., 2008). In other words, MP overuse may create a vicious cycle in which individuals with psychopathological symptoms prefer to spend their time in the online world, and further increasing the severity of symptoms and the fear of MP absence (Cronkite et al., 1998; Rachman et al., 2008).

Individuals high in hostility may also spend more time in the virtual world and prefer text-based communication but their motivation might be different. As most users prefer to use nicknames, anonymity reduces self-awareness, self-control, responsibility, and concerns about social evaluation (Kim, 2013; Reicher et al., 1995). As a consequence of the anonymous nature of the online world (Choo et al., 2010; Kim, 2013; Yen et al., 2017; Yen et al., 2007), hostility can be expressed without restrictions (Yen et al., 2017). In addition,

long-term exposure to violent themes in online games and the violence on the internet can desensitize young adults to violence (Suler, 2004). In the case of desensitization to violence, hostile behaviors may increase over time (Anderson et al., 2017; Ko et al., 2009; Yen et al., 2011). The absence of limitations in the virtual world can provide an environment for such individuals that allows experiencing their hostility in unacceptable ways in the real world (Ko et al., 2009; Yen et al., 2011). Therefore; online platforms, mobile games, and phone-based communication may be seen as the only way to saturate hostile desires. This can lead to fear of not being able to use the MP, ending with nomophobia.

From another perspective, nomophobia may also intensify the severity of psychopathology. Nomophobia is related to sleeping problems (Gentina et al., 2018; Veerapu et al., 2019; Yorulmaz et al., 2018) because nomophobes are afraid of missing calls, messages, and the news on SNSs (Gezgin, Hamutoglu, Gultekin et al., 2018). This need keeps young adults up late at night, thus elicits more psychopathological problems such as somatic symptoms (Nuutinen et al., 2014; Zhou & Leung, 2012), depression (Vernon et al., 2017), and anxiety (Veerapu et al., 2019). Moreover, nomophobia is related to an increase in the duration of MP use (Durak, 2019). As individuals maintain the same posture for hours during MP use, nomophobes are more likely to have somatic symptoms such as pain in the arms, hands, shoulders, and neck (Abdelhameed & Abdel-aziem, 2016; Gold et al., 2012; Kim, 2015).

Lastly, users constantly compare themselves to others on social media platforms. If others are perceived as superior to the person, the process of social comparison exacerbate feelings of worthlessness, aggression, hostility, envy and jealousy (Błachnio et al., 2017; Kross et al., 2013; Liu & Ma, 2020; Tandoc et al., 2015; van Koningsbruggen et al., 2017; Verduyn et al., 2015; Wallace et al., 2017). Since nomophobia is a contributing factor to the development of SNS addiction (Konok et al., 2017), nomophobes may be more likely to make unfavorable social comparisons on SNSs. The discrepancies between the nomophobes' comparison group and the self can lead to an increase in the scores of depression, anxiety, hostility, and negative self-concept dimensions (Tandoc et al., 2015; Vernon et al., 2017).

To conclude, the current findings suggest that similar to internet addiction (Yen et al., 2008), four mechanisms may explain the relationship between nomophobia and psychopathological symptoms. First of all, psychopathological symptoms may cause the

emergence and persistence of nomophobia. Secondly, nomophobia may lead to psychopathological symptoms. Thirdly, psychopathological symptoms and nomophobia may cause vulnerability to each other. Finally, the shared genetic or environmental risk factors may lead to the emergence or persistence of nomophobia and psychopathological symptoms. Given the lack of studies assessing the association between nomophobia and psychopathological symptoms, the current study can be considered as a significant contribution to the understanding of nomophobia among Turkish university students. The present findings also highlight the need for nomophobia assessment in young adults with a high-risk profile for mental illnesses. However, considering that psychopathological symptom severity did not significantly predict nomophobia, future studies should examine the predictive power of nomophobia on psychopathological symptoms.

2.3.6. The Five-Predictor Model and Nomophobia

The relationships between predictors and nomophobia have been explained in detail in the previous sections. In this section, the last points that should be mentioned about the regression model were given below.

In the five-predictor model, the overall predictive power of emotion dysregulation, trait PA, trait NA, BP, and psychopathological symptom severity on nomophobia was investigated. According to the results, the model was significant and these five predictors together explained approximately 14% of the variance in nomophobia. In this model, trait PA was evaluated as a suppressor variable because it was uncorrelated with nomophobia, but still improved the R^2 when it was included in the regression equation (Pandey & Elliott, 2010). Moreover, the results showed that it was a significant predictor of nomophobia. The advantages of inclusion trait PA as a suppressor variable in the regression equation are as follows: determining more correct regression coefficients related to the other predictors; improving the overall predictive power of the model by removing the variance in the predictors due to the measurement errors; and enhancing the accuracy of theory building (Kristin, 1997; Pandey & Elliott, 2010).

According to the regression analysis results, psychopathological symptom severity and trait NA were not statistically significant predictors of nomophobia. Although these two variables were not significant predictors, they were kept in the regression model. Some researchers have recommended that a researcher should choose to retain a variable that has

a strong theoretical justification even if its beta weight is not significant (Dunkler et al., 2014; Heinze & Dunkler, 2017; Shmueli, 2010). As statistical significance plays a minor role in the assessment of predictive power and the p values are just one piece of information, removing everything that is not statistically significant may lead to the loss of important information automatically (Shmueli, 2010). Moreover, omitting a predictor from a model means that its regression coefficient is exactly equal to zero. Consequently, if it is not included in the model, a researcher may report a model which is suboptimal (Dunkler et al., 2014; Heinze & Dunkler, 2017). Therefore, it is not recommended to ignore potentially theoretically meaningful predictors (Shmueli, 2010). Based on these recommendations, to make a more accurate inference, the predictive powers of these two variables were examined separately by single linear regression analysis. Also, the predictive power of the other three variables without these two variables was examined by multiple regression analysis. Since they were significantly correlated with nomophobia, significantly predicted nomophobia in single linear regression analysis, and improved model fit statistics in multiple regression analysis; they were retained in the regression model.

Moreover, in Study 1, standard multiple regression was performed instead of stepwise or backward multiple regression. Therefore, instead of assessing each predictor, emphasis was placed on assessing the regression model as a whole. That is, the focus in the standard method was on investigating how well the model as a whole was. However, it is important to mention that much greater relative weight should be given to BP, emotion dysregulation, and trait PA than to trait NA and psychopathological symptom severity. In other words, based on the beta weights, it is possible to say that the predictors with larger beta weights (BP, emotion dysregulation, and trait PA) contribute more to the prediction of nomophobia than those with smaller beta weights (trait NA and psychopathological symptom severity).

In the previous sections, the bilateral relations of the predictors with nomophobia were discussed in detail. The last point to be mentioned about the regression model is that the independent variables are also related to each other. Previous studies have reported that positive affectivity is associated with BP (Barnett & Klitzing, 2006), psychopathology (Roxas & Glenwick, 2014; Watson et al., 1988), emotion dysregulation (McLaughlin et al., 2019), and negative affectivity (Watson et al., 1988). Negative affectivity is associated with BP (Eastwood et al., 2012; Stephen et al., 1991), psychopathology (Roxas & Glenwick, 2014; Vahedi & Saiphoo, 2018), and emotion dysregulation (Donahue et al., 2014;

McLaughlin et al., 2019). Similarly, BP is associated with emotion dysregulation (Struk et al., 2016) and psychopathology (Eastwood et al., 2012; Elhai et al., 2019; Elhai, Vasquez, et al., 2017; Goldberg et al., 2011; Sommers & Vodanovich, 2000; Struk et al., 2015; Wolniewicz et al., 2019). Lastly, emotion dysregulation is associated with psychopathology (Han et al., 2016). When correlations between the predictors were examined, similar relationships were also found in the present study. From this point of view, it is possible to say that the effects of these predictors on each other increase their total predictive power on nomophobia. For example, trait PA and BP may increase individuals' need for the MP to get the stimulation they need (Barnett & Klitzing, 2006), subsequently fueling nomophobia. Moreover, since some individuals want to avoid the arousal associated with positive emotions (Roemer et al., 2001), MP use as a coping strategy in cases of high positive affectivity and emotion dysregulation may be influential on young adults' nomophobia levels (Amendola et al., 2019). Similarly, young adults' motivation to use the MP to cope with negative affectivity, BP, emotion dysregulation, and psychopathological symptoms may increase the fear of being separated from the MP in cases of the simultaneous increase in the scores of these predictors.

To conclude, in the light of the relevant literature and the findings of Study 1, it is possible to say that the MP offers immediate social, emotional and psychological support, and social connectedness through technology-based communication (Amichai-Hamburger & Barak, 2009; Colasante et al., 2020; Kaviani et al., 2020). It also offers constant gratification and arousal through MP applications (Brand et al., 2016; Hu et al., 2017; Kaye & Bryce, 2014), and the opportunity to freely experience negative and positive emotions, and hostility in the online world (Hollett & Harris, 2019). Additionally, it provides less interpersonal anxiety but also constant reassurance through notifications (Elhai, Dvorak, et al., 2017; Villanueva et al., 2020). That is, young adults may use the MP as a dysfunctional coping strategy to suppress, avoid, regulate, and control their unregulated emotions, negative and positive affectivity, chronic boredom, and psychopathological symptoms. Over time, such motivations can lead to compulsive MP use and subsequently to nomophobia. From another perspective, nomophobia causes intense negative emotions (Durak, 2018), weakened coping skills (Bragazzi et al., 2019), sleeping problems (Gentina et al., 2018), increased duration of MP use (Durak, 2019), unfavorable comparisons on social networks (Tandoc et al., 2015). Therefore; nomophobia may intensify psychopathology, emotion dysregulation, negative affectivity, and chronic boredom. That is, the findings of Study 1

indicate a reciprocal relationship between nomophobia and these psychological constructs. Given the lack of studies assessing the association of nomophobia with these psychological constructs, the present study can be considered as a significant contribution to the understanding of nomophobia. Thus, the present findings may assist clinicians in planning nomophobia-specific prevention programs and treatment interventions. Some further recommendations for the prevention and treatment of nomophobia were given in Chapter 5.

3. STUDY II

3.1. Method

3.1.1. Experience Sampling Method

Before explaining Study 2, it is useful to explain the experience sampling method (ESM) in detail to clarify the aims of Study 2. ESM is a real-time data collection strategy and has its roots in self-monitoring approaches (Trull & Ebner-Priemer, 2009). This method is defined as a structured diary method in which individuals are asked to report their thoughts, emotions, symptoms, and the current context (Myin-Germeys et al., 2009, p. 1533). This ecological approach allows the investigation of experiences within the real-world context. Therefore, it is a useful research method to examine what individuals do, feel, and think in their daily lives (Larson & Csikszentmihalyi 2014). Different terms are used for this kind of momentary assessment methodology and researchers often use these terms interchangeably (Ebner-Priemer & Trull, 2009). The most common terms are experience sampling method (Csikszentmihalyi & Larson, 1987), ecological momentary assessment (Ebner-Priemer & Trull, 2009; Stone et al., 2002), real-time data capture (Stone & Broderick, 2007), day reconstruction method (Kahneman et al., 2004), event sampling (Reis & Gable, 2000), ambulatory assessment (Fahrenberg et al., 2007), and beeper studies (Hurlburt & Heavey, 2004). In this dissertation, the experience sampling method (ESM) is used as an umbrella term to ensure consistency.

In this dissertation, the ESM approach was preferred because this approach has several benefits to understand a range of psychological phenomena. First of all, traditional assessment approaches do not assess the context. Therefore, they are limited in their ability to provide context-sensitive information (Ebner-Priemer & Trull, 2009). The ESM approach provides a deeper understanding of psychopathological phenomena by determining internal and situational determinants of variability in symptoms. In other words, ESM allows investigating how a research phenomenon is related to both internal and external determinants (Myin-Germeys et al., 2018; Trull & Ebner-Priemer, 2009). Also, since data are collected within the real-world context, it has a high ecological validity (Ebner-Priemer & Trull, 2009; Verhagen et al., 2016)

Moreover, the symptoms in daily life might be different from the symptoms detected by retrospective measurements due to the recall bias of symptoms (Myin-Germeys et al., 2018). The ESM approach captures actual experience rather than recalled experience and real-time interactive feedback improves the accuracy of the results (Ebner-Priemer & Trull, 2009). Therefore, bias in underestimating or overestimating the severity of symptoms is reduced in ESM assessments (Myin-Germeys et al., 2018)..

Furthermore, many psychopathologies are characterized by fluctuations in symptoms. However, the single-occasion traditional self-report measures are not able to capture these dynamic fluctuations over time. The longitudinal character of the ESM data allows to determine these fluctuations and assess variability in more detail (Aldao, 2013; Gratz & Roemer, 2004; Myin-Germeys et al., 2018). Moreover, a cross-sectional study design cannot provide information about the direction of relationships over time (Wolfers et al., 2020). Although randomized experiments are recommended to make valid causal inferences, it is often difficult to apply random experiments to investigate temporal dynamics over a longer period of time in a natural environment. Alternatively, the assessment of dependent and independent variables at multiple time points is considered an ideal method to determine the direction. Therefore, ESM can increase the reliability of findings and the validity of causal inference in nonrandomized studies (Myin-Germeys et al., 2009; Raudenbush, 2001; Verhagen et al., 2016; Wolfers et al., 2020)

Lastly, cross-sectional studies cannot provide answers to questions regarding the significance of between-person versus within-person relationships, but ESM does. In ESM data, between-person differences indicate how individuals differ from each other. For example, it indicates how much the average level of nomophobia that participant X usually reports is different from the average level of nomophobia that participant Y usually reports. Within-person differences indicate the variability in the measurements of an individual taken on different occasions. For example, it indicates the difference between the nomophobia level of participant X at a time point and the participant's mean level of nomophobia during the study period, and how this difference is associated with deviances from a participant's usual level of boredom (Wolfers et al., 2020). Therefore, ESM provides rich information about research variables.

To continue with previous ESM studies, one of the initial research using this methodology was started in 1975 at the University of Chicago. In this study, a total of 753

self-reports were collected over a week to investigate how adolescents spend their time and experience their daily activities (Csikszentmihalyi et al., 1977). Since then ESM has been used in many mental health research to examine underlying mechanisms of psychopathology (Myin-Germeys et al., 2018; Myin-Germeys et al., 2009). This approach was used to investigate affective disorders (Axelson et al., 2003; Barge-Schaapveld et al., 1999; Havermans et al., 2007; Knowles et al., 2007; Murray, 2007; Peeters et al., 2006; Whalen et al., 2008), psychotic disorders (Brown et al., 2007; Delespaul et al., 2002; Gard et al., 2007; Myin-Germeys et al., 2000), anxiety disorders (de Beurs et al., 1992; Dijkman-Caes et al., 1993; Gloster et al., 2008), eating disorders (Engel et al., 2005; Greeno et al., 2000; Hilbert & Tuschen-Caffier, 2007; Macht et al., 2004; Smyth et al., 2001; Steiger et al., 1999; Stein & Corte, 2003; Wonderlich et al., 2007), attention deficit hyperactivity disorder (Gehricke et al., 2006; Whalen et al., 2002), autism spectrum disorders (Hurlburt et al., 1994), borderline personality disorder (Russell et al., 2007; Stein, 1996; Trull et al., 2008), insomnia (Bhat et al., 2018). It was also used to investigate treatment effects and adherence to treatment (Barge-Schaapveld & Nicolson, 2002; Barge-Schaapveld et al., 1995; Quittner et al., 2008; Raoux et al., 1994; Wichers et al., 2009).

Moreover, ESM was used to understand a variety of psychological phenomena such as affect (Mneimne et al., 2019; Schimmack, 2003), boredom (Chan et al., 2018; Chin et al., 2017; Matic et al., 2015), mood (Larson et al., 1980; Peeters et al., 2003; Sandstrom et al., 2017), loneliness (Roekel et al., 2014), emotion (Cerin et al., 2001; Goetz et al., 2010; Tong et al., 2005), appraisal (Nezlek et al., 2008), risk perception (Hogarth et al., 2007), coping (Nett et al., 2011), emotion regulation (Grommisch et al., 2019; Silk et al., 2003), self-esteem (Thewissen et al., 2011), and social functioning (Granholm et al., 2013; Villanueva et al., 2020).

Several studies also combined biological assessments with ESM to understand changes in biological mechanisms (Peeters et al., 2004; Steptoe et al., 2007; Stetler et al., 2004; Stetler & Miller, 2005). Similarly, the biological markers of psychopathology were investigated by linking laboratory data to ESM data (Putnam & McSweeney, 2008; Silk et al., 2007). Moreover, some studies used the ESM approach to examine gene-environment interactions in psychopathology (Simons et al., 2009; Wichers et al., 2007).

In this dissertation, both the cross-sectional design and the ESM approach were used. Although trait nomophobia can be detected with standard measurement tools, these

measurements do not provide information about fluctuations in nomophobia during a day. By using the ESM approach, it was aimed to detect these fluctuations. Moreover, the ESM approach was used to determine the state nomophobia's association with the research variables both the within-person level and the between-person level. As an example, a within-person approach was used to investigate whether individuals who feel bored on a particular occasion experience increased nomophobia on the same occasion. A between-person approach was used to investigate whether individuals' proneness to experience boredom affects their state nomophobia scores. With the ESM approach, it is possible to answer these two questions in the same study (Wolfers et al., 2020) because it also allows combining and comparing data collected with standard measurement tools and momentary assessments (Nezlek, 2007).

In addition, similar to inaccurate self-reported frequency of MP use (Deng et al., 2018; Grandhi & Jones, 2010; Myin-Germeys et al., 2018), it was thought that state nomophobia assessment may be affected by memory effect. Individuals may overestimate or underestimate their nomophobia scores. Studies supporting this assumption are available in the literature. As an example, Deng et al. (2018) found that individuals tended to overestimate the daily MP use time by about 23 minutes. Grandhi and Jones (2010) also reported that self-reported problematic MP use was related to objectively measured MP use, but self-reported MP usage frequency was not related to objectively measured MP use. Similarly, Andrews et al. (2015) found that estimated MP use was not related to actual MP use. Summing up, since ESM provides a measure, unbiased by the recall of past experiences (Milyavskaya et al., 2018), it was used to address some key questions about how individuals experienced nomophobia in daily life settings. To the best of the researcher knowledge, up to now, no study has assessed state and trait nomophobia in the same study using the cross-sectional design and the ESM approach.

3.1.2. Participants

In Study 2, convenient sampling method was performed for participant selection. In the ESM approach, there are no strict rules for the number of participants. The number of participants in ESM studies varies depending on the aim of the study. In previous studies, the number of participants ranged from one (Ellingson & Oken, 2011) to 1013 (Yue et al., 2014). However, in the guidelines, a minimum of 15 participants per level is recommended (Berkel et al., 2017; Consolvo & Walker, 2003). Therefore, in this study, data were collected

from 42 university students (Non-nomophobia group= 21, Nomophobia group= 21). As in Study 1, the participants were selected among students from Giresun University for the reasons stated in Section 2.1.1. The inclusion criteria for participation were having a mobile phone (MP), being a university student, and scoring below 60 or above 99 on the Nomophobia questionnaire-Turkish form (NMP-Q-TR). 28 (66.7%) of the participants were female and 14 (33.3%) of the participants were male. Their ages ranged between 18 and 34 years (*M*= 22.17, *SD* = 2.45).

3.1.3. Measurements

Data were collected with the personal information form, the NMP-Q-TR, the Difficulty of emotion regulation scale-Turkish form (DERS-TR), the Positive and negative affect schedule-Turkish form (PANAS-TR), the Short version of the boredom proneness scale-Turkish form (BPS-SR-TR), and the ESM questionnaire (PIEL Survey mobile phone application). Only the PIEL Survey mobile phone application and the ESM questionnaire were explained below because detailed information about the other measurement tools was given in the previous section (See Section 2.1.2).

PIEL Survey Mobile Phone Application

In this dissertation, as recommended by some researchers (Berkel et al., 2017; BinDhim et al., 2015), an MP application (PIEL Survey) was preferred for data collection instead of the paper-and-pencil technique (BinDhim et al., 2015; Myin-Germeys et al., 2009). By doing so, the researcher was able to set a certain time interval for questionnaires, and control the real-time when the questionnaires were completed and participants' compliance with the study. The PIEL Survey mobile phone application was developed by the researchers at the Faculty of Health Sciences at the University of Sydney with the assistance of Vision Australia (Jessup et al., 2012). The application was designed to collect survey data from individuals in their daily lives via the MP. The use of it for research and therapeutic purposes has been approved by many institutions in America, Europe, and the Asia-Pacific region (PIELSurvey, 2019). It is important to mention that the original language of the application is English. The Turkish version of the application was developed by the researcher and the developers of the PIEL Survey mobile phone application for this dissertation. That is, the language of the application interface was translated into Turkish so

that Turkish participants could install and use the application. As an example, commands such as start the survey and skip to the next question have been translated into Turkish. To ensure that the Turkish version of the application runs properly, data was collected from four individuals during one week. In the test flight, the questions used in this study were not used and the collected data were not included in the analyses.

The ESM Questionnaire

In the next step, the ESM questions used in this study were developed. According to the guidelines, it should take less than two minutes to fill out ESM questionnaires (Myin-Germeys et al., 2018; Verhagen et al., 2016), and the ESM study should take less than 10 minutes each day to obtain more reliable results and reduce the dropout rate (Nezlek, 2020). Therefore, ESM questionnaires should contain as few questions as possible. In this study, the ESM questionnaire involved 10 questions. Four of them aimed to measure the current nomophobia level of the participants. These questions were developed based on the NMP-Q-TR. In the development of the items, care was taken to choose sentences that would encompass the four dimensions of nomophobia. In addition, special attention was given to the items with higher factor loadings in the factor analysis in Study 1. In this study, as an example, participants responded to the question "Since the last survey, have you ever been worried that your family and/or friends will not be able to reach you via phone?". Two questions were asked to measure current difficulties in the regulation emotions. Since individuals experience problems in the regulation of positive and negative emotions (Weiss, Gratz, et al., 2015), participants were asked to report the current difficulties they experienced in the regulation of both negative and positive emotions. These two questions were developed based on the items of the DERS-TR and the assumptions of compensatory internet use theory (i.e. technology use for coping with intense emotions) (Kardefelt-Winther, 2014). In particular, the participants were asked to report whether they had difficulty in differentiating, clarifying and controlling emotions since the last survey. These points were emphasized because the difficulties in emotional awareness, emotion differentiation, and emotion control are associated with the use of the MP as a maladaptive coping strategy (Brown et al., 2021; Elhai et al., 2018; Marino et al., 2016; McNicol & Thorsteinsson, 2017; Rodríguez et al., 2020). One question was asked to determine the level of state negative affect. As state negative affect reflects individuals' short-term and context-specific

experience of negative emotions (Gray & Watson, 2007), participants were asked to rate the degree of negative emotions since the last survey. Likewise, one question was asked to determine the level of state positive affect. As state positive affect reflects individuals' temporary and situation-specific experience of positive emotions (Gray & Watson, 2007), participants were asked to rate the degree of positive emotions since the last survey. As recommended (Todman, 2013), state boredom was assessed using a single item that requires the participants to report the degree of boredom since the last survey. Lastly, since no similar studies or scales were found, one question was asked to the participants to rate their satisfaction with the social context since the last survey. All responses were rated on a 5-point Likert type scale (1= *not at all* to 5= *very much*). The ESM questionnaire was given in Appendix J.

3.1.4. Procedure

At first, a pilot study was conducted before data collection. In the pilot study, five academicians were asked to evaluate the comprehensibility of the ESM questionnaire. Three of them work in the department of psychology and two of them work in the faculty of education. Later, the initial form was restructured by the researcher and the final form of the ESM questionnaire was developed. Lastly, data were collected from five university students for seven consecutive days through the PIEL Survey application. After ensuring that the application runs properly, data collection was started. Data were collected during the 2020-2021 academic year. Note that, results obtained from the pilot study were not included in the analyses.

Next, the study was announced to potential participants on the Giresun University Student Information System website. 170 university students applied to participate in the study. At first, all potential participants completed the NMP-Q-TR. According to Yildirim et al. (2016), the cut-off score for the low level of nomophobia is 60. Therefore, in this study, individuals who scored 59 and below were considered as the non-nomophobia group. According to Yildirim et al. (2016), individuals who score 100 and above on the NMP-Q-TR have the high level of nomophobia. Therefore, individuals who scored 100 and above were considered as the nomophobia group. According to the scores, 67 students met the criteria for participation. Before collecting data, the information regarding the nature, confidentiality and requirements of the study has been provided to these participants (See Appendix H). Participation in the study was on a voluntary basis and informed consent form

was given to the participants. Later, the participants downloaded the free ESM application on their MPs. All further instructions and questionnaires were sent through the application.

It is important to explain that the duration of an ESM study and the number of daily assesments depend on the scope and objectives of the study. In the guidelines, a minimum duration of seven days is recommended (Berkel et al., 2017; Consolvo & Walker, 2003). Similarly, the daily frequency of questionnaires should be sufficient to capture fluctuations in the research phenomenon. The frequency is recommended to be between four and ten (Conner et al., 2007). In the previous studies, the duration of the studies ranged from one day (Ellingson & Oken, 2011; Ketykó et al., 2010; Westerink et al., 2009) to five years (Csikszentmihalyi & Schneider, 2001). The total number of observations ranged from seven per person (once a day for seven days) (Christensen, Wood, et al., 2003; Gable et al., 2000) to 270 per person (three times a day for 90 days) (Barrett, 1998). Therefore, in this dissertation, a seven-day protocol was followed and the daily frequency of questionnaires was determined as six.

In addition, signal/time-contingent protocol was followed. In this protocol, participants are asked to submit several systematic self-reports for a specified period of time (Larson & Csikszentmihalyi 2014). This protocol is well suited to investigate states that are susceptible to memory bias (Christensen, Barrett, et al., 2003). Instead of a random sampling schedule, a fixed sampling schedule was preferred. In a fixed sampling schedule, notifications occur at equal time intervals. In a random sampling schedule, notifications occur at random intervals during a day. In this study, a random sampling schedule was not preferred because random notifications may increase reactivity (Myin-Germeys et al., 2018) and therefore may trigger nomophobia

During the data collection period, the same questionnaire was sent to the participants starting from Monday for seven consecutive days. Participants filled the questionnaire six times a day at specified times (each day at 10.00, 12.00, 14.00, 16.00, 18.00, and 20.00). Notifications were sent to the participants when a new questionnaire was ready to answer. Participants who did not fill the questionnaire received two reminder notifications. Access to the unfilled questionnaires were blocked by the application after 10 minutes. At the end of the study, each participant accepted 42 questionnaires. After the last one, participants submitted their questionnaire responses to the researcher through the application. The total response rate of each participant was calculated. The results of the participant who

completed at least 80% of the questionnaires were included in the analysis (acceptable compliance rate >80 %) (Green et al., 2006; Jacobs et al., 2005; Myin-Germeys et al., 2009).

3.1.5. Statistical Analysis

To conduct statistical analyses, the Statistical Package for Social Sciences 23 (SPSS 23) program was used. At first, descriptive analysis of demographic information was performed using frequency tests for categorical and ordinal data, and calculation of means and standard deviations for continuous data. Second, independent samples t-test was used to compare the mean scores of the dropout group and the study group on the NMP-Q-TR, the DERS-TR, the PANAS-TR, the BPS-SR-TR. Third, one-way analysis of variance (ANOVA) test was used to compare the mean scores of the nomophobic group and the non-nomophobic group on the NMP-Q-TR, the DERS-TR, the PANAS-TR, the BPS-SR-TR, and the ESM questionnaire. Then, to investigae the correlational associations between level 1 variables and state nomophobia, the Pearson correlation analysis (two-tailed) was performed. The significance level was 0.05 in the analyses.

In Study 2, the ESM data were treated as a two-level model in which occasions of measurement were nested within participants. In other words, the micro level 1 of repeated observations were nested within the macro level 2 of individuals. Therefore, to analyze the ESM data, hierarchical linear modelling (HLM) was performed in the HLM 8 software. The restricted maximum likelihood (REML) estimation method was used. REML deals with high correlations more effectively than the full maximum likelihood (FML) estimation method. REML is also less sensitive to outliers and has better bias characteristics than FML. It is recommended for small samples with relatively equal-sized groups (Diggle, 1988; Garson, 2014b; Giesbrecht & Burns, 1985). The expectation maximization (EM) algorithm was preferred as an iterative procedure to calculate model quantities. The EM algorithm is a flexible algorithm and a recommended method for missing data (Garson, 2014b). For the state analysis, the random intercept and slope model was used because individuals begin with different nomophobia levels and progress at differential rates over time. To determine systematic change over time, the growth curve model is considered the best analytical choice (McCoach & Kaniskan, 2010; Singer & Willett, 2003). Therefore, growth curve modelling was used to examine variation in individuals' daily nomophobia scores during a week. In addition, fixed effects and random effects of the level 1 predictors were investigated in all models because the correct specification of the model for the fixed and random effects is

necessary to obtain reliable findings (Hoffman & Stawski, 2009). It is important to mention that a fixed effect does not mean that an effect does not change. It indicates that the random variance cannot be reliably estimated (Nezlek, 2020). All results were interpreted with robust standard errors.

3.2. Results of Study 2

3.2.1. Demographic Information Analysis

At first, the data collected with standard measurement tools were analyzed in the SPSS 23. The ESM study started with 67 participants, but 42 participants completed the study. The dropout rate was 37.3%. Descriptive statistics for those who did not complete the study were given in Appendix K. According to descriptive statistics of the dropout group, 9 (36%) of the participants were female, 16 (64%) were male. Their ages ranged between 18 and 23 years (M= 20.40, SD = 2.45). 17 (68%) of these participants were from the non-nomophobia group and 8 (32%) from the nomophobia group. Their nomophobia scores ranged from 21 to 128 (M= 69.72, SD= 35.03). There was no significant difference between trait nomophobia scores of those who completed the study and those who left the study (t (57.51) = 1.22, p > .05). Similarly, no differences between completers and non-completers existed with respect to trait emotion dysregulation (t (65) = .41, p> .05), trait positive affect (t (38.51) = .63, p> .05), trait negative affect (t (65) = .90, p> .05), and boredom proneness (t (65) = -.35, p> .05). However, the mean age of the study group was significantly higher than the dropout group (t (65) = 3.3, p= .002). The reasons for dropping out of the study were as follows: four of them had problems with their phones, eight of them had problems with the PIEL Survey application, three of them left the study due to health problems, and ten of them did not respond to a sufficient number of questionnaires.

Of those who completed the study (N= 42), 14 (33.3%) were male and 28 (66.7%) were female, and their ages ranged from 18 to 34 years (M= 22.17, SD= 2.45). Before the further analyses, outlier detection analysis was conducted and no outliers were detected. Therefore, analyses were conducted using data from 42 participants. The demographic information of the study group was presented in Table 3.1.

Table 3. 1. Descriptive statistics for those who completed the study

Gender	N	%
Female	28	66.7
Male	14	33.3
Living Settings		
Home	40	95.2
Dormitory	2	4.8
Living with		
Family	28	66.7
Friends	11	26.2
Alone	3	7.1
Duration of phone ownership		
Less than 1 year	0	0
1-3 years	0	0
3-5 years	2	4.8
More than 5 years	40	95.2
Duration of daily phone use		
Less than 1 hour	0	3.0
1-3 hours	11	26.2
3-5 hours	8	19.0
More than 5 hours	23	54.8
Duration of Daily Mobile internet use		
Less than 1 hour	3	7.1
1-3 hours	12	28.6
3-5 hours	10	23.8
More than 5 hours	17	40.5
Frequency of checking the phone		
0-10 minutes	11	26.2
11-20 minutes	9	21.4
21-30 minutes	8	19.0
31-60 minutes	10	23.8
More than 61 minutes	4	9.5
Main purpose of phone usage		
Communication	12	28.6
Social media	20	47.6
Work	2	4.8
Research	6	14.3
Camera	0	0
Game	0	0
Music	2	4.8
Shopping	0	0

Note. N= Number. % = Frequency.

3.2.2. Analyses of Trait Measures and ESM Data

One-way ANOVA test was performed to compare the mean scores of the nomophobia group (N= 21) and the non-nomophobia group (N= 21) on the NMP-Q-TR the DERS-TR, the PANAS-TR, and the BPS-SR-TR. As expected, there was a statistically significant difference on trait nomophobia scores between the groups (F (1, 40) = 569.85, p< .001, η^2= .93). The mean trait nomophobia score for the nomophobia group (M= 5.87, SD= .31) was significantly higher than the non-nomophobia group (M= 2.17, SD= .64). Similar differences were found between the groups on trait emotion dysregulation scores (F (1, 40) = 9.67, p= .003, η^2=.20). The mean trait emotion dysregulation score for the

nomophobia group (*M*= 2.67, *SD*= .69) was significantly higher than the non-nomophobia group (*M*= 2.10, *SD*= .48). The groups also differed in terms of boredom proneness (BP) scores (*F* (1, 40) = 4.53, *p*= .04, η^2= .10). The mean score for the nomophobia group (*M*= 3.61, *SD*= 1.37) was significantly higher than the non-nomophobia group (*M*= 2.77, *SD*= 1.16). The groups did not differ in terms of trait negative affect (NA) scores (*F* (1, 40) = 1.55, *p*> .05, η^2= .04), and trait positive affect (PA) scores (*F* (1, 40) = .01, *p*> .05, η^2= .00). However, the mean trait NA score for the nomophobia group (*M*= 2.38, *SD*= .52) was slightly higher than the non-nomophobia group (*M*= 2.13, *SD*= .73). In contrast, the mean trait PA score for the nomophobia group (*M*= 3.39, *SD*= .62) was slightly lower than the non-nomophobia group (*M*= 3.40, *SD*= .41).

One-way ANOVA test was also performed to compare the daily scores of the nomophobia group and the non-nomophobia group. As expected, there was a statistically significant difference in daily nomophobia scores between the groups (*F* (1, 292) = 240.25, *p*< .001, η^2= .45). The mean score for the nomophobia group (*M*= 9.55, *SD*= 3.34) was significantly higher than the non-nomophobia group (*M*= 4.99, *SD*= 1.27). A statistically significant difference was found between the groups in daily emotion dysregulation scores (*F* (1, 292) = 139.97, *p*< .001, η^2= .32). The mean score for the nomophobia group (*M*= 4.55, *SD*= 1.69) was significantly higher than the non-nomophobia group (*M*= 2.71, *SD*= .84). Similarly, there was a significant difference between the groups in terms of daily PA scores (*F* (1, 292) = 3.99, *p*= .04, η^2= .01). The mean score for the nomophobia group (*M*= 2.96, *SD*= .79) was significantly higher than the non-nomophobia group (*M*= 2.76, *SD*= .93). Similar differences were found in daily NA scores between the groups (*F* (1, 292) = 63.47, *p*< .001, η^2=.18). The mean score for the nomophobia group (*M*= 2.60, *SD*= .83) was significantly higher than the non-nomophobia group (*M*= 1.83, *SD*= .84). The groups also differed in terms of daily boredom scores (*F* (1, 292) = 117.84, *p*< .001, η^2=.29). The mean score for the nomophobia group (*M*= 2.85, *SD*= .95) was significantly higher than the non-nomophobia group (*M*= 1.78, *SD*= .72). Lastly, the groups differed in terms of daily satisfaction with the social context scores (*F* (1, 292) = 24.85, *p*< .001, η^2= .08). The mean social environment satisfaction score of the nomophobia group (*M*= 3.37, *SD*= .71) was slightly lower than the non-nomophobia group (*M*= 3.79, *SD*= .74). One-way ANOVA results were presented in Table 3.2.

Table 3. 2. Summary of means, standard deviations, and one-way analyses of variance test of the Study 2 variables according to the group

	Non-nomophobia group		Nomophobia group			
Trait measures	M	SD	M	SD	F (1,40)	η^2
Trait nomophobia	2.17	.64	5.87	.31	569.85***	.93
Trait EDR	2.10	.48	2.67	.69	9.67**	.20
Trait PA	3.40	.41	3.39	.62	.01	.00
Trait NA	2.13	.73	2.38	.52	1.55	.04
BP	2.77	1.16	3.61	1.37	4.53*	.10
	Non-nomophobia group		Nomophobia group			
ESM measures	M	SD	M	SD	F (1,292)	η^2
Daily nomophobia	4.99	1.27	9.55	3.34	240.25***	.45
Daily EDR	2.71	.84	4.55	1.69	139.97***	.32
Daily PA	2.76	.93	2.96	.79	3.99*	.01
Daily NA	1.83	.84	2.60	.83	63.47***	.18
Daily boredom	1.78	.72	2.85	.95	117.84***	.29
Daily SC	3.79	.74	3.37	.71	24.85***	.08

Note. ***p< .001, **p< .01* p<.05, M= Mean, SD= Standard deviation, EDR= Emotion dysregulation, PA= Positive affect, NA= Negative affect, BP= Boredom proneness, ESM= Experience sampling method, SC= Social context.

To reveal the correlational relationships of state nomophobia with level 1 variables, the Pearson correlation analysis (two-tailed) was used. For the multi-collinearity check in predictor variables, Pearson's correlation coefficient matrix was also calculated. Each correlation pair was below .90. Therefore, it is possible to say that no multi-collinearity in variables was detected (Dohoo et al., 1997). Results showed that state nomophobia was significantly correlated with state emotion dysregulation (r = .65, R^2=. 42, 95% BCa CI [1.21,1.36], p< .001), state NA (r = .42, R^2= .18, 95% BCa CI [1.21, 1.49], p< .001), state boredom (r = .51, R^2= .27, 95% BCa CI [1.43, 1.68], p< .001), and satisfaction with the current social context (r = -.17, R^2= .03, 95% BCa CI [-.84, -.46], p< .001). However, state nomophobia was not correlated with state PA (r = .029, R^2= .001, 95% BCa CI [-.06, .26], p> .05).

3.2.3. Hierarchical Linear Modelling

3.2.3.1. The Random Intercept and Slope Model

To test the following hypothesis, the random intercept and slope model was used.

H6. Momentary psychological constructs (emotion dysregulation, positive affect, negative affect, boredom, and satisfaction with the current social context) and individuals' trait-based characteristics (nomophobia, emotion dysregulation, positive affect, negative affect, and boredom proneness) predict state nomophobia.

An assessment of the normality of data is a prerequisite for many statistical tests, so the values of skewness and kurtosis were calculated to assess normal distribution. The skewness values of the variables in the study ranged between -.30 and .90, the kurtosis coefficients ranged between -.50 and .39. The values were given in Table 3.3. The skewness and kurtosis values were ranged between +1.96 and -1.96 (Tabachnick & Fidell, 2007), indicating that the data were normally distributed. The sample of 1679 observations was taken from 42 university students. Descriptive statistics of the level 1 and level 2 variables were given in Table 3.3.

Table 3. 3. Means, standard deviations, ranges, skewness and kurtosis values of the variables for the level 1 and level 2 variables

Variable	N	Mean	SD	Range	Skewness	Kurtosis
Level 1						
State Nomophobia	1679	7.29	3.84	20.00	.93	-.33
State EDR	1679	3.63	1.94	10.00	1.03	.10
State PA	1679	2.86	1.14	5.00	.003	-.72
State NA	1679	2.22	1.20	5.00	.53	-.97
State Boredom	1679	2.31	1.27	5.00	.49	-1.05
SC	1679	3.58	.99	5.00	-.72	.18
Level 2						
Trait Nomophobia	42	4.03	1.94	5.50	.99	1.14
Trait EDR	42	2.39	.66	3.05	-.36	.06
Trait PA	42	3.40	.52	3.30	.76	.69
Trait NA	42	2.25	.64	2.80	.34	.09
BP	42	3.19	1.32	5.88	.00	-2.10

Note. N= Number, M = Mean, SD = Standard deviation, EDR= Emotion dysregulation, PA= Positive affect, NA= Negative affect, SC= Social context, BP= Boredom proneness.

In the next step, it is recommended to begin model building by specifying a null model (Anderson, 2012; Nezlek, 2001). The null model is used for two main purposes. First, it is used to calculate the intraclass correlation coefficient (ICC) and decide whether HLM is needed. The ICC is the magnitude of dependency between observations (Kwok et al., 2008). The ICC ranges between 0 and 1 (Anderson, 2012). If the ICC approaches zero, it means there is no between-person effect, indicating that there is no need to perform HLM analysis. Second, the -2 Log-Likelihood (–2LL) values of the null model are used as a baseline for comparing more complex models (Garson, 2014a). In this study, the null model was used to determine if there is variability in state nomophobia scores at within-person and between-person levels. No predictor was added to the model. The equation for the null model as follows:

Level 1

State nomophobia$_{ti} = \pi_{0i} + e_{ti}$

Level 2

$\pi_{0i} = \beta_{00} + r_{0i}$

In the level 1 equation, π_{0i} represents the within-person intercept term for the person *i* (*i*= 1, …, 42) and e_{ti} represents the residual of person *i*'s state nomophobia score. In the level 2 equation, β_{00} represents the between-person intercept term. r_{0i} represents the person level residual (or error) variance. In other words, r_{0i} is the difference between the π_{0i} term of the *i*th person and β_{00}. It also signifies the intercept is modelled as a random effect (Anderson, 2012; Garson, 2014a; Nezlek, 2007).

The ICC was calculated by using the following formula (Kwok et al., 2008):

$$\text{ICC} = \frac{\tau^{00}}{\tau^{00} + \sigma^2}$$

The ICC was computed as .69 (10.25 / [10.25 + 4.67]), suggesting that 69% of the variance in state nomophobia was due to interindividual differences (level 2), while 31% of the variance in state nomophobia was due to intraindividual differences (level 1). Results from the null model were represented in Table 3.4. Reliability estimate for the null model was given in Appendix L. Low reliability (< .10) indicates that a random coefficient should be considered fixed in further analyses (Raudenbush et al., 2019). Therefore, reliability estimates for random effects were calculated in all analyses and remained in the models because they were above the specified criteria.

Before explaining the models, it is worth mentioning that, for two reasons, time (measurement occasions) was not modelled in the state analyses. First, no systematic change was expected on state nomophobia as a function of time points. Second, the time intervals between observations were not equal. No survey was sent from 08:00 pm till the next day 10:00 am. During the day, each questionnaire was sent every two hours between 10.00 am and 08.00 pm. Therefore, interpreting the effect of time points could lead to false inferences. The fluctuations in state nomophobia scores by measurement occasions were shown in Figure 3.1. Time points should not be evaluated as a systematic increase in time but as the mean scores of all participants for each measurement occasion. Moreover, the figures of the momentary pattern of level 1 predictors, the momentary nomophobia pattern of each participant, and the momentary nomophobia pattern of all participants by group were given in Appendix M.

Table 3. 4. Parameter estimates of the null model in the random intercept and slope model

Null model					
Fixed effects	β	SE	df	t	p
Intercept (β_0)	7.26*** [6.30,8.22]	.49	41	14.80	<.001
Random effects	Variance	SD	df	χ^2	p
Within-person (e)	4.67 [.44,8.90]	2.16			
Between-person (r_0)	10.25*** [3.98,16.52]	3.20	41	3671.38	<.001
Goodness of fit					
Deviance	7538.01				
Parameters	2				
AIC	7542.01				
BIC	7541.25				

Note. ***p< .001, AIC= Akaike information criterion, BIC= Bayesian information criterion, SE= Standard error. Values in square brackets indicate the 95% confidence interval for each coefficient.

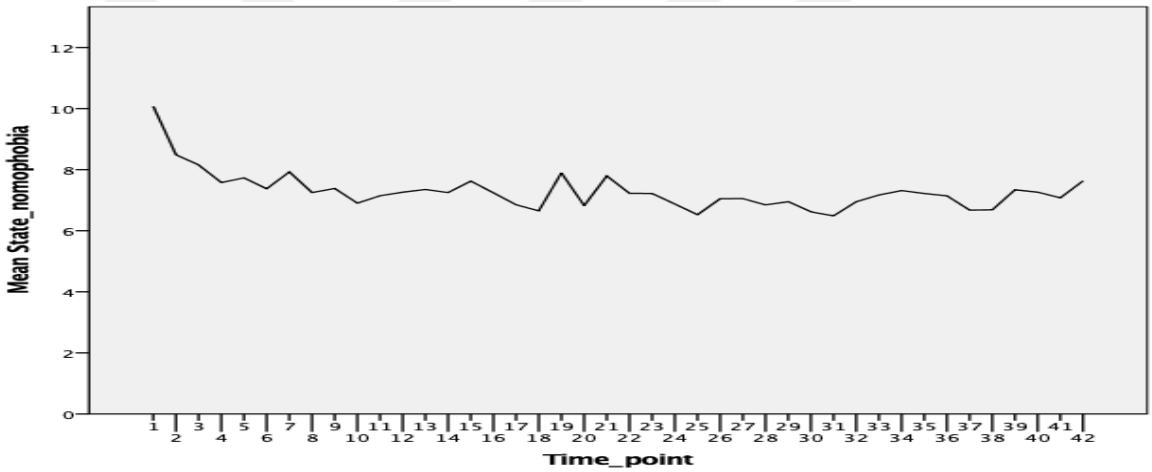


Figure 3. 1. Momentary pattern of state nomophobia

The next stage was to examine conditional models. Conditional means that an effect is modelled as a function of other variables by adding predictors to equations at different levels. As recommended by Anderson (2012), a backwards elimination procedure was followed. That is, all level 1 and level 2 predictors were added to the null model simultaneously and evaluated together. In this model, at the within-person level, the question was whether state nomophobia is higher, for any participants, when state emotion dysregulation, state PA, state NA, state boredom, and satisfaction with the social context are higher. At the between-person level, the question was whether the state nomophobia scores of participants are higher if their trait nomophobia, trait emotion dysregulation, trait PA, trait NA, and BP scores are higher.

As recommended by Raudenbush and Bryk (2002), person-mean centering was preferred for level 1 predictors. By doing so, each individual's score was converted to a deviation score from his/her own mean and used as a level 1 predictor. Grand-mean centering was preferred for level 2 predictors. This means that each individual's score was converted to a deviation score from the grand mean of the entire sample and used as a level 2 predictor. For continuous predictors, centering is recommended as it reduces the multicollinearity between the predictors and eases estimation, but does not change the β values (Anderson, 2012; Hoffman & Stawski, 2009; Wu & Wooldridge, 2005).

Based on the final estimation of variance components, the slopes of state emotion dysregulation and state boredom were allowed to randomly vary in Model 1. The slopes for state PA, state NA, and social context were not predicted as a random effect in Model 1 (Nezlek, 2001). The equation for Model 1 was as follows:

Level 1

$\text{State nomophobia}_{ti} = \pi_{0i} + \pi_{1i}*(\text{State emotion dysregulation}_{ti}) + \pi_{2i}*(\text{State PA}_{ti}) + \pi_{3i}*(\text{State NA}_{ti}) + \pi_{4i}*(\text{State boredom}_{ti}) + \pi_{5i}*(\text{Social context}_{ti}) + e_{ti}$

Level 2

$\pi_{0i} = \beta_{00} + \beta_{01}*(\text{Trait nomophobia}_i) + \beta_{02}*(\text{Trait emotion dysregulation}_i) + \beta_{03}*(\text{Trait PA}_i) + \beta_{04}*(\text{Trait NA}_i) + \beta_{05}*(\text{Boredom proneness}_i) + r_{0i}$

$\pi_{1i} = \beta_{10} + r_{1i}$

$\pi_{2i} = \beta_{20}$

$\pi_{3i} = \beta_{30}$

$\pi_{4i} = \beta_{40} + r_{4i}$

$\pi_{5i} = \beta_{50}$

The deviance from the null model to Model 1 was statistically significant (χ^2 (5) = 415.67, $p < .001$). As shown in Table 3.5, the main effects were statistically significant for all level 1 variables. However, at level 2, only the effect of trait nomophobia on state nomophobia was statistically significant (β= 1.16, SE= .21, $p < .001$). The coefficients of other level 2 predictors were not statistically significant, indicating that trait-based predictors (except nomophobia) failed to impact participants' state nomophobia scores.

Additionally, Pseudo R^2 statistic was computed. It is used as an estimate of effect size in HLM analysis (Raudenbush & Bryk, 2002; Singer & Willett, 2003). It provides an

estimate of the proportional decrease in unexplained variance in the random parameter explained by the predictors in the conditional (full) model (Anderson, 2012). The first formula was used to calculate Pseudo R^2 statistic for level 1 predictors, and the second one was used to calculate Pseudo R^2 statistic for level 2 predictors (Raudenbush & Bryk, 2002):

$$Pseudo\ R^2 = \frac{\sigma^2\ (\text{baseline model}) - \ \sigma^2\ (\text{fitted model})}{\sigma^2\ (\text{baseline model})}$$

$$Pseudo\ R^2 = \frac{\tau^{00}(\text{baseline model}) - \ \tau^{00}(\text{fitted model})}{\tau^{00}(\text{baseline model})}$$

Pseudo R^2 values less than .09 can be interpreted as having a small effect. Values between .09 and .25 are considered to have a moderate effect, and values above .25 have a large effect (Cohen, 1988). According to the findings, the effect size for the level 1 and level 2 variances were large (Pseudo $R^2 \geq .25$). Reliability estimates for Model 1 were given in Appendix L.

From statistical and theory testing perspectives, a better approach is to compare competing statistical models that represent alternative theories about the nature of the data (Bliese & Ployhart, 2002). Therefore, competing models were tested in this study. Based on the parsimony principle (Peugh & Heck, 2016), a backwards elimination procedure was followed and all non-significant level 2 predictors were eliminated by Model 1. The equation for Model 2 was as follows:

Level 1

State nomophobia$_{ti}$ = π_{0i} + π_{1i}*(State emotion dysregulation$_{ti}$) + π_{2i}*(State PA$_{ti}$) + π_{3i}*(State NA$_{ti}$) + π_{4i}*(State boredom$_{ti}$) + π_{5i}* (Social context$_{ti}$) + e_{ti}

Level 2

$\pi_{0i} = \beta_{00} + \beta_{01}$*(Trait nomophobia$_i$) + r_{0i}

$\pi_{1i} = \beta_{10} + r_{1i}$

$\pi_{2i} = \beta_{20}$

$\pi_{3i} = \beta_{30}$

$\pi_{4i} = \beta_{40} + r_{4i}$

$\pi_{5i} = \beta_{50}$

The deviance from the null model to Model 2 was statistically significant (χ^2 (7) = 411.77, p< .001). In Model 2, the intercept (β= 7.26, SE= .34, p < .001) represents the average state nomophobia scores at the beginning of the study when other predictors in the model are controlled at zero. The effect of state emotion dysregulation was significant and positive (β= .42, SE= .09, p < .001). As level 1 predictors were centered on their means, this indicates that one unit increase in a person's mean state emotion dysregulation score leads to .42 points increase in state nomophobia score, controlling other variables in the model. Similarly, the effect of state PA was significant and positive (β= .21, SE= .08, p= .009), indicating that one unit increase in a person's mean state PA score leads to .21 points increase in state nomophobia score. The effect of state NA was significant and positive (β= .16, SE= .08, p= .04), showing that for every unit increase in a person's mean state NA score, the person's state nomophobia score is expected to be .16 higher on average. Similarly, the effect of state boredom was significant and positive (β= .31, SE= .09, p= .001), indicating that one unit increase in a person's mean state boredom score leads to .31 points increase in state nomophobia score, controlling other variables in the model. The effect of satisfaction with the social context was also significant and positive (β= .28, SE= .12, p= .02), showing that one unit increase in a person's mean satisfaction with the social context score leads to .28 points increase in state nomophobia score. At level 2, the effect of trait nomophobia on state nomophobia was statistically significant (β= 1.23, SE= .17, p< .001). As grand-mean centering was performed for level 2 predictors, this result indicates that one unit increase in the participants' mean trait nomophobia scores leads to 1.23 points increase in state nomophobia scores.

Pseudo R^2 statistics showed that the effect size for level 1 and level 2 variances were large (Pseudo $R^2 \geq .25$) (Cohen, 1988). The chi-square, the Akaike information criterion (AIC), and the Bayesian information criterion (BIC) showed that Model 1 fit the data better than Model 2. However, Model 2 was determined as the final model because the differences between the values were very small. Additionally, the significance values of the level 2 predictor (except trait nomophobia) were above .05. The comparative results of Model 1 and Model 2 were given in Table 3.5. Reliability estimates for Model 2 were given in Appendix L.

Table 3. 5. Parameter estimates of Model 1 and Model 2

	Model 1					Model 2				
Fixed effects	β	SE	df	t	p	β	SE	df	t	p
For Intercept 1 (π_0)										
Intercept 2 (β_{00})	7.26*** [6.61,7.91]	.33	36	21.89	<.001	7.26*** [6.59,7.93]	.34	40	21.59	<.001
Trait nomophobia	1.16*** [.75,1.57]	.21	36	5.61	<.001	1.23*** [.90,1.56]	.17	40	7.31	<.001
Trait EDR	.72 [-1.36,2.8]	1.06	36	.68	.50	-	-	-	-	-
Trait PA	-.03 [1.36,1.30]	.68	36	-.05	.96	-	-	-	-	-
Trait NA	.04 [-.96,1.04]	.51	36	.07	.94	-	-	-	-	-
BP	-.21 [-1.13,.71]	.47	36	-.44	.66	-	-	-	-	-
For Slope (π_0)										
State EDR	.42*** [.24,.60]	.09	41	4.76	<.001	.42*** [.24,.60]	.09	41	4.76	<.001
State PA	.21** [.05,.37]	.08	1550	2.63	.009	.21** [.05,.37]	.08	1550	2.63	.009
State NA	.16* [.00,.32]	.08	1550	2.09	.04	.16* [.00,.32]	.08	1550	2.08	.04
State boredom	.31*** [.13,.49]	.09	41	3.52	.001	.31*** [.13,.49]	.09	41	3.52	.001
SC	.28* [.04,.52]	.12	1550	2.40	.02	.28* [.04,.52]	.12	1550	2.40	.02
Random effects	Variance	SD	df	χ^2	p	Variance	SD	df	χ^2	p
Within-person (e)	3.48 [1.81,5.15]	.85				3.48 [-.19,7.15]	1.87			
Between-person (r_0)	5.31*** [.80,9.82]	2.30	35	2228.96	<.001	4.90*** [.57,9.23]	2.21	39	2292.54	<.001
State EDR	.20*** [-.66,1.06]	.44	40	138.80	<.001	.19*** [-.67,1.05]	.44	40	138.79	<.001
State boredom	.13*** [-.58,.84]	.36	40	77.63	<.001	.13*** [-.58,.84]	.36	40	76.63	<.001
Goodness of fit										
Deviance	7122.34					7126.23				
Parameters	7					7				
AIC	7136.34					7140,23				
BIC	7133,68					7137.57				
Pseudo R^2 (level 1)	.25					.25				
Pseudo R^2 (level 2)	.48					.52				

Note. * p< .05, ** p< .01, ***p< .001. EDR= Emotion dysregulation, PA= Positive affect, NA= Negative affect, BP= Boredom proneness, SC= Social context, AIC= Akaike information criterion, BIC= Bayesian information criterion, SE= Standard error. Values in square brackets indicate the 95% confidence interval for each coefficient.

3.2.3.2. The Growth Curve Model

To answer the following research questions, the growth curve model was used.

1. Is there a systematic change in daily nomophobia scores during the week depending on the day of the week?

2. Does the change in daily nomophobia scores throughout the week differ between the nomophobia group and the non-nomophobia group?

3. Does the group (nomophobia/non-nomophobia) moderate the association between daily nomophobia and the day of the week?

The daily data were also treated as a two-level model in which days were nested within persons. A new data set for level 1 analysis was created to investigate the relationship between participants' daily nomophobia scores and the day of the week. In this data set, the average nomophobia scores of the participants for each day were calculated and the daily mean score of nomophobia was used as the outcome variable. The time was coded as the day of the week. A new data set was not created for level 2 analysis, the data set used in the random intercept and slope model was used. The mean score of daily nomophobia was 7.29 (SD= 3.40, skewness= .92, kurtosis= -.30). Figure 3.2 shows the daily pattern of nomophobia utilizing the mean scores of each day. The graphics showing the fluctuation in the individuals' daily nomophobia scores were given in Appendix N. The daily nomophobia pattern of all participants was given in Appendix O. The daily patterns of level 1 predictors were given in Appendix P. The daily mean values for level 1 variables were given to illustrate patterns on daily data in Appendix Q.

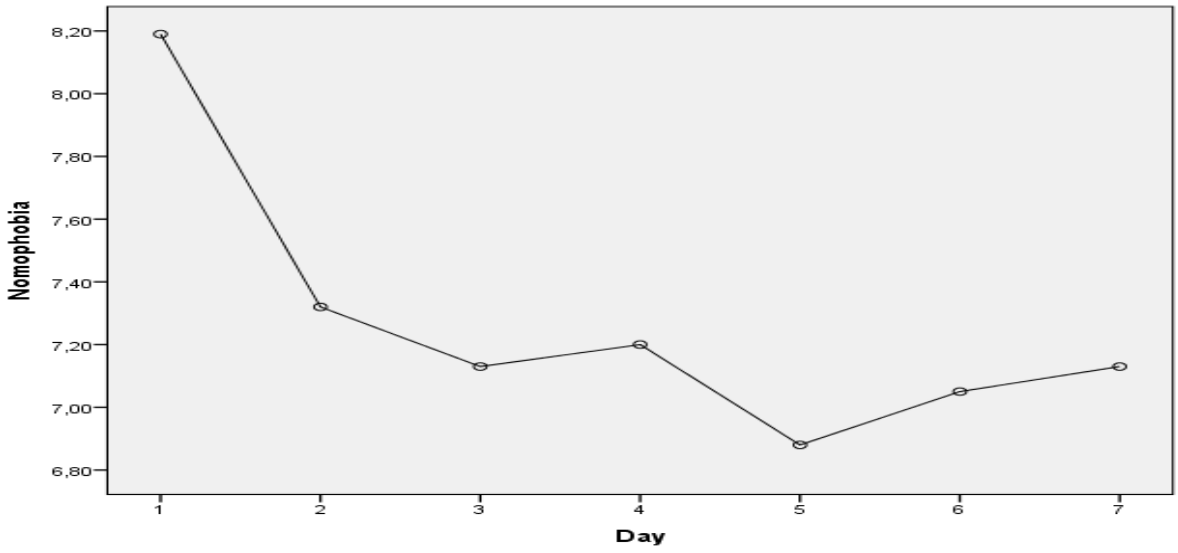


Figure 3. 2. Daily pattern of nomophobia

Initially, the null model was used to determine whether there is variability in daily nomophobia scores at the within-person and between-person levels. The intercept was modelled as a random effect. The equation for the null model was as follows:

Level 1

Daily nomophobia$_{ti}$ = π_{0i} + e_{ti}

Level 2

π_{0i} =β_{00} +r_{0i}

The ICC for this model was computed as 0.86 (10.13 / [10.13 + 1.66]), showing that 86% of the variance in daily nomophobia was due to interindividual differences (level 2), while 14% of the variance in daily nomophobia was due to intraindividual differences (level 1). Results from the null model were represented in Table 3.6. Reliability estimate for the null model was .977.

Table 3. 6. Parameter estimates of the null model in the growth curve model

Null model					
Fixed effects	β	SE	df	t	p
Intercept (β_0)	7.27*** [6.31,8.23]	.49	41	14.82	<.001
Random effects	Variance	SD	df	χ^2	p
Within-person (e)	1.66 [-.87,4.19]	1.29			
Between-person (r_0)	10.13*** [3.90,16.36]	3.18	41	1795.27	<.001
Goodness of fit					
Deviance	1138.25				
Parameters	2				
AIC	1142.25				
BIC	1141.49				

Note. ***p< .001. AIC= Akaike information criterion, BIC= Bayesian information criterion, SE= Standard error. Values in square brackets indicate the 95% confidence interval for each coefficient.

After the partitioning the variability between levels, the simplest possible growth curve model was tested and time variable was entered the equation. The equation for the linear growth model was as follows:

Level 1

Daily nomophobia$_{ti}$ = π_{0i} + π_{1i}*(Day$_{ti}$) + e_{ti}

Level 2

π_{0i} =β_{00} +r_{0i}

$\pi_{1i} = \beta_{10} + r_{1i}$

In this model, day was coded 0, 1, 2, 3, 4, 5, 6 (0= Monday, 1= Tuesday, ..., 6= Sunday). In the level 1 equation, the person *i*'s nomophobia score at day *t (t = 0, ..., 6)* is predicted by an intercept (π_{0i}) and a linear growth slope (π_{1i}). The individual effect of the day (π_{1i}) was represented by a random effect (β_{10}) at level 2. A zero value for the day already represents the beginning of the study, so no further centering was needed (Nezlek, 2020; Raudenbush & Bryk, 2002). The Chi-square deviance test was significant (χ^2 (3) = 10.31, $p < .001$), indicating that the linear growth model fit the data better than the null model.

According to the results of the linear growth model, the intercept was statistically significant (β= 7.70, SE= .56, $p < .001$). There was a significant linear decline in daily nomophobia over seven days (β= -.14, SE= .05, $p = .01$), indicating .14 points decrease in daily nomophobia scores each day. Results from the linear growth model were represented in Table 3.7. Reliability estimates were given in Appendix R.

The coding of time in growth curve models is important for the interpretation of the findings. By adding linear-only time to the model, it is assumed that the change across time is linear but the change is not always linear. In polynomial growth curve models; quadratic, cubic, and higher-power time terms are added to the level 1 model to determine departure from linearity (Biesanz et al., 2004; Greenberg & Phillips, 2014).

Based on the visual data shown in Figure 3.2, it was thought that nomophobia scores may decrease across time in a curvilinear trend. Therefore, the next question to consider was whether the addition of a quadratic effect of the day would better model average changes in daily nomophobia scores over time for all participants. In the level 1 equation, both the linear and quadratic effects were specified as random (Hoffman, 2015; Singer & Willett, 2003). The intercept, the linear slope for the day, and the quadratic slope for the day were allowed to vary according to individual characteristics, as well as randomly between individuals. The equation for quadratic growth in daily nomophobia was as follows:

Level 1

$\text{Daily nomophobia}_{ti} = \pi_{0i} + \pi_{1i}*(\text{Day}_{ti}) + \pi_{2i}*(\text{Day}^2_{ti}) + e_{ti}$

Level 2

$\pi_{0i} = \beta_{00} + r_{0i}$

$\pi_{1i} = \beta_{10} + r_{1i}$

$\pi_{2i} = \beta_{20} + r_{2i}$

The addition of the quadratic effect of the day, again, resulted in a significantly better fitting model (χ^2 (5) = 51.56, p< .001) than the null model and the linear growth model (χ^2 (3) = 17.40, p< .001). That is, the quadratic growth model improved model fit compared to the linear growth model. The findings indicate that the potential of curvature trajectories was suited the data better. Therefore, both the linear effect and quadratic effect were remained in the next model. Results from the quadratic growth model were given in Table 3.7. Reliability estimates were given in Appendix R.

According to the results, the intercept was statistically significant (β= 8.04, SE= .55, p< .001), indicating that the average daily nomophobia across participants at baseline was 8.04. The regression coefficient associated with the relationship between the linear change in time and daily nomophobia scores was negative and statistically significant (β= -.55, SE= .14, p< .001), revealing a day increase in time was associated with .55 points decrease in daily nomophobia scores. There was a statistically significant and positive quadratic effect of the day on daily nomophobia (β= .07, SE= .02, p= .004), indicating that the average quadratic change in nomophobia across participants from the beginning to the end of the study was .07 points. The linear parameter of time shows the rate of change only when the slope at the intercept is zero. However, the quadratic parameter of time shows how the rate of change changes over time (Hedeker, 2004). Compared to the linear change (-.55), the rate of quadratic growth (.07) was small. These results showed that participant's nomophobia scores on Monday to Tuesday dropped by .55 but the decrease slowed by .07 per day.

Before going any further, the cubic effect of the day was added to the quadratic growth model. However, the cubic effect was not statistically significant (β= -.01, SE= .03, p> .05). Also, the deviance from the quadratic growth model to the cubic growth model was not statistically significant (χ^2 (4) = 8.15, p> .05). Therefore, only the linear and quadratic effects of the day were included in the further analyses and the cubic growth model was not reported here.

Table 3. 7. Parameter estimates of the linear growth model and the quadratic growth model

	Linear growth model					Quadratic growth model				
Fixed effects	β	SE	df	t	p	β	SE	df	t	p
For Intercept (π_0)										
Intercept (β_{00})	7.70*** [6.60,8.80]	.56	41	13.91	<.001	8.04*** [6.96,9.12]	.55	41	14.62	<.001
For Slope (π_0)										
Day	-.14** [-.24, -.04]	.05	41	-2.70	.01	-.55** [-.82, -.28]	.14	41	-4.06	<.001
Day^2	-	-	-	-	-	.07** [.03,.11]	.02	41	3.08	.004
Random effects	Variance	SD	df	χ^2	p	Variance	SD	df	χ^2	p
Within-person (e)	1.22 [-.96,3.40]	1.11				1.00 [-.96,2.96]	1.00			
Between-person (r_0)	13.13*** [6.03,30.23]	3.62	41	986.88	<.001	12.25*** [5.39,19.11]	3.50	41	697.28	<.001
Day	.07*** [-.46,.60]	.27	41	111.35	<.001	.32** [-.80,1.44]	.57	41	69.44	.004
Day^2	-					.01** [-.01,.03]	.01	41	72.02	.002
Goodness of fit										
Deviance	1104.09					1086.70				
Parameters	4					7				
AIC	1112.09					1100.70				
BIC	1110.57					1098.04				
Pseudo R^2 (level 1)	.27					.40				
Pseudo R^2 (level 2)	-.29					-.21				

Note. ** p< .01, ***p< .001. AIC= Akaike information criterion, BIC= Bayesian information criterion, SE= Standard error. Values in square brackets indicate the 95% confidence interval for each coefficient.

In the linear growth model and the quadratic growth model, level 2 Pseudo R^2 statistics were negative. A negative value indicates that an additional predictor must be included to increase the magnitude of the variance component (Hedeker & Gibbons, 2006; Singer & Willett, 2003). Therefore, in the next model, group was added to the level 2 equation. Group represents the participants in the nomophobia group (coded as 0= non-nomophobia group and 1= nomophobia group). By doing so, it was aimed to investigate the effect of the day at the within-person level and the effect of group at the between-person level on daily nomophobia. In this model, the cross-level interaction between the day of the week and group was also tested. Individuals in the nomophobia group were expected to have less decrease in their daily nomophobia scores throughout a week. Since all variables were dummy coded and categorical, they were entered uncentered to the model (Nezlek, 2020; Raudenbush & Bryk, 2002). The slopes for the linear and quadratic effect of the day were predicted as a random effect in Model 3. The equation for Model 3 was as follows:

Level 1

$\text{Daily nomophobia}_{ti} = \pi_{0i} + \pi_{1i}*(\text{Day}_{ti}) + \pi_{2i}\,(\text{Day}^2_{ti}) + e_{ti}$

Level 2

$\pi_{0i} = \beta_{00} + \beta_{01}*(\text{Group}_i) + r_{0i}$

$\pi_{1i} = \beta_{10} + \beta_{11}*(\text{Group}_i) + r_{1i}$

$\pi_{2i} = \beta_{20} + r_{2i}$

The deviance from the quadratic growth model to Model 3 was statistically significant (χ^2 (5) = 88.76, p< .001). Similar to the quadratic growth model, the intercept was statistically significant (β= 5.23, SE= .24, p< .001). The linear effect was negative and statistically significant (β= -.42, SE= .13, p= .002). The quadratic effect of the day was statistically significant and positive (β= .07, SE= .02, p = .004). These results indicate that daily nomophobia scores showed rapid declines over the course of a week, but the decline slowed day by day. At level 2, the effect of being nomophobic on daily nomophobia was statistically significant and positive (β= 5.62, SE= .68, p< .001). Since group was coded as 0 for the non-nomophobia group and 1 for the nomophobia group, one unit increase means being nomophobic. That is, being nomophobic leads to 5.62 points increase in daily nomophobia scores, controlling for other variables in the model. The group by day interaction effect was significant and negative (β= -.27, SE= .10, p= .008), showing that change in nomophobia scores for nomophobic individuals per day was .27 points slower than non-nomophobic individuals. According to Pseudo R^2 statistics, the effect size for level 1 and level 2 variances were large (Pseudo $R^2 \geq .25$) (Cohen, 1988). The results were represented in Table 3.8. Reliability estimates for Model 3 were given in Appendix R.

Daily patterns of level 1 predictors were also investigated by using the growth model. According to the findings, the effect of the day on daily emotion dysregulation (β= -.01, SE= .03, p> .05), daily PA (β= -.04, SE= .03, p> .05), daily NA (β= -.01, SE= .02, p> .05), and daily satisfaction with the social context (β= -.04, SD= .02, p> .05) were not statistically significant. In contrast, boredom scores decreased in a curvilinear trend over the week. The linear effect of the day on boredom was statistically significant and negative (β= -.16, SD= .07, p= .02), and the quadratic effect of the day was statistically significant and positive (β= .02, SD= .01, p= .05).

Residual analyses of the random intercept and slope model were given in Appendix S, and residual analyses of the growth model were given in Appendix T.

Table 3. 8. Parameter estimates of Model 3

Model 3					
Fixed effects	β	SE	df	t	p
For Intercept 1 (π_0)					
Intercept 2 (β_{00})	5.23*** [4.76,5.70]	.24	40	21.79	<.001
Group	5.62*** [4.29,6.95]	.68	40	8.20	<.001
For Slope (π_0)					
Day	-.42** [-.67, -.17]	.13	40	-3.31	.002
Day*Group	-.27** [-.47, -.07]	.10	40	-2.81	.008
Day^2	.07* [.03,.11]	.02	41	3.08	.004
Random effects	Variance	SD	df	χ^2	p
Within-person (e)	1.00 [-.96,2.96]	1.00			
Between-person (r_0)	4.63*** [.42,8.84]	2.15	40	282.37	<.001
Day	.28** [-.76,1.32]	.53	40	65.39	.007
Day^2	.01** [-.19,.21]	.10	41	72.03	.002
Goodness of fit					
Deviance	1049.49				
Parameters	7				
AIC	1063.49				
BIC	1060.83				
Pseudo R^2 (level 1)	.39				
Pseudo R^2 (level 2)	.54				

Note. * p< .05, ** p< .01, ***p< .001. AIC= Akaike information criterion, BIC= Bayesian information criterion, SE= Standard error. Values in square brackets indicate the 95% confidence interval for each coefficient.

3.3. Discussion of Study 2

3.3.1. Demographic Characteristics of The Participants

When the descriptive statistics were examined, as in Study 1, the participants of this study predominantly used the MP for social networking sites. More than half of the

participants used the MP for more than five hours a day. This indicates that some non-nomophobic individuals also use the MP for a long period of time. Therefore, this result underlines that nomophobia is not just a problem limited to MP usage time, but is a broader concept. It is possible to say that long-term MP use does not always lead to nomophobia. Not having symptoms of nomophobia despite using the MP for a long period may be an important research topic for future research.

When the scores of the nomophobic group and the non-nomophobic group on the NMP-Q-TR, the DERS-TR, the PANAS-TR, and the BPS-SR-TR were compared; emotion dysregulation, NA, and BP scores of the nomophobic group were higher than the other group. These findings partially support the findings of Study 1 by showing the positive association between nomophobia and these three variables. Similarly, when the daily mean scores were compared; emotion dysregulation, PA, NA, and boredom of the nomophobic group were higher than the other group. However, the daily mean satisfaction score of the nomophobic group was lower than the non-nomophobia group. Moreover, state nomophobia was positively associated with state emotion dysregulation, state NA and state boredom, and negatively associated with satisfaction with the social context. However, state nomophobia was not correlated with state PA. Note that, trait nomophobia was also not correlated with trait PA in Study 1. Therefore, despite the insignificant correlation, the significant predictive power of PA on nomophobia should be examined in more detail in future qualitative and experimental studies.

3.3.2. State Nomophobia

To begin with, one of the most important strengths of Study 2 is its ecological validity. The ESM approach does not only minimizes the problems related to the retrospective recall, it also facilitates the recording of hot cognitions, emotional and behavioral responses (Silk et al., 2003). In this study, nomophobia was evaluated in a natural context, providing a lens into real life and real-time nomophobic behaviors. In addition to the ecological validity of the collected data, the seven-day sampling period increased the amount and depth of data on state nomophobia. The assessments (repeated six times a day) also allowed for the discernment of patterns of nomophobia for each participant and the detection of the momentary effects of the predictors on state nomophobia. Therefore, it is possible to say that the collected data is more comprehensive and generalizable than single-point assessments.

To continue with the findings, the random intercept and slope model (Model 1) showed that all level 1 predictors (state emotion dysregulation, state PA, state NA, state boredom, and satisfaction with the social context) significantly predicted state nomophobia. However, the effects of level 2 predictors (emotion dysregulation, trait PA, trait NA, and BP) were not statistically significant (except trait nomophobia), indicating that trait-based predictors failed to impact participants' state nomophobia scores. According to the findings, an increase in trait nomophobia led to an increase in state nomophobia, indicating that individuals high in trait nomophobia frequently exhibit nomophobic behaviors during the day. This finding also indicates that trait nomophobia provides accurate information about state nomophobia. Based on this finding, it is possible to say that nomophobia can be measured reliably with momentary assessments. The findings also indicate that nomophobia can be evaluated as a trait, but it is also a dynamic construct depending on situational factors.

As mentioned before, traits are permanent personal attributes that refer to the tendency or characteristic ways of feeling, acting and thinking. In contrast, states are temporal and context-dependent reactions that reflect a person's attributions to a particular situation (Gana et al., 2019). Individuals are often very inconsistent across time and situations. Although trait-based assessments give some information about a person's general tendencies in certain areas, these assessments ignore the potential for change over time. As a result, the potential impact of different contextual factors is neglected in trait-based assessments (de Veld et al., 2012; Fleeson, 2007; Tomko et al., 2014). Therefore, traits should not always be considered valid explanations for patterns in how people think, feel, and act in a particular time or situation (Nezlek, 2007). In Study 2, the lack of a relationship between individuals' trait-based characteristics and state nomophobia supports the view that trait measures might sometimes not predict current behaviour (state nomophobia for this dissertation) (Masur, 2018). Therefore, while the predictive effects of state-based variables were significant, their trait counterparts (e.g. boredom proneness and state boredom) had little effect on state nomophobia. After the elimination of insignificant level 2 predictors, Model 2 showed that all level 1 predictors (momentary psychological constructs) and trait nomophobia (level 2 predictor) significantly predicted state nomophobia. These findings were discussed in detail in the following sections.

3.3.2.1. Emotion Dysregulation and State Nomophobia

In Study 2, both trait and state emotion dysregulation were included in the analysis. By doing so, trait-based measures of emotion dysregulation provided information about individuals' emotion dysregulation tendencies. However, since emotion dysregulation is a dynamic construct that can differ from moment to moment in response to internal or external experiences (Lavender et al., 2017), momentary difficulties in emotion regulation (ER) were also measured. These repeated assessments allowed for the detection of the current difficulties in ER (Silk et al., 2003). Since dysregulation of positive emotions is also associated with psychopathology (Carl et al., 2013; Hechtman et al., 2013) and individuals experience problems in the regulation of positive emotions (Weiss, Gratz, et al., 2015), participants were asked to report the current difficulties they experienced in the regulation of both negative and positive emotions. According to the findings, state emotion dysregulation was a significant predictor of state nomophobia at the within-person level. However, trait emotion dysregulation failed to predict state nomophobia at the between-person level. Therefore, it was excluded from the analysis. The findings were discussed in light of related literature in the following paragraphs.

To start with, control over the current social context is critical for ER (Colombo et al., 2020). If individuals cannot change the current context, they are more likely to use distraction or avoidance as an ER strategy in environments with high emotional intensity. In such situations, individuals may frequently use the MP for distraction or avoidance if they feel overwhelmed by current emotional experiences (Hoge et al., 2017; Kenny et al., 2016; Randall & Rickard, 2016; Sheppes et al., 2011). For example, surfing the web during a stressful work meeting, watching videos, or playing online games for hours can be defined as a behavior that functions as avoidance in certain contexts (Endler & Parker, 1990; Kardefelt-Winther, 2014). That is, the use of the MP as a preferred strategy for avoiding current emotional difficulties may foster MP overuse (Przybylski et al., 2013; Riordan et al., 2020; Villani et al., 2018). This may maintain a vicious cycle in which the MP's beneficial effect on ER is sustained, it may strengthen the belief that individuals cannot deal with emotions without it, leading to state nomophobia.

Moreover, individuals often need online or face-to-face support for emotion regulation when they experienced intense emotions (Colasante et al., 2020; Lougheed et al., 2015). If there is a momentary problem in ER, individuals are more likely to prefer online

support and phone-based communication (Kashdan & Farmer, 2014). In particular, online friends can provide alternative reinforcers that help recover from negative events or the presence of them can be a motivation to regulate maladaptive current emotions (Silk et al., 2003). Given that young adults frequently use social networking sites (SNSs) for communication, online emotional support has emerged as a potentially dominant way for young adults to navigate emotions with the help of others (Colasante et al., 2020) and the MP. As a piece of evidence, Marino et al. (2020) reported that difficulty in ER was associated with problematic SNSs use among young adults. Likewise, since online interaction provides an emotional relief, individuals need it more in non-routine situations such as the Covid-19 pandemic (Neubaum et al., 2014). Since the MP has the capacity to instantly connect individuals to emotional support regardless of time and location (Ellis, 2019), this capacity may provide immediate control over current emotions and help clarify current emotions. Therefore, key characteristics of the MP such as permanence and availability may be important in shaping youth's beliefs about the beneficial effects of it on emotion dysregulation (Nesi et al., 2018). However, if they rely solely on the MP for such purposes, they may exhibit nomophobic behaviors in such times.

In addition, some individuals may want to control the increased arousal associated with positive emotions (Roemer et al., 2001; Weiss, Williams et al., 2015). Some may also judge their positive emotions negatively (Beblo et al., 2012). Therefore, they may need the MP to distract themselves from positive emotions and downregulate positive emotions. This converges with the conceptualization of MP activities as a strategy to escape from intense positive emotions, experienced as distress (Weiss, Gratz et al., 2015). In short, it is possible to generalize the effects of the MP on negative emotions to positive emotions such as distraction and avoidance. Moreover, difficulties in positive emotion regulation may also lead to persistent participation in pleasant activities on the MP such as online gambling (Cummins et al., 2009). Thus, based on the findings of the present dissertation, it can be assumed that deficits in positive emotion regulation may also lead to symptoms of nomophobia.

Taken together, in Study 2, the effect of momentary difficulties in emotional awareness and control of emotions on state nomophobia was examined. These two points were emphasized because emotional awareness is vital for human beings, as emotions facilitate the adaptation of the organism to the environment (Rogers, 1959). Through emotional awareness, people become aware of the importance of events for their well-being

(Greenberg, 2002). This means that emotional awareness guides individuals about their goals, needs and concerns (Cole, 1998). Moreover, if individuals cannot identify and label discrete emotions, they are not able to control and regulate these emotions. For such individuals, strategies aimed at escaping emotions are more beneficial such as MP use (Brown et al., 2021). In addition, adaptive ER does not necessarily require an immediate reduction of current emotions. It also involves gaining control over them (Gratz & Roemer, 2004; Gross & Thompson, 2007; Mazaheri, 2015). Therefore, the participants were asked to report whether they had difficulty in differentiating, clarifying and controlling emotions. According to the current findings, such difficulties in ER significantly predicted state nomophobia. Summing up, since nomophobes experience intense fear and anxiety in the absence of an MP (Yildirim & Correia, 2015), it is not surprising that nomophobic behaviors increase when individuals have difficulty regulating their current emotions. In light of the present findings, and the assumptions of UGT (Blumler, 1979) and CIUT (Kardefelt-Winther, 2014), it is possible to say that individuals have a motivation to use the MP as a momentary ER strategy to control and clarify their current emotions by engaging in activities on the MP (Rothen et al., 2018; Sakiroglu, 2019) and this motivation increases the frequency of nomophobic behaviors exhibited at that moment.

3.3.2.2. Affect and State Nomophobia

Research to date has mostly focused on the investigation of trait affect, but the fluctuations of state affect are rarely studied. However, recalling affect is more prone to bias because individuals' current affective states may influence the recall accuracy (Fisher, 2000). Moreover, state affect does not remain constant and fluctuates over time. These fluctuations may be caused by contextual variables as well as internal variables such as emotion dysregulation (Bailon et al., 2019). Study 2 examined the causal relationship between affect (negative and positive) and state nomophobia at the within-person and between-person levels. More specifically, state NA and state NA were evaluated separately as level 1 predictors to capture the within-person association between state nomophobia and state affect. Trait NA and trait PA were evaluated separately as level 2 predictors to understand how stable affective characteristics of individuals predict state nomophobia. HLM analysis showed that state NA and state PA were significant predictors of state nomophobia. That is, an increase in these predictors led to a significant increase in state nomophobia. However, at the between-person level, neither trait PA nor trait NA predicted state nomophobia at a statistically significant degree. Thus, they were eliminated by the

model. Since no ESM study was found examining the relationship between state nomophobia and state affect, the results of this study were discussed in light of the relevant literature.

To start with, individuals focus on the emotional aspects of the MP and have expectations about its beneficial effects on current affective states (Sujan et al., 1993). In particular, users may see the MP as a tool to increase PA by accessing entertainment, especially when they want to feel more positive. As evidence, Stieger and Lewetz (2018) reported that when individuals did not use social media for a week, they reported lower PA levels. One possible explanation might be that social media absence blocks accessing the positive content on these sites and the missing positive outcomes may lead to reduced PA. The exact opposite, positive content may increase state PA and individuals may want to feel even more positive. Thus, it is possible for individuals to feel anxious about situations in which they cannot use the MP to access these sites. That is, when individuals discover the positive impact of the MP on state PA, the desire to increase or maintain the current PA level may lead to overuse of the MP, causing momentary symptoms of nomophobia.

Moreover, most social media sites encourage users to share their current emotions and experiences with their followers (Bayer, Ellison, Schoenebeck et al., 2016). Previous studies showed that sharing personal positive experiences with others increased state PA and the willingness to share such experiences in the future (Gable et al., 2004; Lambert et al., 2012; Langston, 1994). It is possible to assume that the act of sharing generates additional state PA by allowing reexperiencing the event. Moreover, notifications from social apps may produce more state PA due to the increased feeling of being connected with others (Kanjo et al., 2017). That is, enhanced social resources offer another opportunity to enhance one's state PA (Langston, 1994). Due to these reasons, individuals may need the MP to increase state PA, but they may also need it in times of increased PA (Villanueva et al., 2020). Consequently, they may fear not being able to use it in such times. These assumptions help to explain the predictive power of state PA on state nomophobia.

What is more, the MP allows individuals to post at any time and location (Wilken, 2014). For instance, in Snapchat, the shared video or photo must be present-based, indicating that users cannot post an archived document from the MP. Individuals must use the Snapchat interface to take photos or record videos. Evidence has shown that Snapchat use is associated with the heightened state PA (Bayer, Ellison, Schoenebeck et al., 2016) and happiness (Noë

et al., 2019). However, a desire to capture every pleasure moment in daily life may lead to state nomophobia. In addition, such use may also lead to a need for subsequent activities on the MP such as checking comments on the post. These subsequent activities may also trigger state nomophobia.

To continue with state NA, the following assumptions may explain the predictive power of it on state nomophobia. First, similar to the motivation of sharing positive experiences, individuals are motivated to share their negative experiences with others (Langens & Schüler, 2005; Sarsenbayeva et al., 2020). When state NA is high, individuals prefer technology-based communication rather than face-to-face communication (Villanueva et al., 2020). By doing so, individuals have the chance to avoid the additional negative emotions caused by in-person interactions and accept immediate emotional support from the followers. Moreover, individuals have the opportunity to share private information while remaining anonymous in online social support groups. Thereby, increased intimacy and openness provide them with relief from state NA (Bareket-Bojmel & Shahar, 2011). Even though the act of sharing allows reducing state NA and boosting state PA, it also increases the need for the MP and nomophobia. Moreover, emoji characters are becoming the world's fastest-growing language in all forms of technology-based communications. Emojis provide a better expression of the intensity of the current affective states (Novak et al., 2015). For this reason, the desire to express current affective states more clearly may increase the need for the MP, especially in individuals who have also problems in ER.

In addition, state affect informs individuals to change the current situation (Khang et al., 2013; Reeve, 2018). However, similar to emotion dysregulation and boredom, when it is not possible to change the physical environment, individuals can change the situation mentally by escaping from the real world to the online world. Therefore, when experiencing increased state NA, individuals tend to find distractions and divert their attention (Thayer et al., 1994). In such times, individuals may need the MP to avoid their unwanted affective states and reduce the disturbing effect of the environment (Kasa et al., 2020; Lukoff et al., 2018), and may exhibit nomophobic behaviors.

Lastly, social media sites give individuals the opportunity to present themselves as they wish (Kross et al., 2013). From this point of view, individuals have a chance to reduce state NA by accepting positive comments about their posts (Beyens et al., 2020). However, users' motivation to change their negative affective states may outweigh concerns about how

to adaptively interact with these sites. Due to the affect-enhancing effect of SNSs (Bayer, Ellison, Schoenebeck, Brady et al., 2016; Beyens et al., 2020), they may experience an intense fear of not being able to log on their profiles whenever they need it. Moreover, individuals sometimes experience negative emotions due to SNS use but they also experience an urge to access these sites frequently with the desire to keep up with interpersonal relationships (Fox & Moreland, 2015; Villanueva et al., 2020). At some point, connection demands have the potential to become overwhelming and exacerbate state NA (LaRose et al., 2014). Therefore, MP use in general and SNSs use in particular may lead to an increase in state NA. However, state NA may become more severe in the absence of the MP due to the fear of missing posts on SNSs, resulting in nomophobic behaviors.

In summary, as explained above, some of the factors underlying the association of nomophobia with state positive and negative affect are common and fit with UGT (Blumler, 1979) and CIUT (Kardefelt-Winther, 2014) perspectives. However, there are also differences in the underlying causes. It should be noted that these factors were not tested due to the nature of this study, explanations are only inferences based on the relevant literature. It should also be added that although most of the research investigates the relationship between MP use and NA, there is a need for studies investigating the relationship between MP use and PA (Stieger & Lewetz, 2018).

3.3.2.3. Boredom and State Nomophobia

In Study 2, HLM analysis showed that state boredom was a significant predictor of state nomophobia, indicating that an increase in the state boredom scores of the participants leads to an increase in the state nomophobia scores. However, even though evidence has revealed that BP is associated with state boredom (Chan et al., 2018; Matic et al., 2015; Nett et al., 2011) and daily patterns of MP usage reflected BP (Matic et al., 2015), BP was not a significant predictor of state nomophobia in the present study. Although nomophobia is related to the duration of MP use, it is a more broad term than actual use (Yildirim, 2014). Therefore, BP may predict MP use and trait nomophobia but fails to predict state nomophobia. When the daily course of boredom was examined, it was found that the participants were most bored on Mondays, similar to the findings of Mark et al. (2014). The present findings were discussed below.

To start with, boredom has increased dramatically over the past few years (Weybright et al., 2020). The increase in boredom may be part of broader technological changes and time spent with the MP (Martz et al., 2016). In particular, advances in mobile technology have led to a situation where many users are permanently on the internet (Vorderer et al., 2016). As mentioned before, prolonged exposure to monotonous stimulation and the lack of satisfying activity are the main causes of state boredom (Hebb, 1966; Mercer-Lynn et al., 2014; O'Hanlon, 1981). However, in the modern world, individuals are constantly exposed to external stimulation through the MP because most applications automatically recommend content to users such as advertisements and games. Therefore, bored individuals often turn to the MP to seek stimulation and divert their attention from the current context (Pielot et al., 2015). As a piece of evidence, previous studies have reported that state boredom is associated with internet surfing (Mark et al., 2014), online gambling (Goldstein et al., 2016), the duration of phone calls and MP usage (Pielot et al., 2015). Also, an ESM study has revealed that the MP is used as a behavioral-avoidance strategy to relieve state boredom (Nett et al., 2011). Consistent with the UGT (Blumler, 1979) and CIUT (Kardefelt-Winther, 2014) perspectives, the present results indicate that individuals need an MP on hand to cope with it. That is, if the motivation to avoid boredom leads to an increase in MP use, nomophobia symptoms may also increase due to reasons such as running out of mobile internet or battery.

To continue with, individuals tend to get bored when they are alone (Chan et al., 2018; Chin et al., 2017; van Tilburg & Igou, 2012). Previous studies have shown that state boredom is one of the main motivations for SNSs use (Brown & Kuss, 2020; Noë et al., 2019; Stieger & Lewetz, 2018). Especially university students are more likely to participate in online activities because they have enough free time for unstructured socialization, which is positively correlated with boredom (Leung, 2015) and MP dependency (Lin & Chiang, 2017). On the one hand, the MP allows constant connection with others and it can be used as a tool to promote social participation (Yang et al., 2020). Thus, phone-based interactions may help them to reduce state boredom (Pielot et al., 2015). On the other hand, young adults may habitually tend to use the MP even when they are with others. As reported by Dwyer et al. (2018), individuals experienced more boredom when they used the MP during their social interactions. If MP use undermines the emotional benefits of face-to-face interactions, it may reduce satisfaction with the moment, and then may increase boredom in the real world.

Therefore, real-world dissatisfaction may lead to boredom, and boredom may lead to MP dependence and prompt nomophobic behaviors.

3.3.2.4. Satisfaction with The Social Context and State Nomophobia

In Study 2, as expected, satisfaction with social context significantly predicted state nomophobia and an increase in satisfaction led to an increase in state nomophobia. To date, no ESM study has considered the association between satisfaction with the social context and state nomophobia. However, it is known that nomophobia is associated with the social context because one of the symptoms of nomophobia is avoiding the places where the MP use is prohibited such as airports and theatres (Bragazzi & Puente, 2014). Moreover, especially in social situations, nomophobes keep the MP on the table or within hand reach, and keep it in silent mode rather than switching it off (Hasmawati et al., 2020). The presence of an MP allows them to feel safe and distract their attention from the current conditions (Dwyer et al., 2018). By providing safety, the MP may lead to a more positive evaluation of the current context. In the long run, as satisfaction with the social context increases, they may unconsciously need the presence of an MP. In other words, even though individuals are unaware of this relationship, satisfaction with the social context may automatically trigger nomophobic behaviors.

Moreover, CIUT (Kardefelt-Winther, 2014) and UGT (Blumler, 1979) explain users' motivations for internet use not only with psychological problems but also with contextual factors. In parallel with their explanations, past studies have reported that MP use is associated with the conditions of the environment (Do et al., 2011; Ferreira et al., 2014; Lambert et al., 2012; Pielot et al., 2017; Rimé, 2009; Wac et al., 2011). As mentioned before, the MP is an effective tool to provide adequate stimulation in any environment. Satisfaction during MP activities may increase satisfaction with the social context, as these activities serve as a way for extending satisfaction in the virtual world into the real world (Wan & Chiou, 2006). Therefore, like boredom, if the current environment is not satisfying enough, individuals may see the MP as the only or easy way to increase satisfaction (Throuvala et al., 2019; Wan & Chiou, 2006; Zhou & Leung, 2012). However, if individuals turn to the MP to seek stimulation and gain control over the environment, over time, they may become dependent on the MP to enhance the conditions of the environment. This dependence can persist even if they are satisfied with the current environment. Consequently, they may need the presence of it in any context. This conscious or unconscious link between the MP and

satisfaction with the context can become active when individuals experience increased satisfaction. Therefore, an increase in satisfaction with the context may lead to state nomophobia. However, this assumption should be tested with experimental studies.

Lastly, a previous study has revealed that the strongest motivation for posting a photo on SNSs is the desire to record the moment (Souza et al., 2020). Individuals tend to share positive life events on SNSs (Kross et al., 2013; Verduyn et al., 2015). Therefore, increased satisfaction with the social context may trigger a desire to communicate with friends via the MP or share the positive aspects of the current context on SNSs. In Study 2, both satisfaction with social context and state PA were significant predictors of state nomophobia. Therefore, the present findings support the assumption that a more positive evaluation of the environment and increased state PA lead to an increased need for the MP (Kanjo et al., 2017; Kross et al., 2013; Verduyn et al., 2015). However, MP use may not be possible due to various factors such as running out of battery and lack of internet connection. As a result, individuals may experience an intense fear of not being able to use it at such moments and nomophobia symptoms may emerge.

As a final note on Model 2, the level 1 predictors are also interrelated. Previous studies have revealed that social context is associated with emotion dysregulation (Aldao, 2013; English et al., 2017; McRae et al., 2011; Srivastava et al., 2009), state PA (Hasler et al., 2008), state NA (Sandstrom et al., 2017), and state boredom (Chin et al., 2017). Similarly, emotion dysregulation is associated with state NA, state PA (Mackesy-Amiti & Donenberg, 2020), and state boredom (Greenwood & Long, 2009). State boredom is associated with state NA (Chin et al., 2017; Larson & Richards, 1991), state PA (Chin et al., 2017; Mathiak et al., 2013). Lastly, state NA is associated with state PA (Gijsbers van Wijk et al., 1999). That is, the impact of these predictors on each other may have increased their overall effect on state nomophobia. For example, considering that emotion dysregulation is positively related to state NA (Mackesy-Amiti & Donenberg, 2020) and state boredom intensity (Greenwood & Long, 2009), the simultaneous increase in the scores of these three variables may increase the need for the MP due to coping motivation. Likewise, momentary deficits in positive emotion regulation may increase the need for MP use to compensate for such deficits in times of increased state PA (Fu et. al., 2020). From another point of view, as the scores of satisfaction with the social context and state PA increase, individuals may need the MP to satisfy their motivation to share (Kross et al., 2013; Verduyn et al., 2015). Such

shared motivations and needs caused by the predictors may lead to a momentary increase in nomophobia symptoms.

3.3.3. Day of The Week and Daily Nomophobia

In the growth model, the day of the week was included in the analysis to capture and model the change in nomophobia over time. To capture the change more accurately, in Study 2, variables were measured six times a day for seven consecutive days starting on Mondays. As shown by Noë et al. (2017), measurements taken at different times during a day give more accurate results about the change than measurements taken at the end of the day. Similar to retrospective assessments, daily reports collected at the end of the day are more affected by memory bias (Lucas et al., 2021). Therefore, instead of sending a single questionnaire for each day, the ESM data was captured instantaneously during the day. Then, the daily aggregated nomophobia scores of each participant were used in the analyses (Affleck et al., 1994; Bolger et al., 2003; Nezlek, 2001; Uink et al., 2016). It is possible to say that this data collection procedure is one of the strengths of the current study.

According to the results of the growth model, daily nomophobia scores decreased in a quadratic trend throughout the week. These results indicated that daily nomophobia scores decreased faster at the beginning of the week, but the decreasing trend slowed down later on. In other words, participant's nomophobia scores dropped by .55 from Monday to Tuesday, but that decline slowed by .07 per day. As expected, the individuals in the nomophobia group had higher daily nomophobia scores than the individuals in the non-nomophobia group during the week. The significant group by day interaction effect showed that the decrease in the nomophobia scores of the nomophobic participants was less than the non-nomophobic participants. These findings indicate that participants high in trait nomophobia generally have high state nomophobia scores which are relatively more stable. That is, it underlines the predictive power of trait nomophobia on state nomophobia. The possible reasons for this decreasing trend in daily nomophobia scores can be explained as follows.

First of all, during the coronavirus (Covid-19) pandemic, Turkish universities switched from classroom-based teaching to online education. The online teaching methods such as online lectures and sharing of study materials through distant education services allowed students to continue their education. However, students have started to spend more

time on the internet and the MP especially on weekdays (Arora et al., 2021). In this period, students might have experienced an intense fear of not being able to continue their classes, if they could not use the MP. Moreover, considering that they have used the MP not only for lessons but also for other reasons such as alarm clock. Therefore, the fear of not being able to hear the MP alarm may have triggered nomophobia, especially on Mondays. In addition, the participants reported the highest scores on emotion dysregulation, NA, and boredom on Mondays. Considering the predictive power of these three variables on state nomophobia, it is not surprising that nomophobia is at its highest on Monday. These could be some of the possible explanations for the decreasing pattern of nomophobia during the week.

Moreover, a previous study showed that 78.4% of the notifications were received on weekdays and 21.6 % on weekends, and individuals responded to MP notifications in a shorter time on weekdays compared to weekends (Pielot et al., 2014). Similarly, Shwetak et al. (2006) reported that users tended to keep the MP within arm's reach on weekdays compared to weekends. Deng et al. (2018) also found that the duration of MP use decreased from Monday to Saturday. These results indicate that individuals use the MP more frequently on weekdays but especially on Mondays, and want to keep it close to them on weekdays. Therefore, it is possible to say that a more frequent MP use on weekdays and Mondays may have led to the fear of missing important notifications or calls, and thus a high level of nomophobia.

Furthermore, during the data collection period, to control the spread of the coronavirus, the Turkish Government imposed nationwide lockdowns during the weekends. After a two-day quarantine, university students may have been more inclined to spend time outside on weekdays, but especially on Mondays. Therefore, the need for the MP may have been greater on Mondays for reasons such as communicating with friends to set up a meeting and using social media for sharing. Likewise, during this period, cafes and restaurants were closed. Therefore, students did not have a chance to charge the MP while they were out. For such reasons, nomophobia symptoms may have been higher earlier in the week.

It should be noted that one reason for the dramatic decrease in nomophobia scores from Monday to Tuesday may have been affected by the data collection method of the current study. Data collection was started on Mondays, thus the participants' fear of missing the questionnaires may have triggered nomophobia. During the study period, this fear may have decreased, leading to a decrease in nomophobia. Therefore, the current study should be

repeated with the paper-pencil data collection method and the current results should be confirmed by further studies. In addition, the participants were not interviewed about the reasons for their nomophobia levels. The reasons stated here are only the inferences of the researcher. Therefore, future studies should gather more in-depth information through interviews.

To conclude, Study 2 has shown that state emotion dysregulation, state negative and positive affect, state boredom, and satisfaction with the social context ultimately drive young adults to engage in problematic engagement with the MP and increase the frequency of current nomophobic behaviors. In the light of the relevant literature and the findings of Study 2, it is possible to say that when current negative and positive emotions, positive and negative affect and boredom are intense, young adults may need the MP for distraction, suppression, avoidance, emotional support, and the need for socialization (Blalock et al., 2016; Colasante et al., 2020; Hoge et al., 2017; Kenny et al., 2016; Yang et al., 2020). They may also need the MP to access positive content (Stieger & Lewetz, 2018) and seek stimulation or arousal (Pielot et al., 2015) but also to control the increased arousal associated with positive emotions (Weiss, Gratz et al., 2015). Besides these, they may also need the MP to share their current intense negative and positive emotions, positive and negative affective experiences, and their satisfaction with the social context with others (Bayer, Ellison, Schoenebeck et al., 2016). However, sharing increases subsequent activities on the MP such as checking comments on the posts. That is, the increase in the need for the MP due to such motivations and the inability to use the MP at that moment can be considered as the factors that trigger state nomophobia.

It is also worth emphasizing that most studies have assessed nomophobia as a relatively permanent psychological construct. However, Study 2 has shown that nomophobia is also a dynamic construct that is affected by internal and external factors, and also by time. In addition, the findings emphasize that individuals are often very inconsistent across time and situations due to several internal and external factors. Therefore, their general tendencies may not always be valid explanations for patterns of how they feel and act in a particular time or situation (Nezlek, 2007). That is, trait-based assessments give some information about a person's general tendencies in certain areas (e.g. trait nomophobia in this dissertation) but these assessments ignore the potential for change over time and the impact of contextual factors (Fleeson, 2007; Tomko et al., 2014). Therefore, as revealed in this study, individuals' trait-based characteristics might sometimes not predict state nomophobia.

The findings of Study 2 highlight that future studies should use the ESM approach more to understand nomophobia more holistically and to develop efficient treatment modalities for nomophobia. Based on these findings, some further recommendations for the prevention and treatment of nomophobia were given in Chapter 5.

4. GENERAL DISCUSSION

Nomophobia is becoming a risky problem among the young population with its adverse academic, social and psychological consequences (Yildirim, 2014). Therefore, an enhanced understanding of the psychological mechanisms and situational factors associated with nomophobia would be beneficial for the young population. In this dissertation, the widely accepted and well-established uses and gratifications theory (UGT) (Blumler, 1979) and compensatory internet use theory (CIUT) (Kardefelt-Winther, 2014) were used to determine variables that might be associated with nomophobia. In addition, attention has been paid to ensure that the variables can be evaluated with standard measurement tools and are also suitable for momentary assessments. In the selection of the variables, attention has also been paid to the determination of the variables whose relationship with nomophobia was relatively less investigated in previous studies (e.g., loneliness, gender, and impulsivity). Moreover, the variables were chosen among traits that are less stable throughout life rather than more stable traits such as personality and attachment style (Bowlby, 1969; Rantanen et al., 2007). In this way, it was aimed to identify the individual characteristics that must be considered and changed for the prevention or treatment of nomophobia.

In the nomophobia literature, most studies have used cross-sectional designs to investigate nomophobia. Most researchers have focused on the correlates, consequences, and determinants of trait nomophobia, but state nomophobia is still underrepresented in studies. In the psychology literature, currently, there is a growing interest in models that acknowledged the importance of states while acknowledging the importance of traits (Funder, 1991). That is, approaches that take into account both trait and state measures have become an important focus of contemporary research (Nezlek, 2007). In this dissertation, the use of the experience sampling method (ESM) in combination with trait measures that evaluate similar constructs allowed comparison of state and trait measures to better explain patterns of discrepancy or concordance between them (Armey, 2012). To the best of the researcher knowledge, up to now, no study assessed state nomophobia and trait nomophobia in the same study. Moreover, no study assessed the within-person effects of state nomophobia and its relation to the Study 2 predictors, and trait nomophobia's relation to the Study 1 predictors within the same study. This dissertation has shown that nomophobia can

be evaluated as a dynamic construct that can be measured with momentary assessments, and trait nomophobia can provide information about the severity and pattern of state nomophobia. Therefore, the current findings may provide a scientific insight into the content of programs developed for the treatment and prevention of nomophobia, and a new perspective for future nomophobia studies.

In Study 1, the cross-sectional design was preferred because it is beneficial for investigating how individuals' trait-based characteristics are related to trait nomophobia. The trait approach is well-suited for assessing the overall structure of nomophobia, as data are collected from a large number of individuals with standard measurement tools. Therefore, it can be said that the generalizability and validity of the results are quite high (Stone et al., 1991).

In Study 2, the ESM approach was preferred because it is well-suited for assessing situational aspects of state nomophobia (Nett et al., 2011; Stone et al., 1991). This approach allowed assessing the between-person variability concerning individual differences in state nomophobia (trait assessments). It also allowed assessing the within-person variability with multiple assessments of how people experience nomophobia (state assessments) in daily life (Schwartz et al., 1999). More specifically, in Study 2, the random intercept and slope model allowed to explore the association of state nomophobia with trait and state level constructs (Nezlek, 2007). The growth curve model allowed exploring the structure of the average growth trajectory, the pattern of individual variation around average growth, and the relationship between individuals' initial nomophobia status and growth rates (Bryk & Raudenbush, 1987). This model also allowed exploring how within-person relationships between the day of the week and daily nomophobia changed as a function of trait nomophobia (Nezlek, 2007). Therefore, while the trait approach is quite important, the ESM approach may serve as a valuable complementary approach for evaluating nomophobia in real-life settings and may have greater potential explanatory power than trait models (Mackesy-Amiti & Donenberg, 2020; Nett et al., 2011).

Based on the findings of Study 1 and Study 2, two important inferences can be made. First, previous studies have revealed that the trait-state relationships are often weak (Brose et al., 2015; Kashdan & Nezlek, 2012). As an example, trait emotion dysregulation may not always provide accurate information about emotion dysregulation in daily life (Blalock et al., 2016; Daros et al., 2019). As also found in this dissertation, while the predictive power

of trait-based variables is significant on trait nomophobia (e.g. boredom proneness and trait nomophobia), they have no or little effect on its state counterpart (e.g. boredom proneness and state nomophobia). In other words, boredom proneness significantly predicted trait nomophobia, but not state nomophobia. However, state boredom significantly predicted state nomophobia. These findings suggest that despite being related, trait and state indicators of trait nomophobia and state nomophobia are not always interchangeable. That is, each resource has unique information that it can provide (Daros et al., 2020). These findings also emphasize the importance of investigating both state and trait aspects of research variables. Based on the findings of this dissertation, it is possible to recommend that trait assessment should not be used to make inferences about temporal relationships between research variables. However, as an exception to the trait-state relationship, the current findings indicate that trait nomophobia provides accurate information about state nomophobia.

Second, although UGT (Blumler, 1979) and CIUT (Kardefelt-Winther, 2014) were originally developed to explain the internet, digital technology and media use, they they can also be used to conceptualize and understand nomophobia (Durak, 2019). The relationship of these theories with nomophobia and the current findings can be summarized as follows.

To start with UGT, it is a mass communications theory and argues that media users are active and independent in the selection of media content (Blumler, 1979). Although the theory was developed to explain media and internet use, the UGT perspective has been generalized to explain the problematic MP use (Dhir et al., 2015; Elhai, Levine, et al., 2017; Park et al., 2013; Whiting & Williams, 2013). In general, UGT argues that the underlying motivations for technology use are instrumental motivation and habitual motivation (Blumler, 1979). These motivations refer that some users need technological devices for productivity and communication (Lukoff et al., 2018), but some users use technology habitually (Rubin, 2009; Rubin, 1984). UGT also argues that individuals use the MP for many uses and gratifications such as affection, psychological reassurance, mobility, immediate access, and entertainment (Leung & Wei, 2000). Considering the diagnostic criteria of nomophobia (Bragazzi & Puente, 2014), these underlying motivations and the gratifications obtained from the MP may increase the severity of nomophobia symptoms. For example, instrumental motivation may increase anxiety about a lack of network coverage. Habitual motivation may lead to checking the MP frequently to see messages or calls.

UGT also posits that individuals use digital technology to meet their cognitive, personal integrative and affective needs. That is, technological devices are used to enhance knowledge, entertainment and social interactions, and to escape from distress (Black & Bryant, 1995; Blumler, 1979; Elhai & Contractor, 2018; Elhai et al., 2019). As the MP provides mobility and constant access to entertaining content or information, it appears as an ideal tool to satisfy these needs (Deng et al., 2018). However, considering that these needs cannot be met immediately in the absence of an MP, users may feel discomfort because of their unmet needs. That is, these needs can lead to problematic use of the internet and media, as well as may cause nomophobia. Moreover, considering the dimensions of nomophobia "not being able to communicate, losing connectedness, not being able to access information, and giving up convenience" (Yildirim, 2014, p.72), it is possible to say that the UGT assumptions encompass and roughly correspond to the dimensions of nomophobia. For example, personal integrative needs roughly correspond to the losing connectedness and giving up convenience dimensions, cognitive needs roughly correspond to the not being able to access information dimension, and affective needs roughly correspond to the losing connectedness dimesion (Black & Bryant, 1995; Yildirim, 2014). Therefore, the UGT framework can be used to conceptualize nomophobia and explain the fear experienced by individuals when they cannot use the MP.

It is also possible to summarize the relationship of nomophobia with the study variables from the UGT framework. According to the findings of previous studies using the UGT framework, individuals use the MP habitually to control unpleasant emotions, cope with negative affective states and psychopathology, and alleviate boredom (Dhir et al., 2015; Elhai, Levine, et al., 2017; Grellhesl & Punyanunt-Carter, 2012; Leung & Wei, 2000; Park et al., 2013). In a similar vein, the present findings have shown that these psychological constructs lead to a constant desire to have an MP, namely nomophobia. Moreover, the theory posits that some individuals use digital technology with a desire to strengthen pleasant emotional experiences, and satisfy their personal integrative and affective needs (Black & Bryant, 1995; Blumler, 1979). Since the MP allows access to internet and media content, it provides an easy way to be entertained and to satisfy these gratifications and needs (Wan & Chiou, 2006; Zhou & Leung, 2012). However, the current findings have shown that positive affect may lead to nomophobia due to reasons such as a strong desire to share positive experiences (Gable et al., 2004). Therefore, the needs and gratifications explained in UGT may also contribute to the emergence of nomophobia. Lastly, UGT argues that the uses and

gratifications of the MP also differ depending on the current context. Considering the effect of the social context on nomophobia, it is possible to say that the desire to meet these gratifications and needs in any environment causes nomophobia. For example, MP use on buses or in restaurants is strongly associated with mobility and immediate access gratifications that are some of the strong gratifications sought in the MP (Leung & Wei, 2000), and is also associated with the dimensions of nomophobia (Yildirim, 2014).

In short, the assumptions of UGT and the current findings indicate that the MP facilitates needs satisfaction by maximizing mobility and availability, and individuals use the MP for many uses, gratifications and needs. Therefore, the absence of it may cause pathological anxiety and fear in some users. Although these needs and gratifications may lead to negative consequences, it may not be reasonable to try to reduce these needs of users. Instead, they should be encouraged to meet such needs in the real world rather than the virtual world or technological tools. For example, although the MP provides students with the opportunity of acquiring knowledge in a relatively easier way, students should be directed to meet their cognitive needs in libraries. Likewise, users should be encouraged to satisfy their personal integrative needs through face-to-face interactions or their affective needs through activities in the real world. In such ways, users can gain the awareness that the MP is not the only way to be satisfied, and the prevention and treatment of nomophobia can be permanent.

The second theory used in this dissertation to understand nomophobia and to identify the variables that can lead to nomophobia is CIUT (Kardefelt-Winther, 2014). CIUT can be seen as an extension of UGT (Elhai & Contractor, 2018), but puts more emphasis on psychopathology and coping when explaining problematic information and communication technology (ICT) use (Elhai et al., 2019). From this point of view, the explanations of the theory regarding the problematic use of ICT can be generalized to the MP, and thus to nomophobia. To explain, the nomophobes tend to use maladaptive coping strategies when confronted with difficulties (Bragazzi et al., 2019). Like other digital technologies, the MP can be considered as a maladaptive coping strategy (Kuss et al., 2018; Murdock, 2013), as it offers plenty of entertaining activities that potentially provide relief from psychological problems. Over time, the expectancy of relief may increase the likelihood that targeted use will become a habit (van Deursen et al., 2015). In this case, although the MP offers a short-term solution to psychological problems, it may exacerbate them in the long run (Kuss et al.,

2018; Murdock, 2013). As a result of this vicious circle, the relief provided by the MP may increase the probability of developing nomophobia (King et al., 2010; Yen et al., 2009).

Moreover, CIUT is grounded in the assumption that problematic ICT use is a compensatory process for coping with problems, unmet needs, and negative life circumstances (Elhai, Levine, et al., 2017; Kardefelt-Winther, 2014). In particular, CIUT posits that different motivations drive problematic use of ICT such as relieving psychopathological symptoms, reducing negative affect, and regulating emotions (Elhai et al., 2019). Besides, ICT can be used not only to cope with such difficulties but also cope with arousal associated with positive affective states (Weiss, Williams et al., 2015). Moreover, CIUT explains individuals' motivation to use digital technologies not only according to psychological problems but also according to contextual factors. That is, the theory argues that the lack of stimulation increases a motivation to use online applications to gain desired social stimulation (Kardefelt-Winther, 2014). Based on these assumptions, in this dissertation, nomophobia was expected to be associated with emotion dysregulation, negative and positive affect, boredom, psychopathological symptoms, and satisfaction with the social context. The current findings fit with CIUT in explaining how these variables ultimately drive young adults to engage in problematic engagement with the MP. That is, similar to problematic ICT use, nomophobia may be a consequence of MP use as a compensatory process for coping with psychological problems and unmet needs. Therefore, the CIUT perspective can be used to understand nomophobia and its associated psychological constructs.

To conclude, in the light of all these explanations, it is possible to say that overall results are compatible with the UGT (Blumler, 1979) and CIUT (Kardefelt-Winther, 2014) assumptions. Based on the ovearall findings, it is possible to say that psychopathological symptoms, negative affect, positive affect, boredom, and environmental conditions should be considered some of the main treatment targets in intervention and prevention programs designed for nomophobia. However, as explained in detail in the previous chapters, when the findings of Study 1 and Study 2 are evaluated together, the bilateral relations of the predictors with nomophobia may be due to different underlying motivations and needs such as a need for sharing, social connectedness, or arousal. However, in the light of the relevant literature, it is understood that the common motivation of MP use is coping. Based on the current findings, it is possible to assume that MP use as a maladaptive coping strategy may lead to the belief that difficulties cannot be handled without the MP, resulting in the

emergence of nomophobia symptoms. As this assumption emphasizes, university students should be taught adaptive coping strategies rather than using the MP as a tool for coping. Based on the assumptions of UGT (Blumler, 1979) and CIUT (Kardefelt-Winther, 2014), and the current findings, some further recommendations for the prevention and treatment of nomophobia were given in the following chapter. It is also worth emphasizing that psychological constructs (e.g. nomophobia) that are generally considered to be relatively permanent are also dynamic constructs that are affected by internal and external factors, and time. More importantly, to make inferences about the determinants that cause the dynamic psychological constructs, determinants should also be measured as dynamic constructs. Therefore, the psychological constructs that have been examined with the cross-sectional research design up to now should be reconsidered with the ESM approach. In this way, the current psychology literature can be strengthened.

5. CONCLUSIONS AND RECOMMENDATIONS

Currently, the treatment modalities for nomophobia are limited because the concept is relatively new. However, it was reported that cognitive-behavioral therapy, emotion-focused therapy, and mindfulness therapy were effective in reducing nomophobia symptoms (Davoudi et al., 2019). Muniraj (2014) also reported that psychoeducation about the antecedents, symptoms, and treatment of nomophobia was effective in reducing nomophobia symptoms.

More recently, Nasab et al. (2021) designed a therapy package for nomophobia and tested its effectiveness on second-grade high school students. The nomophobia therapy package consists of eight sessions and mainly focuses on the enhancement of self-esteem to reduce the severity of nomophobia. During the sessions, clients are informed about the effect of psychological vulnerability, maladaptive thoughts and cognitive distortions on self-esteem, and the effect of automatic negative thoughts about the absence of the MP. Clients are also trained in strategies to improve coping, self-presentation, emotional acceptance, and communication skills. They are also trained on how to overcome social isolation and how to stop thinking about phone loss. They have revealed that the therapy package is effective in reducing the severity of nomophobia by improving self-esteem, reducing the psychological and emotional attachment to the MP, and improving interpersonal communication skills.

Similarly, Ortega-Barón et al. (2021) designed a prevention program called the Safety.net program. The program aims to prevent several technology-related psychological problems which are cyberbullying, nomophobia, cyber grooming, cyber dating abuse, online sexting, problematic internet use, internet gaming disorder, and online gambling disorder. The prevention program consists of 16 sessions and four modules. It mainly focuses on changing inappropriate behaviors in the online world and the motivations that impact these behaviors. The program also aims to improve clients' coping skills and psychosocial skills. During the sessions, clients are trained on digital victimization, dysfunctional internet use, and functional technology use. According to the results, the program was effective in reducing the symptoms of nomophobia, cyber grooming, problematic internet use, and internet gaming disorder.

In addition to these treatment modalities, based on the findings of this dissertation, it is possible to make some implications. To start with, previous studies have shown that university students experience intense boredom in their free time (Larson & Richards, 1991; Shaw et al., 1996) and they participate in various activities in the virtual world to overcome boredom (Zhou & Leung, 2012). If university students engage in meaningful activities during their free time such as art events, they may not feel distressed due to the absence of a mobile phone (MP). Therefore, the enhancement of the free-time management skills should be a part of prevention programs designed for nomophobia (Wan & Chiou, 2006; Wang, 2018). From a clinical perspective, nomophobia interventions should focus on boredom (Conrod et al., 2008; Lammers et al., 2013). Nomophobia symptoms can be reduced by improving university students' skills to cope with boredom and increasing their internal motivation to participate in enjoyable social free time activities (Caldwell, 2004). In particular; behavioral activation, which aims at motivating participation in adaptive activities, might be beneficial in the treatment of nomophobia by eliminating the negative effect of boredom (Quigley & Dobson, 2017). Moreover, as mindfulness encourages a deep involvement in one's current experiences (Arpaci, Baloglu et al., 2017), mindfulness therapy techniques may decrease boredom. Thereby, the effect of boredom on nomophobia can be weakened.

Moreover, the current findings suggest that some young adults may perceive emotions as out of control or unmanageable. As a result of decreased emotion regulation (ER) skills, they become more dependent on the MP and exhibit more nomophobic behaviors. It may be beneficial to focus on how to recognize potential symptoms of emotion dysregulation and how to reduce maladaptive coping behaviors in intervention programs designed for nomophobia. Therefore, emotion dysregulation should be considered one of the main treatment targets (Mo et al., 2018). As mindfulness helps to achieve self-control over emotions (Creswell, 2017; Regan et al., 2020), mindfulness therapy techniques might be beneficial for nomophobia by eliminating problems in ER (Davoudi et al., 2019). Similarly, emotion-focused therapy techniques might be useful in the treatment of nomophobia, especially in individuals who have difficulty in ER and are high in positive or negative affectivity. Such individuals should be trained to accept their positive and negative emotional experiences instead of emotional avoidance with the help of an MP (Greenberg, 2004).

The present findings also suggest that psychopathological symptoms may predispose nomophobia. If pre-existing psychological disorders increase the likelihood of nomophobia, a holistic approach is needed for nomophobia-specific treatments, including the treatment of comorbid disorders. Therefore, appropriate screening and treatment for psychological disorders may prevent the occurrence of nomophobia symptoms. In particular, cognitive-behavioural therapy strengthens autonomy, and enables individuals to be independent and cope with their psychological problems effectively (King et al., 2010). With the help of cognitive-behavioural therapy techniques, individuals may develop effective coping skills with their symptoms instead of developing MP-dependent behaviors. In addition, it is necessary to implement recreational programs and training programs to protect the mental health of students. Especially young adults with depression, anxiety, and negative self-concept should be encouraged to participate in more enjoyable social activities with behavioral therapy techniques (Dimidjian et al., 2011). Moreover, psychiatric disorders appear before the age of 24 (Breslau et al., 2008; Kessler et al., 2005), and nomophobia is more common in the younger generation (Bragazzi & Puente, 2014; Durak, 2018; Gezgin, Cakir et al., 2018). Therefore, any preventive schedule for nomophobia should be implemented at the youngest possible age to minimize its negative effects on psychological well-being.

It is also important to mention that since the MP is an essential tool for young adults, total prohibition or strict restriction may not be the best policy to prevent the negative effects of MP use. Therefore, nomophobia-specific policies should include information and advice on non-problematic MP use, such as helping young adults to set limits for MP use (Tavakolizadeh et al., 2014). Furthermore, a policy is needed to set the minimum age limit for MP use. Health professionals and school counsellors should also educate parents about nomophobia. Moreover, considering the effects of nomophobia on academic achievement, MP restriction should be strictly enforced in schools (Bhattacharya et al., 2019). In addition, it can be recommended that Young's (1999) 12 steps prevention program for internet addiction can be used for the prevention of nomophobia. This program mainly aims to limit internet usage time and reduce the factors that cause problematic internet use. This program, when adapted to nomophobia, includes the following steps: shifting MP usage to opposite hours, using external stoppers (e.g. alarm clock), setting certain MP use goals, avoiding popular MP apps, using reminder cards to reduce MP usage, using a personal notebook for MP usage, joining support groups, and participating in family therapy (Oz, 2018). In addition

to these steps, it is recommended that users should be encouraged to use the MP only when necessary, to avoid using it while spending time with other people, to set a limited budget for MP bills (Muniraj, 2014), and to create phone-free zones (Hasmawati et al., 2020).

Lastly, it is important to add that the experience sampling method (ESM) is not common in academic studies and clinical practices in Turkey. It is expected that this dissertation will guide future studies. The use of the ESM approach in future research may provide new perspectives on psychological constructs that have been examined with standard measurement tools until now. This dissertation may also lead to an increase in ESM use in clinical practice. In particular, the use of ESM by psychotherapists may provide the opportunity to closely monitor the clients on issues such as compliance with the treatment, severity of symptoms in daily life, and the effect of treatment on daily life.

To clarify the points that future researchers should pay attention to, the limitations of this dissertation should be mentioned. First, data were collected from a public university. Second, in Study 2, the number of female participants was higher than the number of male participants. These may limit the generalizability of the findings. Third, since young age is associated with nomophobia (Bragazzi & Puente, 2014; Durak, 2018; Gezgin, Cakir et al., 2018) and university students' nomophobia levels are higher than working adults (Gurbuz & Ozkan, 2020), participants were selected among university students. Focusing on various age groups can be a beneficial direction for future research, as it can help to understand how nomophobia develops in different developmental periods. Fourth, as recommended (Berkel et al., 2017; BinDhim et al., 2015), the ESM data were collected with an MP application. It can be suggested to repeat the research findings with the paper-pencil data collection method. Fifth, the ESM approach can sometimes induce reactivity because the awareness of participants about their psychological and physical conditions may increase during data collection (Verhagen et al., 2016). For instance, repeated assessments of boredom can increase the intensity of boredom. Therefore, this fact should be considered when evaluating the results. Sixth, ESM data collection should be started on other days of the week, except Monday.

It should be particularly noted here that the Study 2 data collection process coincided with the coronavirus (Covid-19) pandemic. During the pandemic, individuals have used digital technologies more than ever before. In particular, to protect themselves from the virus, many individuals avoided physical contact with other people. Therefore, online

communication and phone-based communication were almost the only ways to maintain social relationships during the pandemic and fulfil work or school duties within social distancing rules (Arora et al., 2021). For such reasons, the MP use rate has increased rapidly (Watson, 2021). Especially in emergencies, the inability to use the MP has generated more fear and anxiety than usual (Caponnetto et al., 2021). In addition, due to online education in Turkey, for university students, not being able to use the MP was almost equal to not being able to access the education materials, potentially prompting a more intense fear of not being able to use the MP. On the one hand, the fact that people were usually at home during the pandemic. This can be considered as a factor that reduces nomophobia because it is easier to charge the MP and hear incoming messages or calls in a home environment. On the other hand, due to the increase in MP usage, students may have experienced the internet, call and message quota overfill problems. For this reason, they may have encountered the problem of losing communication with their friends and family. Given the increase in health problems, the problem of exceeding the quota is likely to cause more anxiety and fear than usual. In short, the impact of lockdown and concerns about the virus may have affected the nomophobia level of participants and the results of Study 2. Therefore, the effect of variables on nomophobia should be re-examined after the pandemic. In addition, longitudinal studies are needed to investigate the effects of the virus on nomophobia.

6. REFERENCES

Aalbers, G., McNally, R., Heeren, A., de Wit, S., & Fried, E. (2018). Social media and depression symptoms: A network perspective. *Journal of Experimental Psychology General, 8*. doi:10.1037/xge0000528

Abbasi, I., & Drouin, M. (2019). Neuroticism and Facebook addiction: How social media can affect mood? *The American Journal of Family Therapy, 47(4)*, 199-215. doi:10.1080/01926187.2019.1624223

Abdelhameed, A., & Abdel-Aziem, A. (2016). Exercise training and postural correction improve upper extremity symptoms among touchscreen smartphone users. *Hong Kong Physiotherapy Journal, 35*, 37-44. doi:10.1016/j.hkpj.2016.06.001

Abeele, M. V., Schouten, A. P., & Antheunis, M. L. (2016). Personal, editable, and always accessible: An affordance approach to the relationship between adolescents' mobile messaging behavior and their friendship quality. *Journal of Social and Personal Relationships, 34(6)*, 875-893. doi:10.1177/0265407516660636

Adalier, A., & Balkan, E. (2012). The relationship between internet addiction and psychological symptoms. *International Journal of Global Education, 1*, 42-49.

Adawi, M., Zerbetto, R., Re, T., Bisharat, B., Mahamid, M., Amital, H., . . . Bragazzi, N. L. (2019). Psychometric properties of the Brief symptom inventory in nomophobic subjects: Insights from preliminary confirmatory factor, exploratory factor, and clustering analyses in a sample of healthy Italian volunteers. *Psychology Research and Behavior Management, 12*, 145-154. doi:10.2147/PRBM.S173282

Adnan, M., & Gezgin, D. (2016). A modern phobia: Prevalence of nomophobia among college students. *Ankara University Journal of Faculty of Educational Sciences, 49*, 141-158.

Affleck, G., Tennen, H., Urrows, S., & Higgins, P. (1994). Person and contextual features of daily stress reactivity: Individual differences in relations of undesirable daily events with mood disturbance and chronic pain intensity. *Journal of Personality and Social Psychology, 66(2)*, 329-340. doi:10.1037//0022-3514.66.2.329

Aharony, N., Pan, W., Ip, C., Khayal, I., & Pentland, A. (2011). Social FMRI: Investigating and shaping social mechanisms in the real world. *Pervasive and Mobile Computing, 7(6)*, 643-659. doi:10.1016/j.pmcj.2011.09.004

Ahmed, S., Pokhrel, N., Roy, S., & Samuel, A. J. (2019). Impact of nomophobia: A nondrug addiction among students of physiotherapy course using an online cross-sectional survey. *Indian Journal of Psychiatry, 61*, 77-80.

Ahn, J., & Jung, Y. (2014). The common sense of dependence on smartphone: A comparison between digital natives and digital immigrants. *New Media & Society, 18(7),* 1236-1256. doi:10.1177/1461444814554902

Ak, N., & Yildirim, S. (2018). Nomophobia among undergraduate students: The case of a Turkish state university. *International Journal on New Trends in Education and Their Implications, 9*, 11-20.

Aker, S., Sahin, M. K., Sezgin, S., & Oguz, G. (2017). Psychosocial factors affecting smartphone addiction in university students. *Journal of Addictions Nursing, 28(4),* 215-219. doi: 10.1097/JAN.0000000000000197.

Akin, I. (2014). *Relationship of problematic internet use with alexithymia, emotion regulation, and impulsivity* [Master's thesis, Bahçeşehir University]. http://acikerisim.bahcesehir.edu.tr:8080/xmlui/bitstream/handle/123456789/371/FM-D5FA84AD-235C-4B8B-93AA4FA9C5F88C29.pdf?sequence=1&isAllowed=y

Al-Saggaf, Y., MacCulloch, R., & Wiener, K. (2019). Trait boredom is a predictor of phubbing frequency. *Journal of Technology in Behavioral Science, 4(3),* 245-252. doi:10.1007/s41347-018-0080-4

Alavi, S., Ghanizadeh, M., Farahani, M., Jannatifard, F., Alamuti, S., & Mohammadi, M. (2020). Addictive use of smartphones and mental disorders in university students. *Iranian Journal of Psychiatry, 15*, 96-104.

Aldao, A. (2013). The future of emotion regulation research: Capturing context. *Perspectives on Psychological Science, 8(2),* 155-172. doi:10.1177/1745691612459518

Amendola, S., Spensieri, V., Guidetti, V., & Cerutti, R. (2019). The relationship between difficulties in emotion regulation and dysfunctional technology use among adolescents. *Journal of Psychopathology, 25(1),* 10-17.

American Psychiatric Association Publishing. (2013). *Diagnostic and statistical manual of mental disorders (5th ed.).* https://dsm.psychiatryonline.org/doi/book/10.1176/appi.books.9780890425596

Amichai-Hamburger, Y., & Barak, A. (2009). Internet and well-being. In Y. Amichai-Hamburger (Ed.), *Technology and psychological well-being* (pp. 34-76). Cambridge University Press.

Anderson, C. A., Bushman, B. J., Bartholow, B. D., Cantor, J., Christakis, D., Coyne, S. M., . . . Ybarra, M. (2017). Screen violence and youth behavior. *Pediatrics, 140(2),* 142-147. doi:10.1542/peds.2016-1758T

Anderson, D. (2012). *Hierarchical linear modeling (HLM): An introduction to key concepts within cross-sectional and growth modeling frameworks.* Behavioral Research and Teaching. https://eric.ed.gov/?id=ED545279

Andreassen, C. S., Torsheim, T., & Pallesen, S. (2014). Predictors of use of social network sites at work-a specific type of cyberloafing. *Journal of Computer-Mediated Communication, 19(4),* 906-921. doi:10.1111/jcc4.12085

Andrews, S., Ellis, D. A., Shaw, H., & Piwek, L. (2015). Beyond self-report: Tools to compare estimated and real-world smartphone use. *PLoS One, 10(10),* e0139004. doi:10.1371/journal.pone.0139004

Anshari, M., Alas, Y., Hardaker, G., Jaidin, J., Smith, M., & Abdullah, A. D. (2016). Smartphone habit and behavior in Brunei: Personalization, gender, and generation gap. *Computers in Human Behavior, 64,* 719-727. doi:10.1016/j.chb.2016.07.063

Anshari, M., Alas, Y., & Sulaiman, E. (2019). Smartphone addictions and nomophobia among youth. *Vulnerable Children and Youth Studies, 14(3),* 242-247. doi:10.1080/17450128.2019.1614709

Armey, M. F. (2012). Ecological momentary assessment and intervention in nonsuicidal self-injury: A novel approach to treatment. *Journal of Cognitive Psychotherapy, 26(4),* 299-317. doi:10.1891/0889-8391.26.4.299

Arora, A., Chakraborty, P., & Bhatia, M. P. S. (2021). Problematic use of digital technologies and its impact on mental health during Covid-19 pandemic: Assessment using machine learning. *Emerging Technologies During the Era of COVID-19 Pandemic, 348,* 197-221. doi:10.1007/978-3-030-67716-9_13

Arpaci, I. (2017). Culture and nomophobia: The role of vertical versus horizontal collectivism in predicting nomophobia. *Information Development, 35,* 96-106. doi:10.1177/0266666917730119

Arpaci, I., Baloglu, M., Kozan, H., & Kesici, S. (2017). Individual differences in the relationship between attachment and nomophobia among college students: The mediating role of mindfulness. *Journal of Medical Internet Research, 19(12),* e404. doi:10.2196/jmir.8847

Arpaci, I., Baloglu, M., & Kesici, S. (2017). A multi-group analysis of the effects of individual differences in mindfulness on nomophobia. *Information Development, 35(2),* 333-341. doi:10.1177/0266666917745350

Arpaci, I., & Gundogan, S. (2020). Mediating role of psychological resilience in the relationship between mindfulness and nomophobia. *British Journal of Guidance & Counselling,* 1-9. doi:10.1080/03069885.2020.1856330

Ashby, F., Isen, A., & Turken, A. (1999). A neuropsychological theory of positive affect and its influence on cognition. *Psychological Review, 106*, 529-550.

Axelson, D. A., Bertocci, M. A., Lewin, D. S., Trubnick, L. S., Birmaher, B., Williamson, D. E., . . . Dahl, R. E. (2003). Measuring mood and complex behavior in natural environments: Use of ecological momentary assessment in pediatric affective disorders. *Journal of Child and Adolescent Psychopharmacology, 13(3)*, 253-266. doi:10.1089/104454603322572589

Ayar, D., Gerceker, G., Ozdemir, E., & Bektas, M. (2018). The effect of problematic internet use, social appearance anxiety, and social media use on nursing students' nomophobia levels. *Computers, Informatics, Nursing, 36*, 589-5595.

Babadi-Akashe, Z., Zamani, B. E., Abedini, Y., Akbari, H., & Hedayati, N. (2014). The relationship between mental health and addiction to mobile phones among university students of Shahrekord, Iran. *Addiction & Health, 6(3-4)*, 93-99.

Baddeley, J. L., Pennebaker, J. W., & Beevers, C. G. (2012). Everyday social behavior during a major depressive episode. *Social Psychological and Personality Science, 4(4)*, 445-452. doi:10.1177/1948550612461654

Bai, J., Mo, K., Peng, Y., Hao, W., Qu, Y., Lei, X., & Yang, Y. (2021). The relationship between the use of mobile social media and subjective well-being: The mediating effect of boredom proneness. *Frontiers in Psychology, 11(3824)*. doi:10.3389/fpsyg.2020.568492

Bailon, C., Damas, M., Pomares, H., Sanabria, D., Perakakis, P., Goicoechea, C., & Banos, O. (2019). Smartphone-based platform for affect monitoring through flexibly managed experience sampling methods. *Sensors, 19(15)*. doi:10.3390/s19153430

Baker, J. R., & Moore, S. M. (2008). Blogging as a social tool: A psychosocial examination of the effects of blogging. *Cyberpsychology & Behavior, 11(6)*, 747-749. doi:10.1089/cpb.2008.0053

Baker, T., Piper, M., McCarthy, D., Majeskie, M., & Flore, M. (2004). Addiction motivation reformulated: An affective processing model of negative reinforcement. *Psychological Review, 111*, 33-51.

Bareket-Bojmel, L., & Shahar, G. (2011). Emotional and interpersonal consequences of self-disclosure in a lived, online interaction. *Journal of Social and Clinical Psychology, 30(7)*, 732-759. doi:10.1521/jscp.2011.30.7.732

Barge-Schaapveld, D. Q., & Nicolson, N. A. (2002). Effects of antidepressant treatment on the quality of daily life: An experience sampling study. *Journal of Clinical Psychiatry, 63(6)*, 477-485. doi:10.4088/jcp.v63n0603

Barge-Schaapveld, D. Q., Nicolson, N. A., Berkhof, J., & deVries, M. W. (1999). Quality of life in depression: Daily life determinants and variability. *Psychiatry Research, 88(3)*, 173-189. doi:10.1016/s0165-1781(99)00081-5

Barge-Schaapveld, D. Q., Nicolson, N. A., van der Hoop, R. G., & De Vries, M. W. (1995). Changes in daily life experience associated with clinical improvement in depression. *Journal of Affective Disorders, 34(2)*, 139-154. doi:10.1016/0165-0327(95)00012-c

Barnett, L. (2011). Boredom. In R. Levesque (Ed.), *Encyclopedia of adolescence* (pp. 343-350). Springer.

Barnett, L. A., & Klitzing, S. W. (2006). Boredom in free time: Relationships with personality, affect, and motivation for different gender, racial and ethnic student groups. *Leisure Sciences, 28(3)*, 223-244. doi:10.1080/01490400600598053

Barrett, L. F. (1998). Discrete emotions or dimensions? The role of valence focus and arousal focus. *Cognition and Emotion, 12(4)*, 579-599. doi:10.1080/026999398379574

Bayer, J., Ellison, N., Schoenebeck, S., Brady, E., & Falk, E. (2016). Facebook in context(s): Measuring emotional responses across time and space. *New Media & Society, 20(3)*, 1047-1067. doi:10.1177/1461444816681522

Bayer, J., Ellison, N., Schoenebeck, S., & Falk, E. (2016). Sharing the small moments: Ephemeral social interaction on snapchat. *Information, Communication & Society, 19(7)*, 956-977. doi:10.1080/1369118X.2015.1084349

Bazarova, N., Choi, Y., Sosik, V., Cosley, D., & Whitlock, J. (2015). *Social sharing of emotions on Facebook: Channel differences, satisfaction, and replies*. 18th ACM Conference on Computer Supported Cooperative Work & Social Computing, Vancouver, BC, Canada. https://doi.org/10.1145/2675133.2675297

Beard, K. W., & Wolf, E. M. (2001). Modification in the proposed diagnostic criteria for internet addiction. *CyberPsychology & Behavior, 4(3)*, 377-383. doi:10.1089/109493101300210286

Beblo, T., Fernando, S., Klocke, S., Griepenstroh, J., Aschenbrenner, S., & Driessen, M. (2012). Increased suppression of negative and positive emotions in major depression. *Journal of Affective Disorders, 141(2-3)*, 474-479. doi:10.1016/j.jad.2012.03.019

Ben-Yehuda, L., Greenberg, L., & Weinstein, A. (2016). Internet addiction by using the smartphone-relationships between internet addiction, frequency of smartphone use and the state of mind of male and female students. *Journal of Reward Deficiency Syndrome & Addiction Science, 2(1)*, 22-27. doi:10.17756/jrdsas.2016-024

Ben-Zeev, D., Young, M. A., & Madsen, J. W. (2009). Retrospective recall of affect in clinically depressed individuals and controls. *Cognition and Emotion, 23(5)*, 1021-1040. doi:10.1080/02699930802607937

Beranuy, M., Oberst, U., Carbonell, X., & Chamarro, A. (2009). Problematic internet and mobile phone use and clinical symptoms in college students: The role of emotional intelligence. *Computers in Human Behavior, 25(5),* 1182-1187. doi:10.1016/j.chb.2009.03.001

Berger, M., Wagner, T. H., & Baker, L. C. (2005). Internet use and stigmatized illness. *Social Science & Medicine, 61(8),* 1821-1827.doi:10.1016/j.socscimed.2005.03.025

Berkel, N., Ferreira, D., & Kostakos, V. (2017). The experience sampling method on mobile devices. *ACM Computing Surveys, 50(6),* 93-133. doi:10.1145/3123988

Bernardini, J. (2018). Nomophobia: A research among Italian digital natives. *Journal for Social Media Inquiry, 1,* 1-10.

Berthelsen, D., Hayes, N., White, S., & Williams, K. E. (2017). Executive function in adolescence: Associations with child and family risk factors and self-regulation in early childhood. *Frontiers in Psychology, 8(903)*. doi:10.3389/fpsyg.2017.00903

Beyens, I., Pouwels, J. L., van Driel, I. I., Keijsers, L., & Valkenburg, P. M. (2020). The effect of social media on well-being differs from adolescent to adolescent. *Scientific Reports, 10(1),* 10763. doi:10.1038/s41598-020-67727-7

Bhat, S., Pinto-Zipp, G., Upadhyay, H., & Polos, P. G. (2018). "To sleep, perchance to tweet": In-bed electronic social media use and its associations with insomnia, daytime sleepiness, mood, and sleep duration in adults. *Sleep Health, 4(2),* 166-173. doi:10.1016/j.sleh.2017.12.004

Bhattacharya, S., Bashar, M., Srivastava, A., & Singh, A. (2019). Nomophobia: No mobile phone phobia. *Journal of Family Medicine and Primary Care, 8,* 1297-1300. doi:10.4103/jfmpc.jfmpc_71_19

Bian, M., & Leung, L. (2014). Linking loneliness, shyness, smartphone addiction symptoms, and patterns of smartphone use to social capital. *Social Science Computer Review, 33(1),* 61-79. doi:10.1177/0894439314528779

Bianchi, A., & Phillips, J. (2005). Psychological predictors of problem mobile phone use. *Cyberpsychology and Behavior, 8,* 39-52.

Biesanz, J., Deeb-Sossa, N., Papadakis, A., Bollen, K., & Curran, P. (2004). The role of coding time in estimating and interpreting growth curve models. *Psychological Methods, 9,* 30-52. doi:10.1037/1082-989X.9.1.30

Billieux, J. (2012). Problematic use of the mobile phone: A literature review and a pathways model. *Current Psychiatry Reviews, 8,* 299-307.

Billieux, J., Maurage, P., Fernandez, O., Kuss, D., & Griffiths, M. (2015). Can disordered mobile phone use be considered a behavioral addiction? An update on current

evidence and a comprehensive model for future research. *Current Addiction Report, 2*, 156–162.

Billieux, J., Philippot, P., Schmid, C., Maurage, P., Mol, J., & Linden, M. (2015). Is dysfunctional use of the mobile phone a behavioural addiction? Confronting symptom-based versus process-based approaches. *Clinical Psychology and Psychotherapy, 22*, 460-468.

Billieux, J., Thorens, G., Khazaal, Y., Zullino, D., Achab, S., & Van der Linden, M. (2015). Problematic involvement in online games: A cluster analytic approach. *Computers in Human Behavior, 43*, 242-250. doi:10.1016/j.chb.2014.10.055

Billieux, J., Van der Linden, M., d'Acremont, M., Ceschi, G., & Zermatten, A. (2007). Does impulsivity relate to perceived dependence on and actual use of the mobile phone?. *Applied Cognitive Psychology, 21(4)*, 527-537.

BinDhim, N. F., Shaman, A. M., Trevena, L., Basyouni, M. H., Pont, L. G., & Alhawassi, T. M. (2015). Depression screening via a smartphone app: Cross-country user characteristics and feasibility. *Journal of the American Medical Informatics Association, 22(1)*, 29-34. doi:10.1136/amiajnl-2014-002840

Biolcati, R., & Cani, D. (2015). Feeling alone among friends: Adolescence, social networks and loneliness. *Webology, 12(2)*.

Biolcati, R., Mancini, G., & Trombini, E. (2017). Proneness to boredom and risk behaviors during adolescents' free time. *Psychological Reports, 121(2)*, 303-323. doi:10.1177/0033294117724447

Błachnio, A., Przepiorka, A., & Czuczwar, S. J. (2017). Type D personality, stress coping strategies and self-efficacy as predictors of Facebook intrusion. *Psychiatry Research, 253*, 33-37. doi:10.1016/j.psychres.2017.03.022

Black, J., & Bryant, J. (1995). *Introduction to media communication*. McGraw-Hill Higher Education.

Blalock, D. V., Kashdan, T. B., & Farmer, A. S. (2016). Trait and daily emotion regulation in social anxiety disorder. *Cognitive Therapy and Research, 40(3)*, 416-425. doi:10.1007/s10608-015-9739-8

Blasi, M., Giardina, A., Giordano, C., Coco, G., Tosto, C., Billieux, J., & Schimmenti, A. (2019). Problematic video game use as an emotional coping strategy: Evidence from a sample of MMORPG gamers. *Journal of Behavioral Addictions, 8(1)*, 25-34. doi:10.1556/2006.8.2019.02

Bliese, P. D., & Ployhart, R. E. (2002). Growth modeling using random coefficient models: Model building, testing, and illustrations. *Organizational Research Methods, 5(4)*, 362-387. doi:10.1177/109442802237116

Blumler, J. G. (1979). The role of theory in uses and gratifications studies. *Communication Research, 6(1),* 9-36. doi:10.1177/009365027900600102

Bolger, N., Davis, A., & Rafaeli, E. (2003). Diary methods: Capturing life as it is lived. *Annual Review of Psychologyl, 54,* 579-616.

Boulet, J., & Boss, M. W. (1991). Reliability and validity of the Brief symptom inventory. *Psychological Assessment: A Journal of Consulting and Clinical Psychology, 3,* 433-437. doi:10.1037/1040-3590.3.3.433

Boumosleh, J., & Jaalouk, D. (2017). Depression, anxiety, and smartphone addiction in university students-a cross sectional study. *PLOS ONE, 12(8),* e0182239. doi:10.1371/journal.pone.0182239

Bowlby, J. (1969). *Attachment and loss volume 1: Attachment*. Basic Books.

Bowman, L. L., Levine, L. E., Waite, B. M., & Gendron, M. (2010). Can students really multitask? An experimental study of instant messaging while reading. *Computers & Education, 54(4),* 927-931. doi:10.1016/j.compedu.2009.09.024

Bozaci, I. (2020). The effect of boredom proneness on smartphone addiction and impulse purchasing: A field study with young consumers in Turkey. *The Journal of Asian Finance, Economics and Business, 7,* 509-517. doi:10.13106/jafeb.2020.vol7.no7.509

Bradburn, N. M., Rips, L. J., & Shevell, S. K. (1987). Answering autobiographical questions: The impact of memory and inference on surveys. *Science, 236(4798),* 157-161. doi:10.1126/science.3563494

Bragazzi, N., & Puente, G. (2014). A proposal for including nomophobia in the new DSM-V. *Psychology Research and Behavior Management, 7,* 155-160.

Bragazzi, N., Re, T., & Zerbetto, R. (2019). The relationship between nomophobia and maladaptive coping styles in a sample of Italian young adults: Insights and implications from a cross-sectional study. *JMIR Mental Health, 6(4),* e13154. doi:10.2196/13154

Brailovskaia, J., Teismann, T., & Margraf, J. (2020). Positive mental health mediates the relationship between Facebook addiction disorder and suicide-related outcomes: A longitudinal approach. *Cyberpsychology, Behavior, and Social Networking, 23(5),* 346-350. doi:10.1089/cyber.2019.0563

Brand, M., Young, K. S., Laier, C., Wölfling, K., & Potenza, M. N. (2016). Integrating psychological and neurobiological considerations regarding the development and maintenance of specific internet-use disorders: An interaction of person-affect-cognition-execution (I-PACE) model. *Neuroscience & Biobehavioral Reviews, 71,* 252-266. doi:10.1016/j.neubiorev.2016.08.033

Bratina, T. (2019). Mobile phones and social behaviour among millennials: Future teachers. *Journal of Elementary Education, 12*, 315-330. doi:10.18690/rei.12.4.315-330.2019

Breslau, J., Lane, M., Sampson, N., & Kessler, R. C. (2008). Mental disorders and subsequent educational attainment in a us national sample. *Journal of Psychiatric Research, 42(9)*, 708-716. doi:10.1016/j.jpsychires.2008.01.016

Brissett, D., & Snow, R. P. (1993). Boredom: Where the future isn't. *Symbolic Interaction, 16*, 237–256.

Brose, A., Voelkle, M. C., Lövdén, M., Lindenberger, U., & Schmiedek, F. (2015). Differences in the between-person and within-person structures of affect are a matter of degree. *European Journal of Personality, 29(1)*, 55-71. doi:10.1002/per.1961

Brown, B. A., Goodman, F. R., Disabato, D. J., Kashdan, T. B., Armeli, S., & Tennen, H. (2021). Does negative emotion differentiation influence how people choose to regulate their distress after stressful events? A four-year daily diary study. *Emotion*. doi:10.1037/emo0000969

Brown, L., & Kuss, D. J. (2020). Fear of missing out, mental wellbeing, and social connectedness: A seven-day social media abstinence trial. *International Journal of Environmental Research and Public Health, 17(12)*, 4566. doi:10.3390/ijerph17124566

Brown, L., Silvia, P. J., Myin-Germeys, I., & Kwapil, T. R. (2007). When the need to belong goes wrong: The expression of social anhedonia and social anxiety in daily life. *Psychological Science, 18(9)*, 778-782. doi:10.1111/j.1467-9280.2007.01978.x

Brown, T. (2006). *Confirmatory factor analysis for applied research*. The Guilford Press.

Bryk, A., & Raudenbush, S. (1987). Application of hierarchical linear models to assessing change. *Psychological Bulletin, 101*, 147-158. doi:10.1037/0033-2909.101.1.147

Bryk, A., & Raudenbush, S. (1992). *Hierarchical linear models: Applications and data analysis methods*. SAGE.

Buckner, J., Castille, C., & Sheets, T. (2012). The five factor model of personality and employees' excessive use of technology. *Computers in Human Behavior, 28(5)*, 1947-1953. doi:10.1016/j.chb.2012.05.014

Buctot, D. B., Kim, N., & Kim, S. H. (2020). The role of nomophobia and smartphone addiction in the lifestyle profiles of junior and senior high school students in the Philippines. *Social Sciences & Humanities Open, 2(1)*, 100035. doi:10.1016/j.ssaho.2020.100035

Budak, E., Taymur, I., Askin, R., Gungor, B., Demirci, H., Akgul, A., & Sahin, Z. (2015). Relationship between internet addiction, psychopathology and self-esteem among

university students. *The European Research Journal, 1(3),* 128-135. doi:10.18621/eurj.2015.1.3.128

Bui, M., & Kemp, E. (2013). E-tail emotion regulation: Examining online hedonic product purchases. *International Journal of Retail & Distribution Management, 41*. doi:10.1108/09590551311304338

Burke, M., Marlow, C., & Lento, M. (2010). *Social network activity and social well-being,* 28th International Conference on Human Factors in Computing Systems, Atlanta, Georgia, USA.

Butt, S., & Phillips, J. G. (2008). Personality and self reported mobile phone use. *Computers in Human Behavior, 24(2),* 346-360. doi:10.1016/j.chb.2007.01.019

Buyukcolpan, H. (2019). Nomophobia, attachment styles, depression and perceived social support among university students. [Master's thesis, Hacettepe University]. http://www.openaccess.hacettepe.edu.tr:8080/xmlui/handle/11655/5955

Caldwell, L. L. (2004). *Timewise: Taking charge of leisure time curriculum for middle school students*. ETR Associates.

Calpbinici, P., & Tas-Arslan, F. (2019). Virtual behaviors affecting adolescent mental health: The usage of internet and mobile phone and cyberbullying. *Journal of Child and Adolescent Psychiatric Nursing, 32(3),* 139-148.

Cameron, L. D., & Overall, N. C. (2018). Suppression and expression as distinct emotion-regulation processes in daily interactions: Longitudinal and meta-analyses. *Emotion, 18(4),* 465-480. doi:10.1037/emo0000334

Caplan, S. E. (2003). Preference for online social interaction: A theory of problematic internet use and psychosocial well-being. *Communication Research, 30(6),* 625-648. doi:10.1177/0093650203257842

Caplan, S. E., & High, A. C. (2011). Online social interaction, psychosocial well-being, and problematic internet use. In K. Young & C. de Abreu (Eds.), *Internet addiction: A handbook and guide to evaluation and treatment* (pp. 35-53). John Wiley & Sons.

Caponnetto, P., Inguscio, L., Valeri, S., Maglia, M., Polosa, R., Lai, C., & Mazzoni, G. (2021). Smartphone addiction across the lifetime during Italian lockdown for Covid-19. *Journal of Addictive Diseases*, 1-11. doi:10.1080/10550887.2021.1889751

Carbonell, X., Oberst, U., & Beranuy, M. (2013). The cell phone in the twenty-first century: A risk for addiction or a necessary tool? *In Principles of Addiction, 1,* 901-903.

Carl, J. R., Soskin, D. P., Kerns, C., & Barlow, D. H. (2013). Positive emotion regulation in emotional disorders: A theoretical review. *Clinical Psychology Review, 33(3),* 343-360. doi:10.1016/j.cpr.2013.01.003

Casale, S., Caplan, S. E., & Fioravanti, G. (2016). Positive metacognitions about internet use: The mediating role in the relationship between emotional dysregulation and problematic use. *Addictive Behaviors, 59*, 84-88. doi:10.1016/j.addbeh.2016.03.014

Catone, G., Senese, V. P., Pisano, S., Siciliano, M., Russo, K., Muratori, P., . . . Broome, M. R. (2020). The drawbacks of information and communication technologies: Interplay and psychopathological risk of nomophobia and cyber-bullying, results from the bullying and youth mental health Naples study. *Computers in Human Behavior, 113*, 106496. doi:10.1016/j.chb.2020.106496

Celik, H., & Aydogdu, B. (2018). Emotion-focused therapy: A new approach in psychotherapy. *E-Kafkas Journal of Educational Research, 5*, 50-68.

Celik, Y., & Atilla, G. (2018). Investigation of the relationship between the nomophobia, difficulties in emotion regulation and academic achievements of the university students: A study on Manavgat Vocational School. *International Journal of Social Humanities Sciences Research, 5*, 2628-2639.

Cerin, E., Szabo, A., & Williams, C. (2001). Is the experience sampling method (ESM) appropriate for studying pre-competitive emotions?. *Psychology of Sport and Exercise, 2(1)*, 27-45. doi:10.1016/S1469-0292(00)00009-1

Cerruti, R., Spensieri, V., Presaghi, F., Valastro, C., Fontana, A., & Guidetti, V. (2017). An exploratory study on internet addiction, somatic symptoms and emotional and behavioral functioning in school-aged adolescents. *Clinical Neuropsychiatry: Journal of Treatment Evaluation, 14(6)*, 374-383.

Cerutti, R., Manca, M., & Presaghi, F. (2006). Internet addiction disorder and psychiatric comorbidity. *Psichiatria e Psicoterapia, 25(2)*, 98-110.

Cerutti, R., Presaghi, F., Spensieri, V., Valastro, C., & Guidetti, V. (2016). The potential impact of internet and mobile use on headache and other somatic symptoms in adolescence. A population-based cross-sectional study. *Headache: The Journal of Head and Face Pain, 56(7)*, 1161-1170.

Chan, C., van Tilburg, W., Igou, E. R., Poon, C., Tam, K., Wong, V., & Cheung, S. (2018). Situational meaninglessness and state boredom: Cross-sectional and experience-sampling findings. *Motivation and Emotion, 42(4)*, 555-565. doi:10.1007/s11031-018-9693-3

Chauhan, N., & Jain, M. (2020). Mobile phone dependence and its relation with mood states among adolescents. *International Journal of Indian Psychology, 8*, 24-31. doi:10.25215/0803.004

Cheever, N. A., Rosen, L. D., Carrier, L. M., & Chavez, A. (2014). Out of sight is not out of mind: The impact of restricting wireless mobile device use on anxiety levels among

low, moderate and high users. *Computers in Human Behavior, 37*, 290-297. doi:10.1016/j.chb.2014.05.002

Chen, Q., & Yan, Z. (2016). Does multitasking with mobile phones affect learning? A review. *Computers in Human Behavior, 54*, 34-42.

Chethana K, Maria, N., & Manjula A. (2020). Prevalence of nomophobia and its association with loneliness, self happiness and self esteem among undergraduate medical students of a medical college in Coastal Karnataka. *Indian Journal of Public Health Research & Development, 11(3)*, 523-529. doi:10.37506/ijphrd.v11i3.1215

Chin, A., Markey, A., Bhargava, S., Kassam, K. S., & Loewenstein, G. (2017). Bored in the USA: Experience sampling and boredom in everyday life. *Emotion, 17(2)*, 359-368. doi:10.1037/emo0000232

Choliz, M. (2012). Mobile-phone addiction in adolescence: The test of mobile phone dependence. *Progress in Health Sciences, 2*, 33-44.

Choo, H., Gentile, D. A., Sim, T., Li, D., Khoo, A., & Liau, A. K. (2010). Pathological video-gaming among Singaporean youth. *Annals of the Academy of Medicine, 39(11)*, 822-829.

Chotpitayasunondh, V., & Douglas, K. M. (2018). The effects of "phubbing" on social interaction. *Journal of Applied Social Psychology, 48(6)*, 304-316.

Chou, W., Chang, Y., & Yen, C. (2018). Boredom proneness and its correlation with internet addiction and internet activities in adolescents with attention-deficit/hyperactivity disorder. *The Kaohsiung Journal of Medical Sciences, 34(8)*, 467-474.

Christensen, T. C., Barrett, L. F., Bliss-Moreau, E., Lebo, K., & Kaschub, C. (2003). A practical guide to experience-sampling procedures. *Journal of Happiness Studies, 4(1)*, 53-78. doi:10.1023/A:1023609306024

Christensen, T. C., Wood, J. V., & Barrett, L. F. (2003). Remembering everyday experience through the prism of self-esteem. *Personality and Social Psychology Bulletin, 29(1)*, 51-62. doi:10.1177/0146167202238371

Chung, J. E. (2014). Social networking in online support groups for health: How online social networking benefits patients. *Journal of Health Communication, 19(6)*, 639-659. doi:10.1080/10810730.2012.757396

Cisler, J. M., Olatunji, B. O., Feldner, M. T., & Forsyth, J. P. (2010). Emotion regulation and the anxiety disorders: An integrative review. *Journal of psychopathology and behavioral assessment, 32(1)*, 68-82. doi:10.1007/s10862-009-9161-1

Clayton, R., Leshner, G., & Almond, A. (2015). The extended iself: The impact of iphone separation on cognition, emotion, and physiology. *Journal of Computer-Mediated Communication, 20*, 119-135. doi:10.1111/jcc4.12109

Cobanoglu, A., Bahadir-Yilmaz, E., & Kiziltan, B. (2021). The relationship between nursing students' digital and smartphone addiction levels and nomophobia: A descriptive, correlational study. *Perspectives in Psychiatric Care*. doi:10.1111/ppc.12742

Cohen, A. A., & Lemish, D. (2003). Real time and recall measures of mobile phone use: Some methodological concerns and empirical applications. *New Media & Society, 5(2)*, 167-183. doi:10.1177/1461444803005002002

Cohen, J. (1988). *Statistical power analysis for the behavioural sciences.* Lawrence Earlbaum Associates.

Colasante, T., Lin, L., De France, K., & Hollenstein, T. (2020). Any time and place? Digital emotional support for digital natives. *American Psychologist*. doi:10.1037/amp0000708

Cole, P. (1998). Affective process in psychotherapy: A Gestalt therapist's view. *Gestalt Journal, 21*, 49-72.

Collins, N. L., & Read, S. J. (1990). Adult attachment, working models, and relationship quality in dating couples. *Journal of Personality and Social Psychology, 58(4)*, 644-663. doi:10.1037//0022-3514.58.4.644

Colombo, D., Fernández-Álvarez, J., Suso-Ribera, C., Cipresso, P., Valev, H., Leufkens, T., . . . Botella, C. (2020). The need for change: Understanding emotion regulation antecedents and consequences using ecological momentary assessment. *Emotion, 20(1)*, 30-36. doi:10.1037/emo0000671

Conger, A. (1974). A revised definition for suppressor variables: A guide to their identification and interpretation. *Educational and Psychological Measurement, 34(1)*, 35-46. doi:10.1177/001316447403400105

Conner, T. S., Barrett, L. F., Tugade, M. M., & Tennen, H. (2007). Idiographic personality: The theory and practice of experience sampling. In *Handbook of research methods in personality psychology* (pp. 79-96). The Guilford Press.

Conrod, P. J., Castellanos, N., & Mackie, C. (2008). Personality-targeted interventions delay the growth of adolescent drinking and binge drinking. *Journal of Child Psychology and Psychiatry, 49(2)*, 181-190. doi:10.1111/j.1469-7610.2007.01826.x

Consolvo, S., & Walker, M. (2003). Using the experience sampling method to evaluate ubicomp applications. *Pervasive Computing, IEEE, 2*, 24-31. doi:10.1109/MPRV.2003.1203750

Contractor, A. A., Frankfurt, S. B., Weiss, N. H., & Elhai, J. D. (2017). Latent-level relations between DSM-5 PTSD symptom clusters and problematic smartphone use. *Computers in Human Behavior, 72,* 170-177. doi:10.1016/j.chb.2017.02.051

Contractor, A. A., Weiss, N. H., Tull, M. T., & Elhai, J. D. (2017). PTSD's relation with problematic smartphone use: Mediating role of impulsivity. *Computers in Human Behavior, 75,* 177-183.

Cook, R. D., & Weisberg, S. (1982). *Residuals and influence in regression*. Chapman and Hall.

Creswell, J. D. (2017). Mindfulness interventions. *Annual Review of Psychology, 68,* 491–516. doi:10.1007/s11469-017-9787-2.

Crispim, A., Cruz, R., Baasch, R., Amorim, L., Trevisan, R., & Silva, M. (2015). Measurement of affect: From theoretical and instrumental perspectives. *Psychology Research, 5,* 96-107.

Cronkite, R. C., Moos, R. H., Twohey, J., Cohen, C., & Swindle, R. (1998). Life circumstances and personal resources as predictors of the ten-year course of depression. *American Journal of Community Psychology, 26(2),* 255-280. doi:10.1023/A:1022180603266

Cropanzano, R., Weiss, H., Hale, J., & Reb, J. (2003). The structure of affect: Reconsidering the relationship between negative and positive affectivity. *Journal of Management, 29,* 831-857.

Csikszentmihalyi, M., & Hunter, J. (2003). Happiness in everyday life: The uses of experience sampling. *Journal of Happiness Studies, 4(2),* 185-199. doi:10.1023/A:1024409732742

Csikszentmihalyi, M., & Larson, R. (1987). Validity and reliability of the experience-sampling method. *Journal of Nervous & Mental Disease, 175(9),* 526-536. doi:10.1097/00005053-198709000-00004

Csikszentmihalyi, M., Larson, R., & Prescott, S. (1977). The ecology of adolescent activity and experience. *Journal of Youth and Adolescence, 6(3),* 281-294. doi:10.1007/bf02138940

Csikszentmihalyi, M., & Schneider, B. (2001). Conditions for optimal development in adolescence: An experiential approach. *Applied Developmental Science, 5(3),* 122-124. doi:10.1207/S1532480XADS0503_1

Cummins, L. F., Nadorff, M. R., & Kelly, A. E. (2009). Winning and positive affect can lead to reckless gambling. *Psychology of Addictive Behaviors, 23(2),* 287-294. doi:10.1037/a0014783

Cunningham, J. B., & McCrum-Gardner, E. (2007). Power, effect and sample size using Gpower: Practical issues for researchers and members of research ethics committees. *Evidence Based Midwifery, 5*, 132-136.

Cyders, M. A., Flory, K., Rainer, S., & Smith, G. T. (2009). The role of personality dispositions to risky behavior in predicting first-year college drinking. *Addiction, 104(2)*, 193-202. doi:10.1111/j.1360-0443.2008.02434.x

Cyders, M. A., & Smith, G. T. (2007). Mood-based rash action and its components: Positive and negative urgency. *Personality and Individual Differences, 43(4)*, 839-850.

Cyders, M. A., & Smith, G. T. (2008a). Clarifying the role of personality dispositions in risk for increased gambling behavior. *Personality and Individual Differences, 45(6)*, 503-508. doi:10.1016/j.paid.2008.06.002

Cyders, M. A., & Smith, G. T. (2008b). Emotion-based dispositions to rash action: Positive and negative urgency. *Psychological Bulletin, 134(6)*, 807-828. doi:10.1037/a0013341

Daei. A, Ashrafi-rizi, H., & Soleymani, M. (2019). Nomophobia and health hazards: Smartphone use and addiction among university students. *International Journal of Preventive Medicine, 10*. doi:10.4103/ijpvm.IJPVM_184_19

Dahlen, E., Martin, R., Ragan, K., & Kuhlman, M. (2004). Boredom proneness in anger and aggression: Effects of impulsiveness and sensation seeking. *Personality and Individual Differences, 37*, 1615-1627.

Dalbudak, E., Evren, C., Topcu, M., Aldemir, S., Coskun, K. S., Bozkurt, M., . . . Canbal, M. (2013). Relationship of internet addiction with impulsivity and severity of psychopathology among Turkish university students. *Psychiatry Research, 210(3)*, 1086-1091.

Dalbudak, I., Yilmaz, T., & Yigit, S. (2020). Nomophobia levels and personalities of university students. *Journal of Education and Learning, 9*, 166-177. doi:10.5539/jel.v9n2p166

Daniels, L. M., Tze, V. M. C., & Goetz, T. (2015). Examining boredom: Different causes for different coping profiles. *Learning and Individual Differences, 37*, 255-261. doi:10.1016/j.lindif.2014.11.004

Daros, A. R., Daniel, K. E., Boukhechba, M., Chow, P. I., Barnes, L. E., & Teachman, B. A. (2020). Relationships between trait emotion dysregulation and emotional experiences in daily life: An experience sampling study. *Cognition and Emotion, 34(4)*, 743-755. doi:10.1080/02699931.2019.1681364

Daros, A. R., Daniel, K. E., Meyer, M. J., Chow, P. I., Barnes, L. E., & Teachman, B. A. (2019). Impact of social anxiety and social context on college students' emotion

regulation strategy use: An experience sampling study. *Motivation and Emotion, 43(5)*, 844-855. doi:10.1007/s11031-019-09773-x

Darvishi, M., Noori, M., Nazer, M. R., Sheikholeslami, S., & Karimi, E. (2019). Investigating different dimensions of nomophobia among medical students: A cross-sectional study. *Open Access Macedonian Journal of Medical Sciences, 7(4)*, 573-578. doi:10.3889/oamjms.2019.138

David, M., & Roberts, J. (2017). Phubbed and alone: Phone snubbing, social exclusion, and attachment to social media. *Journal of the Association for Consumer Research*, 155_163. doi:10.1086/690940

Davoudi, R., Manshaee, G., & Golparvar, M. (2019). Comparing the effectiveness of adolescent-centered mindfulness with cognitive behavioral therapy and emotion-focused therapy on emotion regulation among adolescents girl with nomo-phobia. *Journal of Health Promotion Management, 8(4)*, 16-25.

de Beurs, E., Lange, A., & Van Dyck, R. (1992). Self-monitoring of panic attacks and retrospective estimates of panic: Discordant findings. *Behaviour Research and Therapy, 30(4)*, 411-413. doi:10.1016/0005-7967(92)90054-k

de Veld, D. M., Riksen-Walraven, J. M., & de Weerth, C. (2012). The relation between emotion regulation strategies and physiological stress responses in middle childhood. *Psychoneuroendocrinology, 37(8)*, 1309-1319. doi:10.1016/j.psyneuen.2012.01.004

De-Sola, J., Talledo, H., Rubio, G., & de Fonseca, F. R. (2017). Development of a mobile phone addiction craving scale and its validation in a Spanish adult population. *Frontiers in Psychiatry, 8(90)*. doi:10.3389/fpsyt.2017.00090

Delavarpour, M., Bahar, M., & Ghods, F. (2019). Predicting nomophobia according to mood status and anxiety sensitivity: Analyzing the moderating role of gender. *Journal of Clinical Psychology, 11(2)*, 52-66. doi:10.22075/jcp.2019.18281.1707

Delespaul, P., deVries, M., & van Os, J. (2002). Determinants of occurrence and recovery from hallucinations in daily life. *Social Psychiatry and Psychiatric Epidemiology, 37(3)*, 97-104. doi:10.1007/s001270200000

Deleuze, J., Maurage, P., Schimmenti, A., Nuyens, F., Melzer, A., & Billieux, J. (2019). Escaping reality through videogames is linked to an implicit preference for virtual over real-life stimuli. *Journal of Affective Disorders, 245*, 1024-1031. doi:10.1016/j.jad.2018.11.078

Demirci, K., Akgonul, M., & Akpinar, A. (2015). Relationship of smartphone use severity with sleep quality, depression, and anxiety in university students. *Journal of Behavioral Addictions, 4(2)*, 85-92. doi:10.1556/2006.4.2015.010

Deng, T., Kanthawala, S., Meng, J., Peng, W., Kononova, A., Hao, Q., . . . David, P. (2018). Measuring smartphone usage and task switching with log tracking and self-reports. *Mobile Media & Communication, 7(1),* 3-23. doi:10.1177/2050157918761491

Derogatis, L. (1992). *The Brief symptom inventory (BSI): Administration, scoring & procedures manual-II*. Clinical Psychometric Research.

Derogatis, L., & Melisaratos, N. (1983). The Brief symptom inventory: An introductory report. *Psychological Medicine, 13(3),* 595-605.

Deryakulu, D., & Ursavas, O. (2019). Genetic and environmental sources of nomophobia: A small-scale Turkish twin study. *Addicta: The Turkish Journal on Addictions, 6,* 147–162. doi:10.15805/addicta.2019.6.1.0028

Dewey, T. (2016). Classifying nomophobia as smart-phone addiction disorder. *UC Merced Undergraduate Research Journal, 9,* 1-22.

Dey, M., Studer, J., Schaub, M. P., Gmel, G., Ebert, D. D., Lee, J. Y., & Haug, S. (2019). Problematic smartphone use in young Swiss men: Its association with problematic substance use and risk factors derived from the pathway model. *Journal of Behavioral Addictions, 8(2),* 326-334. doi:10.1556/2006.8.2019.17

Dhir, A., Chen, S., & Nieminen, M. (2015). Predicting adolescent internet addiction: The roles of demographics, technology accessibility, unwillingness to communicate and sought internet gratifications. *Computers in Human Behavior, 51,* 24-33. doi:10.1016/j.chb.2015.04.056

Diener, E., Larsen, R. J., & Emmons, R. A. (1984). Person x situation interactions: Choice of situations and congruence response models. *Journal of Personality and Social Psychology, 47(3),* 580-592. doi:10.1037//0022-3514.47.3.580

Diggle, P. J. (1988). An approach to the analysis of repeated measurements. *Biometrics, 44(4),* 959-971. doi:10.2307/2531727

Dijkman-Caes, C. I., de Vries, M. W., Kraan, H. F., & Volovics, A. (1993). Agoraphobic behavior in daily life: Effects of social roles and demographic characteristics. *Psychological Reports, 72,* 1283-1293. doi:10.2466/pr0.1993.72.3c.1283

Dimidjian, S., Barrera, M., Martell, C., Muñoz, R. F., & Lewinsohn, P. M. (2011). The origins and current status of behavioral activation treatments for depression. *Annual Review of Clinical Psychology, 7(1),* 1-38. doi:10.1146/annurev-clinpsy-032210-104535

Dixit, S., Shukla, H., Bhagwat, A., Bindal, A., Goyal, A., Zaidi, A. K., & Shrivastava, A. (2010). A study to evaluate mobile phone dependence among students of a medical college and associated hospital of Central India. *Indian Journal of Community*

Medicine: Official Publication of Indian Association of Preventive & Social Medicine, 35(2), 339-341. doi:10.4103/0970-0218.66878

Do, T., Blom, J., & Gatica-Perez, D. (2011). *Smartphone usage in the wild: A large-scale analysis of applications and context.* 2011 ACM International Conference on Multimodal Interaction, Alicante, Spain.

Dockray, S., Grant, N., Stone, A. A., Kahneman, D., Wardle, J., & Steptoe, A. (2010). A comparison of affect ratings obtained with ecological momentary assessment and the day reconstruction method. *Social Indicators Research, 99(2),* 269-283. doi:10.1007/s11205-010-9578-7

Dohoo, I. R., Ducrot, C., Fourichon, C., Donald, A., & Hurnik, D. (1997). An overview of techniques for dealing with large numbers of independent variables in epidemiologic studies. *Preventive Veterinary Medicine, 29(3),* 221-239.

Donahue, J. J., Goranson, A. C., McClure, K. S., & Van Male, L. M. (2014). Emotion dysregulation, negative affect, and aggression: A moderated, multiple mediator analysis. *Personality and Individual Differences, 70,* 23-28. doi:10.1016/j.paid.2014.06.009

Donald, J. N., Ciarrochi, J., Parker, P. D., & Sahdra, B. K. (2019). Compulsive internet use and the development of self-esteem and hope: A four-year longitudinal study. *Journal of Personality, 87(5),* 981-995. doi:10.1111/jopy.12450

Donald, J. N., Ciarrochi, J., & Sahdra, B. K. (2020). The consequences of compulsion: A 4-year longitudinal study of compulsive internet use and emotion regulation difficulties. *Emotion*. doi:10.1037/emo0000769

Dong, G., Lu, Q., Zhou, H., & Zhao, X. (2011). Precursor or sequela: Pathological disorders in people with internet addiction disorder. *PLOS ONE, 6(2),* e14703-e14703. doi:10.1371/journal.pone.0014703

Dora, J., van Hooff, M., Geurts, S., Kompier, M., & Bijleveld, E. (2020). Fatigue, boredom, and objectively-measured smartphone use at work. *Royal Society Open Science, 8,* 201915. doi:10.31234/osf.io/uy8rs

Dossey, L. (2013). FoMO, digital dementia, and our dangerous experiment. *EXPLORE The Journal of Science and Healing, 10,* 69-73.

Douglas, A. C., Mills, J. E., Niang, M., Stepchenkova, S., Byun, S., Ruffini, C., . . . Blanton, M. (2008). Internet addiction: Meta-synthesis of qualitative research for the decade 1996–2006. *Computers in Human Behavior, 24(6),* 3027-3044.

Drach, R. D., Orloff, N. C., & Hormes, J. M. (2021). The emotion regulatory function of online social networking: Preliminary experimental evidence. *Addictive Behaviors, 112,* 106559. doi:10.1016/j.addbeh.2020.106559

Dunkler, D., Plischke, M., Leffondré, K., & Heinze, G. (2014). Augmented backward elimination: A pragmatic and purposeful way to develop statistical models. *PLOS ONE, 9(11),* e113677. doi:10.1371/journal.pone.0113677

Durak, H. (2018). What would you do without your smartphone? Adolescents' social media usage, locus of control, and loneliness as a predictor of nomophobia. *Addicta, 5,* 1-15. doi:10.15805/addicta.2018.5.2.0025

Durak, H. (2019). Investigation of nomophobia and smartphone addiction predictors among adolescents in Turkey: Demographic variables and academic performance. *The Social Science Journal, 56(4),* 492-517. doi:10.1016/j.soscij.2018.09.003

Dwyer, R. J., Kushlev, K., & Dunn, E. W. (2018). Smartphone use undermines enjoyment of face-to-face social interactions. *Journal of Experimental Social Psychology, 78,* 233-239. doi:10.1016/j.jesp.2017.10.007

Eastwood, J., Frischen, A., Fenske, M., & Smilek, D. (2012). The unengaged mind: Defining boredom in terms of attention. *Perspectives in Psychological Science, 7,* 482-495.

Ebner-Priemer, U. W., & Trull, T. J. (2009). Ecological momentary assessment of mood disorders and mood dysregulation. *Psychological Assessment, 21(4),* 463-475. doi:10.1037/a0017075

Eginli, A., & Tas, N. (2019). Increasing of interpersonal communication and no mobile phone phobia (nomophobia) in the digital world. In E. Dogan & N. Oze (Eds.), *Debates on Media and Communication Studies* (pp. 93-107).

Ekman, P. (1984). Expression and the nature of emotion. In K. Scherer & P. Ekman (Eds.), *Approaches to emotion* (pp. 319-343). Psychology Press.

Elhai, J. D., Levine, J. C., Dvorak, R. D., & Hall, B. J. (2016). Fear of missing out, need for touch, anxiety and depression are related to problematic smartphone use. *Computers in Human Behavior, 63,* 509-516.

Elhai, J. D., & Contractor, A. A. (2018). Examining latent classes of smartphone users: Relations with psychopathology and problematic smartphone use. *Computers in Human Behavior, 82,* 159-166.

Elhai, J. D., Dvorak, R. D., Levine, J. C., & Hall, B. J. (2017). Problematic smartphone use: A conceptual overview and systematic review of relations with anxiety and depression psychopathology. *Journal of Affective Disorders, 207,* 251-259. doi:10.1016/j.jad.2016.08.030

Elhai, J. D., Levine, J. C., Dvorak, R. D., & Hall, B. J. (2017). Non-social features of smartphone use are most related to depression, anxiety and problematic smartphone use. *Computers in Human Behavior, 69,* 75-82. doi:10.1016/j.chb.2016.12.023

Elhai, J. D., Levine, J. C., & Hall, B. J. (2019). The relationship between anxiety symptom severity and problematic smartphone use: A review of the literature and conceptual frameworks. *Journal of Anxiety Disorders, 62,* 45-52. doi:10.1016/j.janxdis.2018.11.005

Elhai, J. D., Rozgonjuk, D., Liu, T., & Yang, H. (2020). Fear of missing out predicts repeated measurements of greater negative affect using experience sampling methodology. *Journal of Affective Disorders, 262,* 298-303. doi:10.1016/j.jad.2019.11.026

Elhai, J. D., Tiamiyu, M. F., Weeks, J. W., Levine, J. C., Picard, K. J., & Hall, B. J. (2018). Depression and emotion regulation predict objective smartphone use measured over one week. *Personality and Individual Differences, 133,* 21-28. doi:10.1016/j.paid.2017.04.051

Elhai, J. D., Vasquez, J. K., Lustgarten, S. D., Levine, J. C., & Hall, B. J. (2017). Proneness to boredom mediates relationships between problematic smartphone use with depression and anxiety severity. *Social Science Computer Review, 36(6),* 707-720. doi:10.1177/0894439317741087

Ellingson, R., & Oken, B. (2011). *Ambulatory physiologic monitoring system supporting ema with self-administered visual evoked potential recording at randomized intervals.* EEE International Instrumentation and Measurement Technology Conference, Binjiang.

Ellis, D. (2019). Are smartphones really that bad? Improving the psychological measurement of technology-related behaviors. *Computers in Human Behavior, 97,* 60-66. doi:10.1016/j.chb.2019.03.006

Ellison, N., Steinfield, C., & Lampe, C. (2007). The benefits of facebook ‘‘friends’’: Social capital and college students’ use of online social network sites. *Journal of Computer-Mediated Communication, 12,* 1143–1168.

Elpidorou, A. (2014). The bright side of boredom. *Frontiers in Psychology, 5(1245).* doi:10.3389/fpsyg.2014.01245

Emelin, V., Rasskazova, E., & Tkhostov, A. (2017). Technology-related transformations of imaginary body boundaries: Psychopathology of the everyday excessive internet and mobile phone use. *Psychology in Russia: State of the Art, 10(3),* 177-189.

Endler, N. S., & Parker, J. D. (1990). Multidimensional assessment of coping: A critical evaluation. *Journal of Personality and Social Psychology, 58(5),* 844-854. doi:10.1037//0022-3514.58.5.844

Engel, S., Wonderlich, S., Crosby, R., Wright, T., Mitchell, J., Crow, S., & Venegoni, E. (2005). A study of patients with anorexia nervosa using ecologic momentary assessment. *International Journal of Eating Disorders, 38(4),* 335-339. doi:10.1002/eat.20184

English, T., Lee, I. A., John, O. P., & Gross, J. J. (2017). Emotion regulation strategy selection in daily life: The role of social context and goals. *Motivation and Emotion, 41(2),* 230-242. doi:10.1007/s11031-016-9597-z

Ercengiz, M., Yildiz, B., Savci, M., & Griffiths, M. D. (2020). Differentiation of self, emotion management skills, and nomophobia among smartphone users: The mediating and moderating roles of intolerance of uncertainty. *The Social Science Journal,* 1-15. doi:10.1080/03623319.2020.1833148

Erdem, H., Turen, U., & Kalkin, G. (2017). No mobile phone phobia (nomophobia) prevalence: Samples of undergraduate students and public employees from Turkey. *Journal of Information Technologies, 10*. doi:10.17671/btd.30223

Erdem, H., & Ercil, Y. (2017). Could nomophobia (no mobile phone phobia) be one of the causes of role overload perception? *Journal of Management and Labour, 1*, 16-30.

Ergun, N., Goksu, I., & Sakiz, H. (2019). Effects of phubbing: Relationships with psychodemographic variables. *Psychological Reports, 123(5),* 1578-1613. doi:10.1177/0033294119889581

Esman, A. H. (1979). Some reflections on boredom. *Journal of the American Psychoanalytic Association, 27(2),* 423-439. doi:10.1177/000306517902700208

Estévez, A., Jáuregui, P., Sánchez-Marcos, I., López-González, H., & Griffiths, M. D. (2017). Attachment and emotion regulation in substance addictions and behavioral addictions. *The Journal of Behavioral Addictions, 6(4),* 534-544. doi:10.1556/2006.6.2017.086

Ettner, S. L., Frank, R. G., & Kessler, R. C. (1997). The impact of psychiatric disorders on labor market outcomes. *Industrial and Labor Relations Review, 51(1),* 64-81. doi:10.1177/001979399705100105

Evren, C., Evren, B., Dalbudak, E., Topcu, M., & Kutlu, N. (2019). Relationships of internet addiction and internet gaming disorder symptom severities with probable attention deficit/hyperactivity disorder, aggression and negative affect among university students. *ADHD Attention Deficit and Hyperactivity Disorders, 11(4),* 413-421. doi:10.1007/s12402-019-00305-8

Faelens, L., Hoorelbeke, K., Soenens, B., Van Gaeveren, K., De Marez, L., De Raedt, R., & Koster, E. H. W. (2021). Social media use and well-being: A prospective experience-sampling study. *Computers in Human Behavior, 114,* 106510.

Fahlman, S. A., Mercer-Lynn, K. B., Flora, D. B., & Eastwood, J. D. (2011). Development and validation of the multidimensional state boredom scale. *Assessment, 20(1),* 68-85. doi:10.1177/1073191111421303

Fahrenberg, J., Myrtek, M., Pawlik, K., & Perrez, M. (2007). Ambulatory assessment monitoring behavior in daily life settings: A behavioral-scientific challenge for psychology. *European Journal of Psychological Assessment, 23(4)*, 206-213. doi:10.1027/1015-5759.23.4.206

Farahani, M., Alavi, S. S., Mirzamani Bafghi, M., Esmaili Alamuti, S., Taghavi, Z., & Mohammadi, M. (2018). Psychological factors including demographic features, mental illnesses, and personality disorders as predictors in internet addiction disorder. *Iranian Journal of Psychiatry, 13(2)*, 103-110.

Farmer, R., & Sundberg, N. (1986). Boredom proneness-the development and correlates of a new scale. *Journal of Personality Assessment, 50*, 4-17.

Farooqui, I., Pore, P., & Gothankar, J. (2018). Nomophobia: An emerging issue in medical institutions? *Journal of Mental Health, 27(5)*, 438-441. doi:10.1080/09638237.2017.1417564

Ferreira, D., Goncalves, J., Kostakos, V., Barkhuus, L., & Dey, A. (2014). *Contextual experience sampling of mobile application micro-usage*. 16th international conference on Human-computer interaction with mobile devices & services, Toronto, Canada.

Field, A. (2013). *Discovering statistics using IBM SPSS statistics* (4th ed.). SAGE.

Firat, S., Gul, H., Sertcelik, M., Gul, A., Gurel, Y., & Kilic, B. G. (2018). The relationship between problematic smartphone use and psychiatric symptoms among adolescents who applied to psychiatry clinics. *Psychiatry Research, 270*, 97-103. doi:10.1016/j.psychres.2018.09.015

Fisher, C. (1993). Boredom at work: A neglected concept. *Human Relations, 46*, 395-417.

Fisher, C. (2000). Mood and emotions while working: Missing pieces of job satisfaction? *Journal of Organizational Behavior, 21(2)*, 185-202.

Fitzgerald, L., Drennan, J., & Bennett, R. (2005). *Mobile phone consumption and implications for SMS marketing.* European Marketing Academy Conference, Milan, Italy.

Fleeson, W. (2007). Situation-based contingencies underlying trait-content manifestation in behavior. *Journal of Personality, 75(4)*, 825-861. doi:10.1111/j.1467-6494.2007.00458.x

Flight, R. L., Rountree, M. M., & Beatty, S. E. (2012). Feeling the urge: Affect in impulsive and compulsive buying. *Journal of Marketing Theory and Practice, 20(4)*, 453-466. doi:10.2753/MTP1069-6679200407

Flores, P. (2004). *Addiction as an attachment disorder.* The Rowman & Littlefield Publishers.

Forgays, D., Hyman, I., & Schreiber, J. (2014). Texting everywhere for everything: Gender and age differences in cell phone etiquette and use. *Computers in Human Behavior, 31,* 314-321. doi:10.1016/j.chb.2013.10.053

Fowler, J., & Noyes, J. (2015). From dialing to tapping: University students report on mobile phone use. *Procedia Manufacturing, 3,* 4716-4723. doi:10.1016/j.promfg.2015.07.568

Fox, J., & Moreland, J. (2015). The dark side of social networking sites: An exploration of the relational and psychological stressors associated with Facebook use and affordances. *Computers in Human Behavior, 45,* 168-176. doi:10.1016/j.chb.2014.11.083

Frijda, N. (2009). Mood. In D. Sander & K. Scherer (Eds.), *The Oxford companion to emotion and affective sciences* (pp. 258-259). Oxford University Press.

Froese, A., Carpenter, C., Inman, D., Schooley, J., Barnes, P., & Brecht, P. (2012). Effects of classroom cellphone use on expected, actual learning. *College Student Journal, 46,* 323-333.

Fu, G., Liu, J., & Liu, H. (2020). The influence of emotional state on mobile phone addiction tendency in college students: The mediation role of regulatory emotion self-efficacy. *2020, 3(1),* 7. doi:10.11114/ijce.v3i1.4764

Funder, D. C. (1991). Global traits: A neo-allportian approach to personality. *Psychological Science, 2(1),* 31-39. doi:10.1111/j.1467-9280.1991.tb00093.x

Furst, R., & Evans, D. N. (2021). Emotional reactions to loss and recovery of a smartphone: Implications for habituation. *Journal of Technology in Behavioral Science*. doi:10.1007/s41347-021-00207-5

Gable, S., Reis, H., & Elliot, A. (2000). Behavioral activation and inhibition in everyday life. *Journal of Personality and Social Psychology, 78(6),* 1135-1149. doi:10.1037//0022-3514.78.6.1135

Gable, S., Reis, H.., Impett, E., & Asher, E. (2004). What do you do when things go right? The intrapersonal and interpersonal benefits of sharing positive events. *Journal of Personality and Social Psychology, 87(2),* 228-245. doi:10.1037/0022-3514.87.2.228

Gana, K., Broc, G., & Bailly, N. (2019). Does the Boredom proneness scale capture traitness of boredom? Results from a six-year longitudinal trait-state-occasion model. *Personality and Individual Differences, 139,* 247-253.

Gao, T., Xiang, Y. T., Zhang, H., Zhang, Z., & Mei, S. (2017). Neuroticism and quality of life: Multiple mediating effects of smartphone addiction and depression. *Psychiatry Research, 258,* 457-461. doi:10.1016/j.psychres.2017.08.074

Garaigordobil, M., Mollo-Torrico, J. P., Machimbarrena, J., & Páez, D. (2020). Cyberaggression in adolescents of Bolivia: Connection with psychopathological symptoms, adaptive and predictor variables. *International Journal of Environmental Research and Public Health, 17,* 1022. doi:10.3390/ijerph17031022

Gard, D. E., Kring, A. M., Gard, M. G., Horan, W. P., & Green, M. F. (2007). Anhedonia in schizophrenia: Distinctions between anticipatory and consummatory pleasure. *Schizophrenia Research, 93(1-3),* 253-260. doi:10.1016/j.schres.2007.03.008

Garson, D. (2014a). Introductory guide to HLM with HLM 7 software. In D. Garson (Ed.), *Hierarchical Linear Modeling: Guide and Applications* (pp. 55-96). SAGE.

Garson, D. (2014b). Preparing to analyze multilevel data. In D. Garson (Ed.), *Hierarchical Linear Modeling: Guide and Applications* (pp. 27-54). SAGE.

Gehricke, J. G., Whalen, C. K., Jamner, L. D., Wigal, T. L., & Steinhoff, K. (2006). The reinforcing effects of nicotine and stimulant medication in the everyday lives of adult smokers with adhd: A preliminary examination. *Nicotine & Tobacco Research, 8(1),* 37-47. doi:10.1080/14622200500431619

Gencoz, T. (2000). Positive and negative affect shedule: A study of validity and reliability. *Turkish Journal of Psychology, 15,* 19-28.

Gentile, D. A., Choo, H., Liau, A., Sim, T., Li, D., Fung, D., & Khoo, A. (2011). Pathological video game use among youths: A two-year longitudinal study. *Pediatrics, 127(2),* e319. doi:10.1542/peds.2010-1353

Gentina, E., Tang, T. L.-P., & Dancoine, P.-F. (2018). Does Gen Z's emotional intelligence promote icheating (cheating with iPhone) yet curb icheating through reduced nomophobia? *Computers & Education, 126,* 231-247.

Gezgin, D. (2017). Exploring the influence of the patterns of mobile internet use on university students' nomophobia levels. *European Journal of Education Studies, 3,* 29-53.

Gezgin, D., & Cakir, O. (2016). Analysis of nomofobic behaviors of adolescents regarding various factors. *Journal of Human Sciences, 13,* 2504-2519.

Gezgin, D., Cakir, O., & Yildirim, S. (2018). The relationship between levels of nomophobia prevalence and internet addiction among high school students: The factors influencing nomophobia. *International Journal of Research in Education and Science, 4,* 215-225.

Gezgin, D., Hamutoglu, N., Gultekin, G., & Gemikonakli, O. (2018). Relationship between nomophobia and fear of missing out among Turkish university students. *Cypriot Journal of Educational Science, 13,* 549–561.

Gezgin, D., Hamutoglu, N., Sezen-Gultekin, G., & Ayas, T. (2018). The relationship between nomophobia and loneliness among Turkish adolescents. *International Journal of Research in Education and Science, 4,* 358-374. doi:10.21890/ijres.409265

Gezgin, D., Hamutoglu, N., Sezen-Gultekin, G., & Yildirim, S. (2019). Preservice teachers' metaphorical perceptions on smartphone, no mobile phone phobia (nomophobia) and fear of missing out (FoMO). *Bartın University Journal of Faculty of Education, 8,* 733-783. doi:10.14686/buefad.516540

Gezgin, D., & Parlak, C. (2018). *Nomophobia prevalence among university students in Kosovo.* 13th Internatıonal Balkan Education and Science Congress, Edirne, Turkey.

Gezgin, D., Sahin, Y., & Yildirim, M. (2017). The investigation of social network users' nomophobia levels regarding to various factors. *Educational Technology Theory and Practice, 7,* 1-15.

Ghaderi Rammazi, M., Askarizadeh, G., Ahmadi, G., & Divsalar, K. (2018). The role of psychiatric symptoms, social support and meaning in life in predicting internet addiction among university students: A causal model. *Practice in Clinical Psychology, 6(2),* 101-110. doi:10.29252/nirp.jpcp.6.2.101

Giesbrecht, F. G., & Burns, J. C. (1985). Two-stage analysis based on a mixed model: Large-sample asymptotic theory and small-sample simulation results. *Biometrics, 41(2),* 477-486. doi:10.2307/2530872

Gijsbers van Wijk, C. M. T., Huisman, H., & Kolk, A. M. (1999). Gender differences in physical symptoms and illness behavior: A health diary study. *Social Science & Medicine, 49(8),* 1061-1074. doi:10.1016/S0277-9536(99)00196-3

Gioia, F., & Boursier, V. (2020). *Emotion dysregulation and adolescents' preference for online social interactions: The moderating role of gender.* Psychobit - First Symposium on Psychology-Based Technologies, Naples, Italy.

Gloster, A. T., Richard, D. C., Himle, J., Koch, E., Anson, H., Lokers, L., & Thornton, J. (2008). Accuracy of retrospective memory and covariation estimation in patients with obsessive-compulsive disorder. *Behaviour Research and Therapy, 46(5),* 642-655. doi:10.1016/j.brat.2008.02.010

Goetz, T., Frenzel, A., Hall, N., Nett, U., Pekrun, R., & Lipnevich, A. (2013). Types of boredom: An experience sampling approach. *Motivation and Emotion, 38,* 401-419. doi:10.1007/s11031-013-9385-y

Goetz, T., Frenzel, A., Stoeger, H., & Hall, N. (2010). Antecedents of everyday positive emotions: An experience sampling analysis. *Motivation and Emotion, 34(1)*, 49-62. doi:10.1007/s11031-009-9152-2

Gold, J. E., Driban, J. B., Thomas, N., Chakravarty, T., Channell, V., & Komaroff, E. (2012). Postures, typing strategies, and gender differences in mobile device usage: An observational study. *Applied Ergonomics, 43(2)*, 408-412. doi:10.1016/j.apergo.2011.06.015

Goldberg, Y. K., Eastwood, J. D., Laguardia, J., & Danckert, J. (2011). Boredom: An emotional experience distinct from apathy, anhedonia, or depression. *Journal of Social and Clinical Psychology, 30(6)*, 647–666. doi:10.1521/jscp.2011.30.6.647

Goldstein, A. L., Vilhena-Churchill, N., Stewart, S. H., Hoaken, P. N., & Flett, G. L. (2016). Mood, motives, and money: An examination of factors that differentiate online and non-online young adult gamblers. *Journal of Behavioral Addictions, 5(1)*, 68-76. doi:10.1556/2006.5.2016.003

Goncalves, S., Dias, P., & Correia, A.-P. (2020). Nomophobia and lifestyle: Smartphone use and its relationship to psychopathologies. *Computers in Human Behavior Reports, 2*, 100025. doi:10.1016/j.chbr.2020.100025

Gonzales, A., & Hancock, J. (2010). Mirror, mirror on my Facebook wall: Effects of exposure to Facebook on self-esteem. *Cyberpsychology, Behavior and Social Networking, 14*, 79-83. doi:10.1089/cyber.2009.0411

González-Bueso, V., Santamaría, J. J., Oliveras, I., Fernández, D., Montero, E., Baño, M., . . . Ribas, J. (2020). Internet gaming disorder clustering based on personality traits in adolescents, and its relation with comorbid psychological symptoms. *International Journal of Environmental Research and Public Health, 17(5)*. doi:10.3390/ijerph17051516

Grandhi, S., & Jones, Q. (2010). Technology-mediated interruption management. *International Journal of Human-Computer Studies, 68(5)*, 288-306. doi:10.1016/j.ijhcs.2009.12.005

Granholm, E., Ben-Zeev, D., Fulford, D., & Swendsen, J. (2013). Ecological momentary assessment of social functioning in schizophrenia: Impact of performance appraisals and affect on social interactions. *Schizophrenia Research, 145*, 120-124. doi:10.1016/j.schres.2013.01.005

Grassi, A., Gaggioli, A., & Riva, G. (2009). The green valley: The use of mobile narratives for reducing stress in commuters. *Cyberpsychology and Behavior, 12(2)*, 155-161. doi:10.1089/cpb.2008.0156

Gratz, K. L., & Roemer, L. (2004). Multidimensional assessment of emotion regulation and dysregulation: Development, factor structure, and initial validation of the Difficulties

in emotion regulation scale. *Journal of Psychopathology and Behavioral Assessment, 26(1),* 41-54. doi:10.1023/B:JOBA.0000007455.08539.94

Gray, E., & Watson, D. (2007). Assessing positive and negative affect via self-report. In J. Coan & J. Allen (Eds.), *Handbook of emotion elicitation and assessment* (pp. 171-183). Oxford University Press.

Green, A. S., Rafaeli, E., Bolger, N., Shrout, P. E., & Reis, H. T. (2006). Paper or plastic? Data equivalence in paper and electronic diaries. *Psychological Methods, 11(1),* 87-105. doi:10.1037/1082-989x.11.1.87

Greenberg, D., & Phillips, J. (2014). Hierarchical linear modeling of growth curve trajectories using hlm. In D. Garson (Ed.), *Hierarchical Linear Modeling: Guide and Applications* (pp. 219-248). SAGE.

Greenberg, L. (2002). Integrating an emotion-focused approach to treatment into psychotherapy integration. *Journal of Psychotherapy Integration, 12,* 154-189.

Greenberg, L. (2004). Emotion–focused therapy. *Clinical Psychology and Psychotherapy, 11,* 3-16.

Greenberg, L., & Paivio, S. (1997). *Working with the emotions in psychotherapy*. Guilford Press.

Greeno, C. G., Wing, R. R., & Shiffman, S. (2000). Binge antecedents in obese women with and without binge eating disorder. *Journal of Consulting and Clinical Psychology, 68(1),* 95-102.

Greenwood, D. N., & Long, C. R. (2009). Mood specific media use and emotion regulation: Patterns and individual differences. *Personality and Individual Differences, 46(5),* 616-621. doi:10.1016/j.paid.2009.01.002

Grellhesl, M., & Punyanunt-Carter, N. M. (2012). Using the uses and gratifications theory to understand gratifications sought through text messaging practices of male and female undergraduate students. *Computers in Human Behavior, 28(6),* 2175-2181. doi:10.1016/j.chb.2012.06.024

Griffiths, M. D. (2013). Social networking addiction: Emerging themes and issues. *Addiction Research and Therapy, 4,* 118-119. doi:10.4172/2155-6105.1000e118.

Griffiths, M. D., & Meredith, A. (2009). Videogame addiction and its treatment. *Journal of Contemporary Psychotherapy, 39(4),* 247-253. doi:10.1007/s10879-009-9118-4

Grommisch, G., Koval, P., Hinton, J. D. X., Gleeson, J., Hollenstein, T., Kuppens, P., & Lischetzke, T. (2019). Modeling individual differences in emotion regulation repertoire in daily life with multilevel latent profile analysis. *Emotion*. *20(8),*1462-1474 doi:10.1037/emo0000669

Gross, J. (2008). Emotion regulation. In M. Lewis, J. Haviland-Jones, & L. Barrett (Eds.), *Handbook of Emotions* (pp. 497-512). Guilford Press.

Gross, J., & Thompson, R. (2007). Emotion regulation: Conceptual foundations. In J. Gross (Ed.), *Handbook of Emotion Regulation* (pp. 3-24). Guilford Press.

Gross, J., & Barrett, L. (2011). Emotion generation and emotion regulation: One or two depends on your point of view. *Emotion review : Journal of the International Society for Research on Emotion, 3(1),* 8-16. doi:10.1177/1754073910380974

Guerrero, S. (2019). *Mobile phone use as an anxiety reducing coping mechanism* [Master's thesis, Long Island University].

Gul, H., Firat, S., Sertcelik, M., Gul, A., Gurel, Y., & Kilic, B. (2019). Cyberbullying among a clinical adolescent sample in Turkey: Effects of problematic smartphone use, psychiatric symptoms, and emotion regulation difficulties. *Psychiatry and Clinical Psychopharmacology, 29(4),* 547-557. doi:10.1080/24750573.2018.1472923

Gurbuz, I., & Ozkan, G. (2020). What is your level of nomophobia? An investigation of prevalence and level of nomophobia among young people in Turkey. *Community Mental Health Journal, 56(5),* 814-822. doi:10.1007/s10597-019-00541-2

Gutiérrez , E., Fernández , H., Gonzalvo, S., & Bilboa, J. (2014). Mediating role of emotional regulation between impulsive behavior in gambling, internet and videogame abuse, and dysfunctional symptomatology in young adults and adolescents. *Adicciones, 26,* 282-290.

Ha, J., Chin, B., Park, D., Ryu, S., & Yu, J. (2008). Characteristics of excessive cellular phone use in Korean adolescents. *CyberPsychology & Behavior, 11(6),* 783-784. doi:10.1089/cpb.2008.0096

Han, S., Kim, K. J., & Kim, J. H. (2017). Understanding nomophobia: Structural equation modeling and semantic network analysis of smartphone separation anxiety. *Cyberpsychology, Behavior, and Social Networking, 20(7),* 419-427. doi:10.1089/cyber.2017.0113

Han, Z. R., Lei, X., Qian, J., Li, P., Wang, H., & Zhang, X. (2016). Parent and child psychopathological symptoms: The mediating role of parental emotion dysregulation. *Child and Adolescent Mental Health, 21(3),* 161-168.

Harkin, L., & Kuss, D. (2020). "My smartphone is an extension of myself": A holistic qualitative exploration of the impact of using a smartphone. *Psychology of Popular Media, 10,* 28-38. doi:10.1037/ppm0000278

Harris, M. B. (2000). Correlates and characteristics of boredom proneness and boredom. *Journal of Applied Social Psychology, 30(3),* 576-598. doi:10.1111/j.1559-1816.2000.tb02497.x

Harwood, J., Julián, J. M., Scott, A., & Joiner, R. (2014). Constantly connected- the effects of smart-devices on mental health. *Computers in Human Behavior, 34*, 267–272. doi:10.1016/j.chb.2014.02.006

Hasler, B. P., Mehl, M. R., Bootzin, R. R., & Vazire, S. (2008). Preliminary evidence of diurnal rhythms in everyday behaviors associated with positive affect. *Journal of Research in Personality, 42(6)*, 1537-1546.

Hasmawati, F., Samiha, Y., Razzaq, A., & Anshari, M. (2020). Understanding nomophobia among digital natives: Characteristics and challenges. *Journal of Critical Reviews, 17*, 122-131. doi:10.31838/jcr.07.13.22

Havermans, R., Nicolson, N. A., & Devries, M. W. (2007). Daily hassles, uplifts, and time use in individuals with bipolar disorder in remission. *Journal of Nervous and Mental Disease, 195(9)*, 745-751. doi:10.1097/NMD.0b013e318142cbf0

Hawi, N. S., & Samaha, M. (2017). Relationships among smartphone addiction, anxiety, and family relations. *Behaviour & Information Technology, 36(10)*, 1046-1052. doi:10.1080/0144929X.2017.1336254

Hayes, S. C., Strosahl, K. D., & Wilson, K. G. (1999). *Acceptance and commitment therapy: An experiential approach to behaviour change*. Guilford Press.

Hebb, D. (1966). *A textbook of psychology.* Saunder.

Hechtman, L. A., Raila, H., Chiao, J. Y., & Gruber, J. (2013). Positive emotion regulation and psychopathology: A transdiagnostic cultural neuroscience approach. *Journal of Experimental Psychopathology, 4(5)*, 502-528. doi:10.5127/jep.030412

Hedeker, D. (2004). An introduction to growth modeling. In D. Kaplan (Ed.), *The Sage handbook of quantitative methodology for the social sciences* (pp. 215-234). SAGE.

Hedeker, D., & Gibbons, R. (2006). *Longitudinal data analysis*. Wiley.

Hedeker, D., & Mermelstein, R. (2007). Mixed-effects regression models with heterogeneous variance: Analyzing ecological momentary assessment (EMA) data of smoking. In L. Little, J. Bovaird, & N. Card (Eds.), *Modeling contextual effects in longitudinal studies* (pp. 183–206). Routledge.

Heinze, G., & Dunkler, D. (2017). Five myths about variable selection. *Transplant International, 30(1)*, 6-10. doi:10.1111/tri.12895

Hibbard, A. (2015). *The relationship of attachment styles and self-control on cell phone reliance* [Master's thesis, California State University]

Hilbert, A., & Tuschen-Caffier, B. (2007). Maintenance of binge eating through negative mood: A naturalistic comparison of binge eating disorder and bulimia nervosa. *International Journal of Eating Disorders, 40(6),* 521-530. doi:10.1002/eat.20401

Hoffman, L. (2015). Introduction to the analysis of longitudinal data. In *Longitudinal Analysis* (pp. 3-27). Routledge.

Hoffman, L., & Stawski, R. (2009). Persons as contexts: Evaluating between-person and within-person effects in longitudinal analysis. *Research in Human Development, 6,* 97-120. doi:10.1080/15427600902911189

Hoffner, C., & Lee, S. (2015). Mobile phone use, emotion regulation, and well-being. *Cyberpsychology, Behavior, and Social Networking, 18,* 411-416.

Hoffner, C., Lee, S., & Park, S. (2015). "I miss my mobile phone!": Self-expansion via mobile phone and responses to phone loss. *New Media & Society, 18(11),* 2452-2468. doi:10.1177/1461444815592665

Hogarth, R. M., Portell, M., & Cuxart, A. (2007). What risks do people perceive in everyday life? A perspective gained from the experience sampling method (ESM). *Risk Analysis, 27(6),* 1427-1439. doi:10.1111/j.1539-6924.2007.00978.x

Hoge, E., Bickham, D., & Cantor, J. (2017). Digital media, anxiety, and depression in children. *Pediatrics, 140,* 76-80. doi:10.1542/peds.2016-1758G

Hollett, K., & Harris, N. (2019). Dimensions of emotion dysregulation associated with problem video gaming. *Addiction Research & Theory, 28,* 38-45. doi:10.1080/16066359.2019.1579801

Hormes, J. M., Kearns, B., & Timko, C. A. (2014). Craving Facebook? Behavioral addiction to online social networking and its association with emotion regulation deficits. *Addiction, 109 (12),* 2079-2088. doi:10.1111/add.12713

Horwood, S., & Anglim, J. (2018). Personality and problematic smartphone use: A facet-level analysis using the five factor model and hexaco frameworks. *Computers in Human Behavior, 85,* 349-359. doi:10.1016/j.chb.2018.04.013

Horwood, S., & Anglim, J. (2019). Problematic smartphone usage and subjective and psychological well-being. *Computers in Human Behavior, 97,* 44-50. doi:10.1016/j.chb.2019.02.028

Hosgor, H., Coskun, F., Caliskan, F., & Gunduz-Hosgor, D. (2020). Relationship between nomophobia, fear of missing out, and perceived work overload in nurses in Turkey. *Perspectives in Psychiatric Care, 57(3), 1026-1033.* doi:10.1111/ppc.12653

Hu, J., Zhen, S., Yu, C., Zhang, Q., & Zhang, W. (2017). Sensation seeking and online gaming addiction in adolescents: A moderated mediation model of positive affective

associations and impulsivity. *Frontiers in Psychology, 8(699)*. doi:10.3389/fpsyg.2017.00699

Hunter, A., & Eastwood, J. D. (2018). Does state boredom cause failures of attention? Examining the relations between trait boredom, state boredom, and sustained attention. *Experimental Brain Research, 236(9)*, 2483-2492. doi:10.1007/s00221-016-4749-7

Hunter, J. A., Dyer, K. J., Cribbie, R. A., & Eastwood, J. D. (2016). Exploring the utility of the Multidimensional state boredom scale. *European Journal of Psychological Assessment, 32(3)*, 241-250. doi:10.1027/1015-5759/a000251

Hurlburt, R., Happe, F., & Frith, U. (1994). Sampling the form of inner experience in three adults with asperger syndrome. *Psychological Medicine, 24(2)*, 385-395. doi:10.1017/s0033291700027367

Hurlburt, R., & Heavey, C. (2004). To beep or not to beep: Obtaining accurate reports about awareness. *Journal of Consciousness Studies, 11(7-8)*, 113-128.

Ito, E., Walker, G. J., & Mannell, B. (2018). Discrepancies between Japanese undergraduate students' ideal affect and actual affect in social contexts and life domains. *International Journal of the Sociology of Leisure, 1(3)*, 227-240. doi:10.1007/s41978-018-0015-9

Jacobs, N., Nicolson, N. A., Derom, C., Delespaul, P., van Os, J., & Myin-Germeys, I. (2005). Electronic monitoring of salivary cortisol sampling compliance in daily life. *Life Science, 76(21)*, 2431-2443. doi:10.1016/j.lfs.2004.10.045

Jahrami, H., Abdelaziz, A., Binsanad, L., Alhaj, O. A., Buheji, M., Bragazzi, N. L., . . . Vitiello, M. V. (2021). The association between symptoms of nomophobia, insomnia and food addiction among young adults: Findings of an exploratory cross-sectional survey. *International Journal of Environmental Research and Public Health, 18(2)*. doi:10.3390/ijerph18020711

Jang, K. S., Hwang, S. Y., & Choi, J. Y. (2008). Internet addiction and psychiatric symptoms among Korean adolescents. *Journal of School Health, 78(3)*, 165-171. doi:10.1111/j.1746-1561.2007.00279.x

Jenaro, C., Flores, N., Gómez-Vela, M., González-Gil, F., & Caballo, C. (2007). Problematic internet and cell-phone use: Psychological, behavioral, and health correlates. *Addiction Research & Theory, 15(3)*, 309-320. doi:10.1080/16066350701350247

Jeronimus, B., Riese, H., Sanderman, R., & Ormel, J. (2014). Mutual reinforcement between neuroticism and life experiences: A five-wave, 16-year study to test reciprocal causation. *Journal of Personality and Social Psychology, 107*, 751-764.

Jessup, G., Bian, S., Chen, Y., & Bundy, A. (2012). *P.I.E.L. Survey application manual.* https://ses.library.usyd.edu.au/handle/2123/9490

Jilisha, G., Venkatachalam, J., Menon, V., & Olickal, J. J. (2019). Nomophobia: A mixed-methods study on prevalence, associated factors, and perception among college students in Puducherry, India. *Indian Journal of Psychological Medicine, 41(6),* 541-548. doi:10.4103/ijpsym.Ijpsym_130_19

Johnson, J. (2021). *Video call services use during Covid-19 pandemic in the U.S. 2020.* https://www.statista.com/statistics/1119981/videoconferencing-services-us-coronavirus-pandemic/

Juneja, M., & Sethi, M. (2015). Internet addiction, emotional intelligence and anxiety in youth. *The International Journal of Indian Psychology, 3,* 129-137.

Kahneman, D., Krueger, A. B., Schkade, D. A., Schwarz, N., & Stone, A. A. (2004). A survey method for characterizing daily life experience: The day reconstruction method. *Science, 306(5702),* 1776-1780. doi:10.1126/science.1103572

Kamibeppu, K., & Sugiura, H. (2005). Impact of the mobile phone on junior high-school students' friendships in the Tokyo metropolitan area. *CyberPsychology & Behavior, 8(2),* 121-130. doi:10.1089/cpb.2005.8.121

Kanjo, E., Kuss, D., & Ang, C. (2017). Notimind: Utilizing responses to smart phone notifications as affective sensors. *IEEE Access, 5,* 22023-22035. doi:10.1109/ACCESS.2017.2755661

Kara, M., Baytemir, K., & Inceman-Kara, F. (2019). Duration of daily smartphone usage as an antecedent of nomophobia: Exploring multiple mediation of loneliness and anxiety. *Behaviour & Information Technology, 40(1),* 85-98. doi:10.1080/0144929X.2019.1673485

Karaaslan, I., & Budak, L. (2012). Research on the use of mobile phone features by university students and its impact on their communication practices in everyday life. *Journal of Yasar University, 29,* 4548-4525.

Karademir, T., & Kaya, O. (2020). The distribution of variables that affect nomophobia in adults' profiles. *International Journal of Research in Education and Science, 6,* 534-550. doi:10.46328/ijres.v6i4.1012

Kardefelt-Winther, D. (2014). A conceptual and methodological critique of internet addiction research: Towards a model of compensatory internet use. *Computers in Human Behavior, 31,* 351-354. doi:10.1016/j.chb.2013.10.059

Kasa, M., Ong, U., Ramli, N., & Hamzah, H. (2020). The antecedents of smartphone technology addiction among hotel employees. *International Journal of Academic*

Research in Business and Social Sciences, 10, 541-552. doi:10.6007/IJARBSS/v10-i7/7456

Kashdan, T. B., & Farmer, A. S. (2014). Differentiating emotions across contexts: Comparing adults with and without social anxiety disorder using random, social interaction, and daily experience sampling. *Emotion, 14(3),* 629-638. doi:10.1037/a0035796

Kashdan, T. B., & Nezlek, J. B. (2012). Whether, when, and how is spirituality related to well-being? Moving beyond single occasion questionnaires to understanding daily process. *Personality and Social Psychology Bulletin, 38(11),* 1523-1535. doi:10.1177/0146167212454549

Kateb, S. (2017). The prevalence and psychological symptoms of nomophobia among university students. *Journal of Research in Curriculum Instruction and Educational Technology, 3,* 155-182. doi:10.21608/jrciet.2017.24454

Katz, E. C., Earnest, D. R., & Lewis, C. (2018). Impact on negative mood and craving of a classroom policy prohibiting mobile technology use. *Journal of Technology in Behavioral Science, 3(2),* 69-76. doi:10.1007/s41347-017-0042-2

Katz, J., Lever, K., & Chen, Y. (2008). Mobile music as environmental control and prosocial entertainment. In J. Katz (Ed.), *Handbook of mobile communication studies* (pp. 367-376). MIT Press.

Kaviani, F., Robards, B., Young, K. L., & Koppel, S. (2020). Nomophobia: Is the fear of being without a smartphone associated with problematic use? *International Journal of Environmental Research and Public Health, 17(17)*. doi:10.3390/ijerph17176024

Kaye, L., & Bryce, J. (2014). Go with the flow: The experience and affective outcomes of solo versus social gameplay. *Journal of Gaming and Virtual Worlds, 6,* 49-60. doi:10.1386/jgvw.6.1.49_1

Keefer, L. A., Landau, M. J., Rothschild, Z. K., & Sullivan, D. (2012). Attachment to objects as compensation for close others' perceived unreliability. *Journal of Experimental Social Psychology, 48(4),* 912-917. doi:10.1016/j.jesp.2012.02.007

Kenny, R., Dooley, B., & Fitzgerald, A. (2016). Ecological momentary assessment of adolescent problems, coping efficacy, and mood states using a mobile phone app: An exploratory study. *JMIR Mental Health, 3(4),* e51. doi:10.2196/mental.6361

Kessler, R. C., Berglund, P., Demler, O., Jin, R., Merikangas, K. R., & Walters, E. E. (2005). Lifetime prevalence and age-of-onset distributions of dsm-iv disorders in the national comorbidity survey replication. *Archives of General Psychiatry, 62(6),* 593-602. doi:10.1001/archpsyc.62.6.593

Ketykó, I., Moor, K., Joseph, W., Martens, L., & Marez, L. (2010). *Performing qoe-measurements in an actual 3G network*. The International Symposium on Broadband Multimedia Systems and Broadcasting, Venue, Shanghai.

Khan, S., Atta, M., Malik, N., & Makhdoom, I. (2021). Prevalence and relationship of smartphone addiction, nomophobia, and social anxiety among college and university late adolescents. *Elementary Education Online, 20*, 3588-3595. doi:10.17051/ilkonline.2021.05.394

Khang, H., Kim, J. K., & Kim, Y. (2013). Self-traits and motivations as antecedents of digital media flow and addiction: The internet, mobile phones, and video games. *Computers in Human Behavior, 29(6)*, 2416-2424.

Kim, J., & Choi, K. (2008). Closing the gap: Modeling within-school variance heterogeneity in school effect studies. *Asia Pacific Education Review, 9(2)*, 206-220. doi:10.1007/BF03026500

Kim, K. (2013). Association between internet overuse and aggression in Korean adolescents. *Pediatrics International, 55(6)*, 703-709. doi:10.1111/ped.12171

Kim, M. (2015). Influence of neck pain on cervical movement in the sagittal plane during smartphone use. *Journal of Physical Therapy Science, 27(1)*, 15-17.

Kim, S., Park, J., Kim, H., Pan, Z., Lee, Y., & McIntyre, R. (2019). The relationship between smartphone addiction and symptoms of depression, anxiety, and attention-deficit/hyperactivity in South Korean adolescents. *Annals of General Psychiatry, 18(1)*, 1-8. doi:10.1186/s12991-019-0224-8

Kim, Y., & Park, S. (2007). A study on the effects of on-line game on gamers' flow experience and loyalty. *Korean Journal of Broadcasting and Telecommunication Studies, 21*, 179-208.

King, A., Valenca, A., Silva, A., Sancassiani, F., Machado, S., & Nardi, A. (2014). "Nomophobia": Impact of cell phone use interfering with symptoms and emotions of individuals with panic disorder compared with a control group. *Clinical Practice & Epidemiology in Mental Health, 10*, 28-35.

King, A., Valenca, A., Silva, A., Baczynski, T., Carvalho, M., & Nardi, A. (2013). Nomophobia: Dependency on virtual environments or social phobia? *Computers in Human Behavior, 29(1)*, 140-144. doi:10.1016/j.chb.2012.07.025

King, A., Valenca, A., & Nardi, A. (2010). Nomophobia: The mobile phone in panic disorder with agoraphobia: Reducing phobias or worsening of dependence? *Cognitive and Behavioral Neurology, 23(1)*, 52-54.

Kirac, R. (2019). Effect of nomophobia on attention deficit. *International Journal of Society Researches, 14*, 1096-1114. doi:DOI: 10.26466/opus.605294

Klapp, O. (1987). Overload and boredom: Essays on the quality of life in the information society. *The Library Quarterly, 57(2),* 230-232. doi:10.1086/601886

Kneer, J., & Glock, S. (2013). Escaping in digital games: The relationship between playing motives and addictive tendencies in males. *Computers in Human Behavior, 29(4),* 1415-1420. doi:10.1016/j.chb.2013.01.030

Knowles, R., Tai, S., Jones, S. H., Highfield, J., Morriss, R., & Bentall, R. P. (2007). Stability of self-esteem in bipolar disorder: Comparisons among remitted bipolar patients, remitted unipolar patients and healthy controls. *Bipolar Disorders, 9(5),* 490-495. doi:10.1111/j.1399-5618.2007.00457.x

Ko, C., Liu, T., Wang, P., Chen, C., Yen, C., & Yen, J. (2014). The exacerbation of depression, hostility, and social anxiety in the course of internet addiction among adolescents: A prospective study. *Comprehensive Psychiatry, 55(6),* 1377-1384. doi:10.1016/j.comppsych.2014.05.003

Ko, C., Yen, J., Chen, C., & Wang, S. (2008). The association between internet addiction and belief of frustration intolerance: The gender difference. *Cyberpsychology & behavior, 11,* 273-278. doi:10.1089/cpb.2007.0095

Ko, C., Yen, J., Chen, C., Yeh, Y., & Yen, C. (2009). Predictive values of psychiatric symptoms for internet addiction in adolescents: A 2-year prospective study. *Archives of Pediatrics & Adolescent Medicine, 163(10),* 937-943.

Ko, C., Yen, J., Yen, C., Lin, H., & Yang, M. (2007). Factors predictive for incidence and remission of internet addiction in young adolescents: A prospective study. *Cyberpsychology & Behavior, 10(4),* 545-551. doi:10.1089/cpb.2007.9992

Koc, E., Eksi, H., & Demirci, I. (2018). *The psychometric properties of the Turkish form of Boredom proneness scale-short form (BPS-SR).* 1st International Congress on Seeking New Perspectives in Education, Istanbul.

Koc, M. (2011). Internet addiction and psychopathology. *Turkish Online Journal of Educational Technology, 10,* 143-148.

Kolsaker, A., & Drakatos, N. (2009). Mobile advertising: The influence of emotional attachment to mobile devices on consumer receptiveness. *Journal of Marketing Communications, 15(4),* 267-280. doi:10.1080/13527260802479664

Konok, V., Gigler, D., Bereczky, B., & Miksoli, A. (2016). Humans' attachment to their mobile phones and its relationship with interpersonal attachment style. *Computers in Human Behavior, 61,* 537-547.

Konok, V., Pogany, A., & Miklosi, A. (2017). Mobile attachment: Separation from the mobile induces physiological and behavioural stress and attentional bias to separation-related stimuli. *Computers in Human Behavior, 71,* 228-239.

Koo, M., Algoe, S. B., Wilson, T. D., & Gilbert, D. T. (2008). It's a wonderful life: Mentally subtracting positive events improves people's affective states, contrary to their affective forecasts. *Journal of Personality and Social Psychology, 95(5)*, 1217-1224. doi:10.1037/a0013316

Kormendi, A., Brutoczki, Z., Vegh, B. P., & Szekely, R. (2016). Smartphone use can be addictive? A case report. *Journal of Behavioral Addictions, 5(3)*, 548-552. doi:10.1556/2006.5.2016.033

Koronczai, B., Kokonyei, G., Griffiths, M. D., & Demetrovics, Z. (2019). The relationship between personality traits, psychopathological symptoms, and problematic internet use: A complex mediation model. *Journal of Medical Internet Research, 21(4)*, e11837. doi:10.2196/11837

Krajewska-Kulak, E., Kulak, W., Stryzhak, A., Szpakow, A., Prokopowicz, W., & Marcinkowski, J. (2012). Problematic mobile phone using among the Polish and Belarusian university students, a comparative study. *Progress in Health Science, 2*, 45-50.

Kraut, R., Patterson, M., Lundmark, V., Kiesler, S., Mukopadhyay, T., & Scherlis, W. (1998). Internet paradox. A social technology that reduces social involvement and psychological well-being? *American Psychologist, 53(9)*, 1017-1031. doi:10.1037//0003-066x.53.9.1017

Kristin, K. (1997). *How variables uncorrelated with the dependent variable can actually make excellent predictors: The important suppressor variable case* (Report No. ED 407420). The Southwest Educational Research Association. https://files.eric.ed.gov/fulltext/ED407420.pdf

Kross, E., Verduyn, P., Demiralp, E., Park, J., Lee, D. S., Lin, N., . . . Ybarra, O. (2013). Facebook use predicts declines in subjective well-being in young adults. *PLOS ONE, 8(8)*, e69841. doi:10.1371/journal.pone.0069841

Krueger, R. F., Markon, K. E., Patrick, C. J., Benning, S. D., & Kramer, M. D. (2007). Linking antisocial behavior, substance use, and personality: An integrative quantitative model of the adult externalizing spectrum. *Journal of Abnormal Psychology, 116(4)*, 645-666. doi:10.1037/0021-843X.116.4.645

Ku, Y., Chu, T., & Tseng, C. (2013). Gratifications for using CMC technologies: A comparison among SNS, IM, and e-mail. *Computers in Human Behavior, 29(1)*, 226-234. doi: 10.1016/j.chb.2012.08.009

Kumar, A., & Thomas, S. (2020). Study on nomophobia and anger among undergraduates during Covid-19 pandemic. *The International Journal of Indian Psychology, 8*, 1397-1403. doi:10.25215/0803.145

Kupferberg, A., Bicks, L., & Hasler, G. (2016). Social functioning in major depressive disorder. *Neuroscience & Biobehavioral Reviews, 69,* 313-332. doi:10.1016/j.neubiorev.2016.07.002

Kuscu, T. D., Gumustas, F., Rodopman Arman, A., & Goksu, M. (2021). The relationship between nomophobia and psychiatric symptoms in adolescents. *International Journal of Psychiatry in Clinical Practice, 25(1),* 56-61.

Kuss, D. J., Kanjo, E., Crook-Rumsey, M., Kibowski, F., Wang, G. Y., & Sumich, A. (2018). Problematic mobile phone use and addiction across generations: The roles of psychopathological symptoms and smartphone use. *Journal of Technology in Behavioral Science, 3(3),* 141-149. doi:10.1007/s41347-017-0041-3

Kwok, O. M., Underhill, A. T., Berry, J. W., Luo, W., Elliott, T. R., & Yoon, M. (2008). Analyzing longitudinal data with multilevel models: An example with individuals living with lower extremity intra-articular fractures. *Rehabilitation Psychology, 53(3),* 370-386. doi:10.1037/a0012765

Kwon, M., Lee, J., Won, W., Park, J., Min, J., & Hahn, C. (2013). Development and validation of a smartphone addiction scale (SAS). *PloS One, 8,* 1-7.

Laconi, S., Kaliszewska-Czeremska, K., Gnisci, A., Sergi, I., Barke, A., Jeromin, F., . . . Kuss, D. J. (2018). Cross-cultural study of problematic internet use in nine European countries. *Computers in Human Behavior, 84,* 430-440. doi:10.1016/j.chb.2018.03.020

Laconi, S., Vigouroux, M., Lafuente, C., & Chabrol, H. (2017). Problematic internet use, psychopathology, personality, defense and coping. *Computers in Human Behavior, 73,* 47-54. doi:10.1016/j.chb.2017.03.025

Lambert, N. M., Gwinn, A. M., Baumeister, R. F., Strachman, A., Washburn, I. J., Gable, S. L., & Fincham, F. D. (2012). A boost of positive affect: The perks of sharing positive experiences. *Journal of Social and Personal Relationships, 30(1),* 24-43. doi:10.1177/0265407512449400

Lammers, J., Kuntsche, E., Engels, R. C., Wiers, R. W., & Kleinjan, M. (2013). Mediational relations of substance use risk profiles, alcohol-related outcomes, and drinking motives among young adolescents in the Netherlands. *Drug and Alcohol Dependence, 133(2),* 571-579. doi:10.1016/j.drugalcdep.2013.07.030

Langens, T. A., & Schüler, J. (2005). Written emotional expression and emotional well-being: The moderating role of fear of rejection. *Personality and Social Psychology Bulletin, 31(6),* 818-830. doi:10.1177/0146167204271556

Langston, C. A. (1994). Capitalizing on and coping with daily-life events: Expressive responses to positive events. *Journal of Personality and Social Psychology, 67(6),* 1112-1125. doi:10.1037/0022-3514.67.6.1112

LaRose, R., Connolly, R., Lee, H., Li, K., & Hales, K. D. (2014). Connection overload? A cross cultural study of the consequences of social media connection. *Information Systems Management, 31(1),* 59-73. doi:10.1080/10580530.2014.854097

Larson, R., & Csikszentmihalyi , M. (2014). The experience sampling method. In *Flow and the foundations of positive psychology* (pp. 21-34). Springer.

Larson, R., Csikszentmihalyi, M., & Graef, R. (1980). Mood variability and the psychosocial adjustment of adolescents. *Journal of Youth and Adolescence, 9(6),* 469-490. doi:10.1007/bf02089885

Larson, R., Zuzanek, J., & Mannell, R. (1985). Being alone versus being with people: Disengagement in the daily experience of older adults. *Journal of Gerontology, 40(3),* 375-381. doi:10.1093/geronj/40.3.375

Larson, R., Moneta, G., Richards, M. H., & Wilson, S. (2002). Continuity, stability, and change in daily emotional experience across adolescence. *Child Development, 73(4),* 1151-1165. doi:10.1111/1467-8624.00464

Larson, R., & Richards, M. H. (1991). Boredom in the middle school years: Blaming schools versus blaming students. *American Journal of Education, 99(4),* 418-443. doi:10.1086/443992

Lavender, J. M., Tull, M. T., DiLillo, D., Messman-Moore, T., & Gratz, K. L. (2017). Development and validation of a state-based measure of emotion dysregulation. *Assessment, 24(2),* 197-209. doi:10.1177/1073191115601218

Lea, M., & Spears, R. (1991). Computer-mediated communication, de-individuation and group decision-making. *International Journal of Man-Machine Studies, 34(2),* 283-301. doi:10.1016/0020-7373(91)90045-9

Leckie, G., French, R., Charlton, C., & Browne, W. (2014). Modeling heterogeneous variance–covariance components in two-level models. *Journal of Educational and Behavioral Statistics, 39(5),* 307-332. doi:10.3102/1076998614546494

Ledbetter, A. M., & Finn, A. N. (2013). Teacher technology policies and online communication apprehension as predictors of learner empowerment. *Communication Education, 62(3),* 301-317. doi:10.1080/03634523.2013.794386

Lee, C., Wyeth, P., Johnson, D., & Hall, J. (2015). *Flow during individual and co-operative gameplay.* 2015 Annual Symposium of Computer-Human Interaction in Play, New York.

Lee, D. S., Orvell, A., Briskin, J., Shrapnell, T., Gelman, S. A., Ayduk, O., . . . Kross, E. (2020). When chatting about negative experiences helps-and when it hurts: Distinguishing adaptive versus maladaptive social support in computer-mediated communication. *Emotion, 20(3),* 368-375. doi:10.1037/emo0000555

Lee, H., Ahn, H., Choi, S., & Choi, W. (2014). The SAMS: Smartphone addiction management system and verification. *Journal of Medical Systems, 38*, 1-10.

Lee, S., Kim, M., Mendoza, J., & McDonough, I. (2018). Addicted to cellphones: Exploring the psychometric properties between the nomophobia questionnaire and obsessiveness in college students. *Heliyon, 4(11)*, e00895. doi:10.1016/j.heliyon.2018.e00895

Lee, S., Kim, M., McDonough, I., Mendoza, J., & Kim, M. (2017). The effects of cell phone use and emotion-regulation style on college students' learning. *Applied Cognitive Psychology, 31(3)*, 360-366. doi:10.1002/acp.3323

Lepp, A., Barkley, J., & Karpinski, A. (2015). The relationship between cell phone use, academic performance, anxiety, and satisfaction with life in college students. *Computers in Human Behavior, 31*, 343-350.

Leung, L. (2015). Using tablet in solitude for stress reduction: An examination of desire for aloneness, leisure boredom, tablet activities, and location of use. *Computers in Human Behavior, 48*, 382-391. doi:10.1016/j.chb.2015.01.068

Leung, L. (2020). Exploring the relationship between smartphone activities, flow experience, and boredom in free time. *Computers in Human Behavior, 103*, 130-139. doi:10.1016/j.chb.2019.09.030

Leung, L., & Wei, R. (2000). More than just talk on the move: Uses and gratifications of the cellular phone. *Journalism & Mass Communication Quarterly, 77(2)*, 308-320. doi:10.1177/107769900007700206

Li, D., Liau, A., & Khoo, A. (2011). Examining the influence of actual-ideal self-discrepancies, depression, and escapism, on pathological gaming among massively multiplayer online adolescent gamers. *Cyberpsychology, Behavior, and Social Networking, 14(9)*, 535-539. doi:10.1089/cyber.2010.0463

Li, L., Griffiths, M. D., Mei, S., & Niu, Z. (2020). Fear of missing out and smartphone addiction mediates the relationship between positive and negative affect and sleep quality among Chinese university students. *Frontiers in Psychiatry, 11(877)*. doi:10.3389/fpsyt.2020.00877

Li, S., & Chung, T. (2006). Internet function and internet addictive behavior. *Computers in Human Behavior, 22(6)*, 1067-1071. doi:10.1016/j.chb.2004.03.030

Li, Y., Starr, L., & Hershenberg, R. (2017). Responses to positive affect in daily life: Positive rumination and dampening moderate the association between daily events and depressive symptoms. *Journal of Psychopathology and Behavioral Assessment, 39*, 412-425.

Lin, C., Lin, S., & Wu, C. (2009). The effects of parental monitoring and leisure boredom on adolescents' internet addiction. *Adolescence, 44*, 993-1004.

Lin, T., & Chiang, Y. (2017). Investigating predictors of smartphone dependency symptoms and effects on academic performance, improper phone use and perceived sociability. *International Journal of Mobile Communications, 15*, 655-676. doi:10.1504/IJMC.2017.10005647

Lin, Y., Chiang, C., Lin, P., Chang, L., Ko, C., Lee, Y., & Lin, S. (2016). Proposed diagnostic criteria for smartphone addiction. *PLOS ONE, 11(11)*, e0163010. doi:10.1371/journal.pone.0163010

Linehan, M. (1993). *Cognitive–behavioral treatment of borderline personality disorder*. Guilford Press.

Linehan, M., Bohus, M., & Lynch, T. (2007). Dialectical behavior therapy for pervasive emotion dysregulation: Theoretical and practical underpinnings. In J. Gross (Ed.), *Handbook of emotion regulation* (pp. 581-606). Guilford Press.

Liu, C., & Ma, J. (2020). Social media addiction and burnout: The mediating roles of envy and social media use anxiety. *Current Psychology, 39(6)*, 1883-1891. doi:10.1007/s12144-018-9998-0

Lo Coco, G., Salerno, L., Franchina, V., La Tona, A., Di Blasi, M., & Giordano, C. (2020). Examining bi-directionality between fear of missing out and problematic smartphone use. A two-wave panel study among adolescents. *Addictive Behaviors, 106*, 106360. doi:10.1016/j.addbeh.2020.106360

Long, J., Liu, T., Liao, Y., Qi, C., He, H., Chen, S., & Billieux, J. (2016). Prevalence and correlates of problematic smartphone use in a large random sample of Chinese undergraduates. *BMC Psychiatry, 16(1)*, 408. doi:10.1186/s12888-016-1083-3

Lougheed, J. P., Hollenstein, T., Lichtwarck-Aschoff, A., & Granic, I. (2015). Maternal regulation of child affect in externalizing and typically-developing children. *Journal of Family Psychology, 29(1)*, 10-19. doi:10.1037/a0038429

Louragli, I., Ahami, A., Khadmaoui, A., Mammad, K., & Chaker Lamrani, A. (2018). Evaluation of the nomophobia's prevalence and its impact on school performance among adolescents in Morocco. *Problems of Psychology in the 21st Century, 12*, 84-94. doi:10.33225/ppc/18.12.84

Lucas, R. E., Wallsworth, C., Anusic, I., & Donnellan, M. B. (2021). A direct comparison of the day reconstruction method (DRM) and the experience sampling method (ESM). *Journal of Personality and Social Psychology, 120(3)*, 816-835. doi:10.1037/pspp0000289

Lukoff, K., Yu, C., Kientz, J., & Hiniker, A. (2018). What makes smartphone use meaningful or meaningless? *Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies, 2(1),* Article 22. doi:10.1145/3191754

Macht, M., Haupt, C., & Salewsky, A. (2004). Emotions and eating in everyday life: Application of the experience-sampling method. *Ecology of Food and Nutrition, 43(4),* 11-21. doi:10.1080/03670240490454723

Mackesy-Amiti, M. E., & Donenberg, G. (2020). Negative affect and emotion dysregulation among people who inject drugs: An ecological momentary assessment study. *Psychology of Addictive Behaviors*. *34,* 650-659. doi:10.1037/adb0000577

Maeng, S., & Arbeau, K. (2018). *The struggle is real: Fear of missing out (fomo) and nomophobia can, but do not always, occur together*. [Bachelor's thesis, Trinity Western University]

Malik, N. (2018, April). *50 mobile statistics, facts and trends to guide you in 2018*. https://citrusbits.com/50-mobile-statistics-facts-and-trends/

Malkovsky, E., Merrifield, C., Goldberg, Y., & Danckert, J. (2012). Exploring the relationship between boredom and sustained attention. *Experimental Brain Research, 221(1),* 59-67. doi:10.1007/s00221-012-3147-z

Mallya, N., Kumar, S., & Mashal, S. (2018). A study to evaluate the behavioral dimensions of "nomophobia" and attitude toward smartphone usage among medical students in Bengaluru. *National Journal of Physiology, Pharmacy and Pharmacology, 8,* 1553-1557.

Mann, S., & Robinson, A. (2009). Boredom in the lecture theatre: An investigation into the contributors, moderators and outcomes of boredom amongst university students. *British Educational Research Journal, 35(2),* 243-258.

Mannion, K. (2018). *The effect of smartphones on anxiety: An attachment issue or fear of missing out?* [Master's thesis, Seton Hall University] https://scholarship.shu.edu/dissertations.

Marino, C., Gini, G., Angelini, F., Vieno, A., & Spada, M. M. (2020). Social norms and e-motions in problematic social media use among adolescents. *Addictive Behaviors Reports, 11,* 100250. doi:10.1016/j.abrep.2020.100250

Marino, C., Vieno, A., Moss, A. C., Caselli, G., Nikčević, A. V., & Spada, M. M. (2016). Personality, motives and metacognitions as predictors of problematic Facebook use in university students. *Personality and Individual Differences, 101,* 70-77. doi:10.1016/j.paid.2016.05.053

Mark, G., Iqbal, S., Czerwinski, M., & Johns, P. (2014). *Bored mondays and focused afternoons: The rhythm of attention and online activity in the workplace.* Conference on Human Factors in Computing Systems, Toronto, Ontario, Canada.

Martínez-Vispo, C., Senra, C., López-Durán, A., & Rio, E. (2019). Boredom susceptibility as predictor of smoking cessation outcomes: Sex differences. *Personality and Individual Differences, 146,* 130-135.

Marty-Dugas, J., & Smilek, D. (2020). The relations between smartphone use, mood, and flow experience. *Personality and Individual Differences, 164,* 109966. doi:10.1016/j.paid.2020.109966

Martz, M., Schulenberg, J., Patrick, M., & Kloska, D. (2016). "I am so bored!": Prevalence rates and sociodemographic and contextual correlates of high boredom among American adolescents. *Youth & Society, 50(5),* 688-710.

Masur, M. K. (2018). *Situational privacy and self-disclosure: Communication processes in online environments.* Springer.

Mathiak, K. A., Klasen, M., Zvyagintsev, M., Weber, R., & Mathiak, K. (2013). Neural networks underlying affective states in a multimodal virtual environment: Contributions to boredom. *Frontiers in Human Neuroscience, 7,* 820-820. doi:10.3389/fnhum.2013.00820

Matic, A., Pielot, M., & Oliver, N. (2015). *Boredom-computer interaction: Boredom proneness and the use of smartphone.* Proceedings of the 2015 ACM International Joint Conference on Pervasive and Ubiquitous Computing, Osaka, Japan.

Mazaheri, M. (2015). Difficulties in emotion regulation and mindfulness in psychological and somatic symptoms of functional gastrointestinal disorders. *Iranian Journal of Psychiatry and Behavioral Sciences, 9(4),* e954. doi:10.17795/ijpbs-954

McCoach, D. B., & Kaniskan, B. (2010). Using time-varying covariates in multilevel growth models. *Frontiers in Psychology, 1,* 1-12. doi:10.3389/fpsyg.2010.00017

McCormick, R. A., & Smith, M. (1995). Aggression and hostility in substance abusers: The relationship to abuse patterns, coping style, and relapse triggers. *Addictive Behaviors, 20(5),* 555-562. doi:10.1016/0306-4603(95)00015-5

McGiboney, G. W., & Carter, C. (1988). Boredom proneness and adolescents' personalities. *Psychological Reports, 63(3),* 741-742. doi:10.2466/pr0.1988.63.3.741

McLaughlin, L. E., Luberto, C. M., O'Bryan, E. M., Kraemer, K. M., & McLeish, A. C. (2019). The indirect effect of positive affect in the relationship between trait mindfulness and emotion dysregulation. *Personality and Individual Differences, 145,* 70-74. doi:10.1016/j.paid.2019.03.020

McNicol, M. L., & Thorsteinsson, E. B. (2017). Internet addiction, psychological distress, and coping responses among adolescents and adults. *Cyberpsychology, Behavior, and Social Networking, 20(5),* 296-304. doi:10.1089/cyber.2016.0669

McRae, K., Heller, S. M., John, O. P., & Gross, J. J. (2011). Context-dependent emotion regulation: Suppression and reappraisal at the Burning Man Festival. *Basic and Applied Social Psychology, 33(4),* 346-350. doi:10.1080/01973533.2011.614170

Mendoza, J. S., Pody, B. C., Lee, S., Kim, M., & McDonough, I. (2018). The effect of cellphones on attention and learning: The influences of time, distraction, and nomophobia. *Computers in Human Behavior, 86,* 52-60. doi:10.1016/j.chb.2018.04.027

Mercer-Lynn, K., Bar, R., & Eastwood, J. (2014). Causes of boredom: The person, the situation, or both? *Personality and Individual Differences, 56,* 122-126.

Mercer-Lynn, K., Flora, D., Fahlman, S., & Eastwood, J. (2013). The measurement of boredom. *Assessment, 20,* 585–596.

Mikulas, W., & Vodanovich, S. (1993). The essence of boredom. *The Psychologicul Record, 43,* 3-12.

Milyavskaya, M., Saffran, M., Hope, N., & Koestner, R. (2018). Fear of missing out: Prevalence, dynamics, and consequences of experiencing FoMO. *Motivation and Emotion, 42(5),* 725-737. doi:10.1007/s11031-018-9683-5

Mir, R., & Akhtar, M. (2020). Effect of nomophobia on the anxiety levels of undergraduate students. *Journal of Pakistan Medical Association, 70(9),* 1492-1497. doi:10.5455/jpma.31286

Miron-Shatz, T., Stone, A., & Kahneman, D. (2009). Memories of yesterday's emotions: Does the valence of experience affect the memory-experience gap? *Emotion, 9(6),* 885-891. doi:10.1037/a0017823

Mitchell, L., & Hussain, Z. (2018). Predictors of problematic smartphone use: An examination of the integrative pathways model and the role of age, gender, impulsiveness, excessive reassurance seeking, extraversion, and depression. *Behavioral sciences, 8(8),* 74-87. doi:10.3390/bs8080074

Mneimne, M., Dashineau, S., & Yoon, K. L. (2019). Mindfulness and negative affectivity in real time: A within-person process model. *Cognition and Emotion, 33(8),* 1687-1701. doi:10.1080/02699931.2019.1597684

Mo, P., Chan, V., Chan, S., & Lau, J. (2018). The role of social support on emotion dysregulation and internet addiction among Chinese adolescents: A structural equation model. *Addictive Behaviors, 82,* 86-93.

Mo, P., & Coulson, N. (2010). Empowering processes in online support groups among people living with HIV/AIDS: A comparative analysis of 'lurkers' and 'posters'. *Computers in Human Behavior, 26(5),* 1183-1193. doi:10.1016/j.chb.2010.03.028

Morris, A. S., Silk, J. S., Steinberg, L., Myers, S. S., & Robinson, L. R. (2007). The role of the family context in the development of emotion regulation. *Social Development, 16(2),* 361-388. doi:10.1111/j.1467-9507.2007.00389.x

Muench, R., & Muench, C. (2020). *Me without my smartphone? Never! Predictors of willingness for smartphone separation and nomophobia*. International Conference on Human-Computer Interaction 2020, Cham.

Muniraj, C. (2014). *A study to assess the effectiveness of psychoeducation on reducing the level of nomophobia among the adults in Sothupakkam at Kanchipuram District* [Master's thesis, The Tamil Nadu Dr. M.G.R. Medical University]. http://repository-tnmgrmu.ac.in/id/eprint/1745

Murdock, K. (2013). Texting while stressed: Implications for students' burnout, sleep, and well-being. *Psychology of Popular Media Culture, 2,* 207. doi:10.1037/ppm0000012

Murray, G. (2007). Diurnal mood variation in depression: A signal of disturbed circadian function? *Journal of Affective Disorders, 102 (1-3),* 47-53.

Musa, N., & Ishak, M. (2021). The phenomenon of Google effect, digital amnesia and nomophobia in academic perspective. *Cyberspace: Jurnal Pendidikan Teknologi Informasi, 5,* 1-15.

Musa, R., Saidon, J., & Rahman, S. A. (2017). Who's at risk for smartphone nomophobia and pathology; the young or matured urban millennials? *Advanced Science Letters, 23,* 7486–7489. doi:10.1166/asl.2017.9504

Müller, K. W., Beutel, M. E., & Wölfling, K. (2014). A contribution to the clinical characterization of internet addiction in a sample of treatment seekers: Validity of assessment, severity of psychopathology and type of co-morbidity. *Comprehensive Psychiatry, 55(4),* 770-777. doi:10.1016/j.comppsych.2014.01.010

Myin-Germeys, I., Delespaul, P. A., & deVries, M. W. (2000). Schizophrenia patients are more emotionally active than is assumed based on their behavior. *Schizophrenia Bulletin, 26(4),* 847-854. doi:10.1093/oxfordjournals.schbul.a033499

Myin-Germeys, I., Kasanova, Z., Vaessen, T., Vachon, H., Kirtley, O., Viechtbauer, W., & Reininghau, U. (2018). Experience sampling methodology in mental health research: New insights and technical developments. *World Psychiatry, 17,* 123-132.

Myin-Germeys, I., Oorschot, M., Collip, D., Latester, J., Delespaul, P., & van Os, J. (2009). Experience sampling research in psychopathology: Opening the black box of daily life. *Psychological Medicine, 39,* 1533–1547.

Myrick, J. G. (2015). Emotion regulation, procrastination, and watching cat videos online: Who watches internet cats, why, and to what effect? *Computers in Human Behavior, 52,* 168-176. doi:10.1016/j.chb.2015.06.001

Nabi, R. L., Prestin, A., & So, J. (2013). Facebook friends with (health) benefits? Exploring social network site use and perceptions of social support, stress, and well-being. *Cyberpsychology, Behavior, and Social Networking, 16(10),* 721-727. doi:10.1089/cyber.2012.0521

Nasab, N., Manshaee, G., & Nadi, M. A. (2021). The effectiveness of nomophobia therapy on self-esteem and nomophobia symptoms in high school students. *Iranian Journal of Psychiatry and Behavioral Sciences, 15(1),* e109291. doi:10.5812/ijpbs.109291

Naslund, J. A., Grande, S. W., Aschbrenner, K. A., & Elwyn, G. (2014). Naturally occurring peer support through social media: The experiences of individuals with severe mental illness using Youtube. *PLOS ONE, 9(10),* e110171.

National institute on drug abuse. (2007). https://www.drugabuse.gov/publications/teaching-packets/neurobiology-drug-addiction/section-iii-action-heroin-morphine/8-definition-dependence

Nesi, J., Choukas-Bradley, S., & Prinstein, M. J. (2018). Transformation of adolescent peer relations in the social media context: Part 2-application to peer group processes and future directions for research. *Clinical Child and Family Psychology Review, 21(3),* 295-319. doi:10.1007/s10567-018-0262-9

Nett, U. E., Goetz, T., & Daniels, L. M. (2010). What to do when feeling bored?: Students' strategies for coping with boredom. *Learning and Individual Differences, 20(6),* 626-638. doi:10.1016/j.lindif.2010.09.004

Nett, U. E., Goetz, T., & Hall, N. C. (2011). Coping with boredom in school: An experience sampling perspective. *Contemporary Educational Psychology, 36(1),* 49-59. doi:10.1016/j.cedpsych.2010.10.003

Neubaum, G., Rösner, L., Rosenthal-von der Pütten, A. M., & Krämer, N. C. (2014). Psychosocial functions of social media usage in a disaster situation: A multi-methodological approach. *Computers in Human Behavior, 34,* 28-38. doi:10.1016/j.chb.2014.01.021

Nezlek, J. B. (2020). Diary studies in social and personality psychology: An introduction with some recommendations and suggestions. *Social Psychological Bulletin, 15,* e2679. doi:10.32872/spb.2679

Nezlek, J. B. (2001). Multilevel random coefficient analyses of event- and interval-contingent data in social and personality psychology research. *Personality and Social Psychology Bulletin, 27(7),* 771-785. doi:10.1177/0146167201277001

Nezlek, J. B. (2007). A multilevel framework for understanding relationships among traits, states, situations and behaviours. *European Journal of Personality, 21(6)*, 789-810.

Nezlek, J. B., Hampton, C. P., & Shean, G. D. (2000). Clinical depression and day-to-day social interaction in a community sample. *Journal of Abnormal Psychology, 109*, 11-19. doi:10.1037/0021-843X.109.1.11

Nezlek, J. B., Vansteelandt, K., Van Mechelen, I., & Kuppens, P. (2008). Appraisal-emotion relationships in daily life. *Emotion, 8(1)*, 145-150. doi:10.1037/1528-3542.8.1.145

Nichols, L. A., & Nicki, R. (2004). Development of a psychometrically sound internet addiction scale: A preliminary step. *Psychology of Addictive Behaviors, 18(4)*, 381-384. doi:10.1037/0893-164x.18.4.381

Nie, J., Wang, P., & Lei, L. (2020). Why can't we be separated from our smartphones? The vital roles of smartphone activity in smartphone separation anxiety. *Computers in Human Behavior, 109*, 106351. doi:10.1016/j.chb.2020.106351

Noë, B., Turner, L., & Whitaker, R. (2019). *Smartphone interaction and survey data as predictors of snapchat usage.* ACM International Joint Conference on Pervasive and Ubiquitous Computing and Proceedings of the 2019 ACM International Symposium on Wearable Computers, London, United Kingdom.

Noë, B., Turner, L., Linden, D., Allen, S., Maio, G., & Whitaker, R. (2017). Timing rather than user traits mediates mood sampling on smartphones. *BMC Research Notes, 10(1)*, 481. doi:10.1186/s13104-017-2808-1

Novak, P. K., Smailovic, J., Sluban, B., & Mozetic, I. (2015). Sentiment of emojis. *PLOS ONE, 10*. doi:10.1371/journal.pone.0144296

Nuri, C., Direktor, C., & Arnavut, A. (2021). The mediation effects of smartphone addiction on relationship between aggression and nomophobia. *World Journal on Educational Technology: Current Issues, 13*, 106-114. doi:10.18844/wjet.v13i1.5403

Nuutinen, T., Roos, E., Ray, C., Villberg, J., Välimaa, R., Rasmussen, M., . . . Tynjälä, J. (2014). Computer use, sleep duration and health symptoms: A cross-sectional study of 15-year olds in three countries. *International Journal of Public Health, 59(4)*, 619-628. doi:10.1007/s00038-014-0561-y

O'Bannon, B. W., & Thomas, K. M. (2015). Mobile phones in the classroom: Preservice teachers answer the call. *Computers & Education, 85*, 110-122. doi:10.1016/j.compedu.2015.02.010

O'Hanlon, J. F. (1981). Boredom: Practical consequences and a theory. *Acta Psychologica, 49(1)*, 53-82. doi:10.1016/0001-6918(81)90033-0

O'Dea, S. (2021). *Number of smartphone users worldwide from 2016 to 2026*. https://www.statista.com/statistics/330695/number-of-smartphone-users-worldwide/

O'Keeffe, G., & Clarke-Pearson, K. (2011). Clinical report-the impact of social media on children, adolescents, and families. *Pediatrics, 127*, 800-804.

Oberst, U., Wegmann, E., Stodt, B., Brand, M., & Chamarro, A. (2017). Negative consequences from heavy social networking in adolescents: The mediating role of fear of missing out. *Journal of Adolescence, 55*, 51-60.

Oftedal, G., Wilén, J., Sandström, M., & Mild, K. H. (2000). Symptoms experienced in connection with mobile phone use. *Occupational Medicine, 50(4)*, 237-245. doi:10.1093/occmed/50.4.237

Okoye, C., Harry, H., & O'bikwelu, H. (2017). Nomophobia among undergraduate: Predictive influence of personality traits. *Practicum Psychologia, 7*, 64-74.

Olivencia-Carrion, M. A., Ferri-Garcia, R., Rueda, M. D. M., Jimenez-Torres, M. G., & Lopez-Torrecillas, F. (2018). Temperament and characteristics related to nomophobia. *Psychiatry Research, 266*, 5-10. doi:10.1016/j.psychres.2018.04.056

Onal, N. (2019). Metaphoric perceptions of high school students about nomophobia. *International Journal of Research in Education and Science, 5*, 437-449.

Opsenica-Kostić, J., Jasmina, N., & Nikola, R. (2020). Smartphone use as a potential moderator between attachment to friends and subjective well-being among high school students. *Journal of Institute for Educational Research, 52*, 379-417. doi:10.2298/ZIPI2002379O

Ortega-Barón, J., González-Cabrera, J., Machimbarrena, J. M., & Montiel, I. (2021). Safety.Net: A pilot study on a multi-risk internet prevention program. *International Journal of Environmental Research and Public Health, 18(8), 4249-4254*. doi:10.3390/ijerph18084249

Oulasvirta, A., Rattenbury, T., Ma, L., & Raita, E. (2012). Habits make smartphone use more pervasive. *Personal and Ubiquitous Computing, 16(1)*, 105-114. doi:10.1007/s00779-011-0412-2

Oz, H. (2018). *Investigation of university students' nomophobia levels between personality types.* [Master's thesis, Istanbul Aydin University].

Oz, H., & Tortop, H. (2018). Investigation of university students' nomophobia levels between personality types, *e-Journal of New Media, 2*, 146-159.

Ozdemir, B., Cakir, O., & Hussain, I. (2018). Prevalence of nomophobia among university students: A comparative study of Pakistani and Turkish undergraduate students. *Eurasia Journal of Mathematics, Science and Technology Education, 14*, 1519-1532.

Ozdemir, H., & Arslan, H. (2019). Behavioral patterns of the modern age addiction: Nomophobia of future managers. *Journal of Social Sciences of Mus Alparslan University 7*, 183-191. doi:10.18506/anemon.463593

Ozturk, E., & Cosanay, B. (2020). The relationship between boredom of preschool teacher candidates and mobile phone deprivations. *The Journal of International Social Research, 13*, 711-720. doi:10.17719/jisr.2020.4128

Pandey, S., & Elliott, W. (2010). Suppressor variables in social work research: Ways to identify in multiple regression models. *Journal of the Society for Social Work and Research, 1(1)*, 28-40. doi:10.5243/jsswr.2010.2

Panger, G. (2017). *Emotion in social media*. [Doctoral dissertation, University of California].

Pani, P. P., Maremmani, I., Trogu, E., Gessa, G. L., Ruiz, P., & Akiskal, H. S. (2010). Delineating the psychic structure of substance abuse and addictions: Should anxiety, mood and impulse-control dysregulation be included? *Journal of Affective Disorders, 122(3)*, 185-197. doi:10.1016/j.jad.2009.06.012

Panova, T., & Lleras, A. (2016). Avoidance or boredom: Negative mental health outcomes associated with use of information and communication technologies depend on users' motivations. *Computers in Human Behavior, 58*, 249-258. doi:10.1016/j.chb.2015.12.062

Parent, N. (2014). *Attachment to mobile phones: An examination of university students' mobile phone use within an attachment theory framework* [Master's Thesis, McGill University].

Park, C. (2019). Examination of smartphone dependence: Functionally and existentially dependent behavior on the smartphone. *Computers in Human Behavior, 93*, 123-128.

Park, N., Kee, K. F., & Valenzuela, S. (2009). Being immersed in social networking environment: Facebook groups, uses and gratifications, and social outcomes. *Cyberpsychology & Behavior, 12(6)*, 729-733. doi:10.1089/cpb.2009.0003

Park, N., Kim, Y.., Shon, H. Y., & Shim, H. (2013). Factors influencing smartphone use and dependency in South Korea. *Computers in Human Behavior, 29(4)*, 1763-1770.

Parkinson, B., Fischer, A., & Manstead, A. (2005). Emotion's place in the social world. In *Emotion in social relations* (pp. 1-24). Psychology Press.

Paterson, T., Yeung, S., & Thornton, W. (2015). Positive affect predicts everyday problem-solving ability in older adults. *Aging & Mental Health, 20*, 871-879.

Pavithra, M., Madhukumar, S., & Mahadeva, M. (2015). A study on nomophobia-mobile phone dependence, among students of a medical college in Bangalore. *National Journal of Community Medicine, 6*, 340-344.

Peeters, F., Berkhof, J., Delespaul, P., Rottenberg, J., & Nicolson, N. A. (2006). Diurnal mood variation in major depressive disorder. *Emotion, 6(3)*, 383-391. doi:10.1037/1528-3542.6.3.383

Peeters, F., Nicolson, N. A., & Berkhof, J. (2004). Levels and variability of daily life cortisol secretion in major depression. *Psychiatry Research, 126(1)*, 1-13. doi:10.1016/j.psychres.2003.12.010

Peeters, F., Nicolson, N. A., Berkhof, J., Delespaul, P., & deVries, M. (2003). Effects of daily events on mood states in major depressive disorder. *Journal of Abnormal Psychology, 112(2)*, 203-211. doi:10.1037/0021-843x.112.2.203

Peng, W., & Liu, M. (2010). Online gaming dependency: A preliminary study in China. *Cyberpsychology, Behavior, and Social Networking, 13(3)*, 329-333. doi:10.1089/cyber.2009.0082

Peterson, C. (2006). *A primer in positive psychology*. Oxford University Press.

Pettorruso, M., Valle, S., Cavic, E., Martinotti, G., di Giannantonio, M., & Grant, J. (2020). Problematic internet use (PIU), personality profiles and emotion dysregulation in a cohort of young adults: Trajectories from risky behaviors to addiction. *Psychiatry Research, 289*, 113036. doi:10.1016/j.psychres.2020.113036

Peugh, J. L., & Heck, R. H. (2016). Conducting three-level longitudinal analyses. *The Journal of Early Adolescence, 37(1)*, 7-58. doi:10.1177/0272431616642329

Phoenix, K. H., Virginia, W. Y., Samuel, W., & Joseph, T. F. (2018). The role of social support on emotion dysregulation and internet addiction among Chinese adolescents: A structural equation model. *Addictive Behaviors, 82*, 86-93. doi:10.1016/j.addbeh.2018.01.027

Pielot, M., Cardoso, B., Katevas, K., Serrà, J., Matic, A., & Oliver, N. (2017). *Beyond interruptibility: Predicting opportune moments to engage mobile phone users*. Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies, doi: 10.1145/3130956

Pielot, M., Church, K., & de Oliveira, R. (2014). *An in-situ study of mobile phone notifications.* 16th international conference on Human-computer interaction with mobile devices & services, Toronto, ON, Canada.

Pielot, M., Dingler, T., Pedro, J., & Oliver, N. (2015). *When attention is not scarce- detecting boredom from mobile phone usage.* International Joint Conference on Pervasive and Ubiquitous Computing, Osaka, Japan.

Pielot, M., & Rello, L. (2015). *The do not disturb challenge-a day without notifications*. ACM SIGCHI Conference on Human Factors in Computing Systems, Seoul Republic of Korea.

Pierce, T. (2009). Social anxiety and technology: Face-to-face communication versus technological communication among teens. *Computers in Human Behavior, 25(6),* 1367-1372. doi:10.1016/j.chb.2009.06.003

Polat, F., Delibas, L., & Bilir, İ. (2021). The relationship between nomophobia level and worry severity in future healthcare professional candidates. *Perspectives in Psychiatric Care*. doi:10.1111/ppc.12792

Pourmohseni-Koluri, F., Jafarian, S., Jafari, I., & Senobar, l. (2020). Investigation the role of personality characteristics and loneliness in predicting nomophobia in students. *Journal of Applied Psychological Research, 11(3),* 69-82. doi:10.22059/japr.2020.292233.643376

Prasad, M., Patthi, B., Singla, A., Gupta, R., Saha, S., Kumar, J. K., . . . Pandita, V. (2017). Nomophobia: A cross-sectional study to assess mobile phone usage among dental students. *Journal of Clinical and Diagnostic Research, 11(2),* 34-39. doi:10.7860/JCDR/2017/20858/9341

Przybylski, A., Murayama, K., DeHaan, C., & Gladwell, V. (2013). Motivational, emotional, and behavioral correlates of fear of missing out. *Computers in Human Behavior, 29,* 1841-1848.

Putnam, K. M., & McSweeney, L. B. (2008). Depressive symptoms and baseline prefrontal eeg alpha activity: A study utilizing ecological momentary assessment. *Biological Psychology, 77(2),* 237-240. doi:10.1016/j.biopsycho.2007.10.010

Quigley, L., & Dobson, K. S. (2017). Behavioral activation treatments for depression. In S. G. Hofmann & G. J. G. Asmundson (Eds.), *The science of cognitive behavioral therapy* (pp. 291-318). Academic Press.

Quittner, A., Modi, A., Lemanek, K., Ievers-Landis, C., & Rapoff, M. (2008). Evidence-based assessment of adherence to medical treatments in pediatric psychology. *Journal of pediatric psychology, 33(9),* 916-938. doi:10.1093/jpepsy/jsm064

Rachman, S., Radomsky, A., & Shafran, R. (2008). Safety behaviour: A reconsideration. *Behaviour Research and Therapy, 46(2),* 163-173. doi:10.1016/j.brat.2007.11.008

Rae, J. R., & Lonborg, S. D. (2015). Do motivations for using Facebook moderate the association between Facebook use and psychological well-being? *Frontiers in Psychology, 6(771)*. doi:10.3389/fpsyg.2015.00771

Randall, W. M., & Rickard, N. S. (2016). Reasons for personal music listening: A mobile experience sampling study of emotional outcomes. *Psychology of Music, 45(4),* 479-495. doi:10.1177/0305735616666939

Ranki, K. (2016). *Escaping boredom - understanding the experiences of the ever increasing contemporary boredom among generation Y consumers.* [Master's thesis, Aalto University].

Rantanen, J., Metsäpelto, R. L., Feldt, T., Pulkkinen, L., & Kokko, K. (2007). Long-term stability in the big five personality traits in adulthood. *Scandinavian Journal of Psychology, 48(6),* 511-518. doi:10.1111/j.1467-9450.2007.00609.x

Raoux, N., Benoit, O., Dantchev, N., Denise, P., Franc, B., Alliale, J., & Widlöcher, D. (1994). Circadian pattern of motor activity in major depressed patients undergoing antidepressant therapy: Relationship between actigraphic measures and clinical course. *Psychiatry Research, 52(1),* 85-98. doi: 10.1016/0165-1781(94)90122-8

Raudenbush, S., Bryk, A., Cheong, Y., Congdon, R., & Toit, M. (2019). *HLM 8 hierarchical linear and nonlinear modeling*. Scientific Software International Inc.

Raudenbush, S., & Bryk, A. S. (2002). *Hierarchical linear models: Applications and data analysis methods*. SAGE.

Raudenbush, S. (2001). Comparing personal trajectories and drawing causal inferences from longitudinal data. *Annual Review of Psychology, 52,* 501-525. doi:10.1146/annurev.psych.52.1.501

Reeve, J. (2018). *Understanding motivation and emotion*. Wiley.

Regan, T., Harris, B., Van Loon, M., Nanavaty, N., Schueler, J., Engler, S., & Fields, S. A. (2020). Does mindfulness reduce the effects of risk factors for problematic smartphone use? Comparing frequency of use versus self-reported addiction. *Addictive Behaviors, 108,* 106435. doi:10.1016/j.addbeh.2020.106435

Reicher, S. D., Spears, R., & Postmes, T. (1995). A social identity model of deindividuation phenomena. *European Review of Social Psychology, 6(1),* 161-198. doi:10.1080/14792779443000049

Reid, D. J., & Reid, F. J. M. (2007). Text or talk? Social anxiety, loneliness, and divergent preferences for cell phone use. *CyberPsychology & Behavior, 10(3),* 424-435. doi:10.1089/cpb.2006.9936

Reis, H., & Gable, S. (2000). Event-sampling and other methods for studying everyday experience. In T. Reis & C. Judd (Eds.), *Handbook of research methods in social and personality psychology* (pp. 190-222). Cambridge University Press.

Rimé, B. (2009). Emotion elicits the social sharing of emotion: Theory and empirical review. *Emotion Review, 1*, 60-85. doi:10.1177/1754073908097189

Riordan, B. C., Cody, L., Flett, J., Conner, T. S., Hunter, J., & Scarf, D. (2020). The development of a single item FoMO (fear of missing out) scale. *Current Psychology, 39(4)*, 1215-1220. doi:10.1007/s12144-018-9824-8

Roberts, J., Pullig, C., & Manolis, C. (2015). I need my smartphone: A hierarchical model of personality and cell-phone addiction. *Personality and Individual Differences, 79*, 13-19.

Robinson, T. E., & Berridge, K. C. (2001). Incentive-sensitization and addiction. *Addiction, 96(1)*, 103-114. doi:10.1046/j.1360-0443.2001.9611038.x

Rodríguez, M., Lozano, J. M., Linares Mingorance, P., & Pérez-Mármol, J. M. (2020). Influence of smartphone use on emotional, cognitive and educational dimensions in university students. *Sustainability, 12(16)*, 6646. doi:10.3390/su12166646

Rodríguez-García, A., Moreno-Guerrero, A., & López Belmonte, J. (2020). Nomophobia: An individual's growing fear of being without a smartphone-a systematic literature review. *International Journal of Environmental Research and Public Health, 17(2)*, 580-599. doi:10.3390/ijerph17020580

Roekel, E., Goossens, L., Verhagen, M., Wouters, S., Engels, R. C. M. E., & Scholte, R. H. J. (2014). Loneliness, affect, and adolescents' appraisals of company: An experience sampling method study. *Journal of Research on Adolescence, 24(2)*, 350-363. doi:10.1111/jora.12061

Roemer, L., Litz, B. T., Orsillo, S. M., & Wagner, A. W. (2001). A preliminary investigation of the role of strategic withholding of emotions in PTSD. *Journal of Traumatic Stress, 14(1)*, 149-156. doi:10.1023/A:1007895817502

Rogers, C. (1959). A theory of therapy, personality and interpersonal relationships, as developed in the client-centered framework. In S. Koch (Ed.), *Psychology: A study of a science* (pp. 184-256). McGraw-Hill.

Roggeveen, S., van Os, J., Bemelmans, K., van Poll, M., & Lousberg, R. (2018). Investigating associations between changes in mobile phone use and emotions using the experience sampling method: Pilot study. *JMIR Formative Research, 2(1)*, e12. doi:10.2196/formative.8499

Rogier, G., & Velotti, P. (2018). Conceptualizing gambling disorder with the process model of emotion regulation. *Journal of Behavioral Addictions, 7(2),* 239-251. doi:10.1556/2006.7.2018.52

Roma, P., Ricci, F., Kotzalidis, G. D., Guidarelli, B., Pancheri, C., Mazza, C., . . . Ferracuti, S. (2019). Psychopathology and personality in problematic internet users. *Rivista di Psichiatria, 54(1),* 24-30. doi:10.1708/3104.30937

Romano, M., Roaro, A., Re, F., Osborne, L. A., Truzoli, R., & Reed, P. (2017). Problematic internet users' skin conductance and anxiety increase after exposure to the internet. *Addictive Behaviors, 75*, 70-74. doi:10.1016/j.addbeh.2017.07.003

Rosen, L. D., Whaling, K., Rab, S., Carrier, L. M., & Cheever, N. A. (2013). Is Facebook creating "idisorders"? The link between clinical symptoms of psychiatric disorders and technology use, attitudes and anxiety. *Computers in Human Behavior, 29(3),* 1243-1254. doi:10.1016/j.chb.2012.11.012

Rothen, S., Briefer, J.-F., Deleuze, J., Karila, L., Andreassen, C. S., Achab, S., . . . Billieux, J. (2018). Disentangling the role of users' preferences and impulsivity traits in problematic Facebook use. *PLOS ONE, 13(9),* e0201971.

Roxas, A. S., & Glenwick, D. S. (2014). The relationship of psychological mindedness and general coping to psychological adjustment and distress in high-school adolescents. *Individual Differences Research, 12,* 38-49.

Rubin, A. (2009). Uses and gratifications. In R. Nabi & M. Oliver (Eds.), *The SAGE handbook of media processes and effects* (pp. 147-158). SAGE.

Rubin, A. M. (1984). Ritualized and instrumental television viewing. *Journal of Communication, 34(3),* 67-77. doi:10.1111/j.1460-2466.1984.tb02174.x

Rugancı, R., & Gencoz, T. (2010). Psychometric properties of a Turkish version of the difficulties in emotion regulation scale. *Journal of Clinical Psychology, 66,* 442-455.

Ruscitti, C., Rufino, K., Goodwin, N., & Wagner, R. (2016). Difficulties in emotion regulation in patients with eating disorders. *Borderline Personality Disorder and Emotion Dysregulation, 3,* 1-7. doi:10.1186/s40479-016-0037-1

Russell, J. (2003). Core affect and the psychological construction of emotion. *Psychological Review, 110,* 145-172.

Russell, J. J., Moskowitz, D. S., Zuroff, D. C., Sookman, D., & Paris, J. (2007). Stability and variability of affective experience and interpersonal behavior in borderline personality disorder. *Journal of Abnormal Psychology, 116(3),* 578-588. doi:10.1037/0021-843x.116.3.578

Ryan, T., & Xenos, S. (2011). Who uses Facebook? An investigation into the relationship between the big five, shyness, narcissism, loneliness, and Facebook usage. *Computers in Human Behavior, 27(5),* 1658-1664. doi:10.1016/j.chb.2011.02.004

Sachdeva, C., Arora, D., Arora, J., & Chauhan, Y. (2018). Nomophobia and its effect on work and social life adjustment. *The Learning Curve, 7*, 48-51.

Sahin, M., & Bulbuloglu, S. (2021). The effects of nomophobic behavior of university students on their intellectual thinking tendency. *African Educational Research Journal, 9,* 197-204. doi:10.30918/AERJ.91.21.032

Sahin, N. H., & Durak, A. (1994). A study of the Brief symptom inventory in Turkish youth. *Turkish Journal of Psychology, 9*, 44-56.

Sakiroglu, M. (2019). The effect of self control and emotion regulation difficulties on the problematic smart phone use of young people. *International Journal of Curriculum and Instructional Studies, 9*. doi: 10.31704/ijocis.2019.013

Saling, L. L., & Haire, M. (2016). Are you awake? Mobile phone use after lights out. *Computers in Human Behavior, 64,* 932-937. doi:10.1016/j.chb.2016.08.006

Salisbury, J. (2010). *Internet overuse and personality: A look at the big five, BIS/BAS, loneliness, and boredom.* [Master's thesis, North Western University]. https://mmss.wcas.northwestern.edu/thesis/articles/get/719/Salisbury2010-0.pdf

Salovey, P., Stroud, L. R., Woolery, A., & Epel, E. S. (2002). Perceived emotional intelligence, stress reactivity, and symptom reports: Further explorations using the trait meta-mood scale. *Psychology & Health, 17*, 611-627.

Samaha, M., & Hawi, N. S. (2016). Relationships among smartphone addiction, stress, academic performance, and satisfaction with life. *Computers in Human Behavior, 57,* 321-325. doi:10.1016/j.chb.2015.12.045

Sandstrom, G. M., Lathia, N., Mascolo, C., & Rentfrow, P. J. (2017). Putting mood in context: Using smartphones to examine how people feel in different locations. *Journal of Research in Personality, 69*, 96-101.

Sandström, M., Wilen, J., Oftedal, G., & Hansson Mild, K. (2001). Mobile phone use and subjective symptoms. Comparison of symptoms experienced by users of analogue and digital mobile phones. *Occupational Medicine, 51(1),* 25-35. doi:10.1093/occmed/51.1.25

Sanford, K., & Rowatt, W. C. (2004). When is negative emotion positive for relationships? An investigation of married couples and roommates. *Personal Relationships, 11(3),* 329-354. doi:10.1111/j.1475-6811.2004.00086.x

Sanyal, N., Fernandes, T., & Jain, A. (2015). Leisure boredom, loneliness and self-control in women Candy crush gamers. *International Journal of Science and Research, 6(14)*, 2319-7064.

Sapacz, M., Rockman, G., & Clark, J. (2016). Are we addicted to our cell phones? *Computers in Human Behavior, 57*, 153-159. doi:10.1016/j.chb.2015.12.004

Sarsenbayeva, Z., Marini, G., Berkel, N. V., Luo, C., Jiang, W., Yang, K., . . . GonÁalves, J. (2020). *Does smartphone use drive our emotions or vice versa? A causal analysis*. Conference on Human Factors in Computing Systems, Honolulu, HI, USA.

Satici, B., & Deniz, M. (2020). Modeling emotion regulation and subjective happiness: Smartphone addiction as a mediator. *Addicta: The Turkish Journal on Addictions, 7*, 146-152.

Satici, S. A. (2019). Facebook addiction and subjective well-being: A study of the mediating role of shyness and loneliness. *International Journal of Mental Health and Addiction, 17(1)*, 41-55. doi:10.1007/s11469-017-9862-8

Savci, M., & Aysan, F. (2016). The role of attachment styles, peer relations, and affections in predicting internet addiction. *Addicta: The Turkish Journal on Addictions, 3*, 416–432. doi:DOI 10.15805/addicta.2016.3.0028

Savci, M., Ercengiz, M., & Aysan, F. (2018). Turkish adaptation of the Social media disorder scale in adolescents. *Archives of Neuropsychiatry, 55*, 248−255. doi:DOI: 10.5152/npa.2017.19285

Schatten, H., Allen, K., & Armey, M. (2019). Assessment of emotion dysregulation using ecological momentary assessment. In T. Beauchaine & S. Crowell (Eds.), *The Oxford Handbook of Emotion Dysregulation*.

Schimmack, U. (2003). Affect measurement in experience sampling research. *Journal of Happiness Studies, 4(1)*, 79-106. doi:10.1023/A:1023661322862

Schivinski, B., Brzozowska-Woś, M., Stansbury, E., Satel, J., Montag, C., & Pontes, H. M. (2020). Exploring the role of social media use motives, psychological well-being, self-esteem, and affect in problematic social media use. *Frontiers in Psychology, 11(3576)*. doi:10.3389/fpsyg.2020.617140

Schroeter, R., Oxtoby, J., Johnson, D., & Steinberger, F. (2015). *Exploring boredom proneness as a predictor of mobile phone use in the car*. Proceedings of the Annual Meeting of the Australian Special Interest Group for Computer Human Interaction, Parkville, VIC, Australia. doi:10.1145/2838739.2838783

Schutz, P., Quijada, P., Vries, S., & Lynde, M. (2010). Emotion in educational contexts. In P. Peterson, E. Baker, & B. McGaw (Eds.), *International Encyclopedia of Education* (pp. 591-596). Elsevier Science.

Schwartz, J. E., Neale, J., Marco, C., Shiffman, S. S., & Stone, A. A. (1999). Does trait coping exist? A momentary assessment approach to the evaluation of traits. *Journal of Personality & Social Psychology, 77(2),* 360-369. doi:10.1037//0022-3514.77.2.360

Securenvoy. (2012). *66% of the population suffer from nomophobia the fear of being without their phone*. https://www.securenvoy.com/en-gb/blog/66-population-suffer-nomophobia-fear-being-without-their-phone

Segal, Z., Williams, J., & Teasdale, J. (2002). *Mindfulness-based cognitive therapy for depression: A new approach to preventing relapse*. Guilford.

Semerci, A. (2019). Nomophobia as the predictor of secondary school students' smartphone addiction. *8*, 947-965. doi:10.14686/buefad.592443

Sertbas, K., Cutuk, S., Soyer, F., Akkus, C., & Aydogan, R. (2020). Mediating role of emotion regulation difficulties in the relationship between social anxiety and problematic internet use. *Psihologija, 53*, 291-305. doi:10.2298/PSI190730013S

Sethia, S., Melwani, V., Melwani, S., Priya, A., Gupta, M., & Khan, A. (2018). A study to assess the degree of nomophobia among the undergraduate students of a medical college in Bhopal. *International Journal of Community Medicine and Public Health, 5*, 2442-2445.

Shankar, V., Singh, K., & Jangir, M. (2018). Nomophobia: Detection and analysis of smartphone addiction in Indian perspective. *International Journal of Applied Engineering Research, 13*, 11593-11599.

Sharma , N., Sharma , P., Sharma , N., & Wavare, R. (2015). Rising concern of nomophobia amongst Indian medical students. *International Journal of Research in Medical Sciences, 3*, 705-707.

Shaw, S. M., Caldwell, L. L., & Kleiber, D. A. (1996). Boredom, stress and social control in the daily activities of adolescents. *Journal of Leisure Research, 28*, 274-292.

Sheppes, G., Scheibe, S., Suri, G., & Gross, J. J. (2011). Emotion-regulation choice. *Psychological Science, 22(11)*, 1391-1396. doi:10.1177/0956797611418350

Shmueli, G. (2010). To explain or to predict? *Statistical Science, 25*, 289-310. doi:10.1214/10-STS330

Shwetak, N., Julie, A., Gillian, R., Sooraj, B., & Gregory, D. (2006). *Farther than you may think: An empirical investigation of the proximity of users to their mobile phones*. UbiComp 2006: Ubiquitous Computing, Berlin, Heidelberg.

Silk, J. S., Dahl, R. E., Ryan, N. D., Forbes, E. E., Axelson, D. A., Birmaher, B., & Siegle, G. J. (2007). Pupillary reactivity to emotional information in child and adolescent

depression: Links to clinical and ecological measures. *American Journal of Psychiatry, 164(12),* 1873-1880. doi:10.1176/appi.ajp.2007.06111816

Silk, J. S., Forbes, E. E., Whalen, D. J., Jakubcak, J. L., Thompson, W. K., Ryan, N. D., . . . Dahl, R. E. (2011). Daily emotional dynamics in depressed youth: A cell phone ecological momentary assessment study. *Journal of Experimental Child Psychology, 110(2),* 241-257. doi:10.1016/j.jecp.2010.10.007

Silk, J. S., Steinberg, L., & Morris, A. S. (2003). Adolescents' emotion regulation in daily life: Links to depressive symptoms and problem behavior. *Child Development, 74(6),* 1869-1880. doi:10.1046/j.1467-8624.2003.00643.x

Simons, C. J., Wichers, M., Derom, C., Thiery, E., Myin-Germeys, I., Krabbendam, L., & van Os, J. (2009). Subtle gene-environment interactions driving paranoia in daily life. *Genes, Brain and Behavior, 8(1),* 5-12. doi:10.1111/j.1601-183X.2008.00434.x

Singer, J. D., & Willett, J. B. (2003). *Applied longitudinal data analysis: Modeling change and event occurrence*. Oxford University Press.

Siomos, K., Floros, G., Makris, E., Christou, G., & Hadjulis, M. (2014). Internet addiction and psychopathology in a community before and during an economic crisis. *Epidemiology and Psychiatric Sciences, 23(3),* 301-310.

Sirakaya, M. (2018). Examination of associate students' nomophobia levels according to smart phone use. *Mersin University Journal of the Faculty of Education, 14,* 714-727.

Skues, J., Williams, B., Oldmeadow, J., & Wise, L. (2016). The effects of boredom, loneliness, and distress tolerance on problem internet use among university students. *International Journal of Mental Health and Addiction, 14(2),* 167-180. doi:10.1007/s11469-015-9568-8

Slaih, M., Khader, Y., Amarneh, B., Alyahya, M., & Al-Adwan, N. (2019). Patterns of smartphone use among university students in Jordan. *The Arab Journal of Psychiatry, 30(1)*. doi:10.12816/0052936

Smith, A. (2011). *Americans and their cell phones*. Pew Research Center. https://www.pewresearch.org/internet/2011/08/15/americans-and-their-cell-phones/

Smith, A. (2015). *US smartphone use in 2015*. Pew Research Center. https://www.pewresearch.org/internet/2015/04/01/us-smartphone-use-in-2015/

Smith, C. A., & Lazarus, R. S. (1993). Appraisal components, core relational themes, and the emotions. *Cognition and Emotion, 7,* 233-269. doi:10.1080/02699939308409189

Smyth, J., Wonderlich, S., Crosby, R., Miltenberger, R., Mitchell, J., & Rorty, M. (2001). The use of ecological momentary assessment approaches in eating disorder research. *International Journal of Eating Disorders, 30(1),* 83-95. doi:10.1002/eat.1057

Snijders, T., & Bosker, R. (1999). *Multilevel analysis: An introduction to basic and advanced multilevel modeling*. SAGE.

Sommers, J., & Vodanovich, S. J. (2000). Boredom proneness: Its relationship to psychological- and physical-health symptoms. *Journal of Clinical Psychology, 56(1),* 149-155.

Souza, K., Ximenes, C., & Santiago, E. (2020). Girassol: A mobile app to measure levels of nomophobia in adolescents and young people. *Global Journal of Computer Science and Technology, 20,* 32-45.

Spencer, A. (2019). Generation Z goes to college. *Growth: The Journal of the Association for Christians in Student Development, 18*, 118-121.

Squires, L. R., Hollett, K. B., Hesson, J., & Harris, N. (2020). Psychological distress, emotion dysregulation, and coping behaviour: A theoretical perspective of problematic smartphone use. *International Journal of Mental Health and Addiction,* 19, 1284–1299 doi:10.1007/s11469-020-00224-0

Srivastava, S., Tamir, M., McGonigal, K. M., John, O. P., & Gross, J. J. (2009). The social costs of emotional suppression: A prospective study of the transition to college. *Journal of Personality and Social Psychology, 96(4),* 883-897. doi:10.1037/a0014755

Statista. (2015). *Share of facebook users worldwide who accessed facebook via mobile from 2013 to 2018*. https://www.statista.com/statistics/380550/share-of-global-mobile-facebook-users/

Stavropoulos, V., Kuss, D. J., Griffiths, M. D., Wilson, P., & Motti-Stefanidi, F. (2017). MMORPG gaming and hostility predict internet addiction symptoms in adolescents: An empirical multilevel longitudinal study. *Addictive Behaviors, 64*, 294-300. doi:10.1016/j.addbeh.2015.09.001

Steiger, H., Gauvin, L., Jabalpurwala, S., Seguin, J. R., & Stotland, S. (1999). Hypersensitivity to social interactions in bulimic syndromes: Relationship to binge eating. *Journal of Consulting and Clinical Psychology, 67(5),* 765-775. doi:10.1037//0022-006x.67.5.765

Stein, K. (1996). Affect instability in adults with a borderline personality disorder. *Archives of Psychiatric Nursing, 10(1),* 32-40. doi:10.1016/S0883-9417(96)80084-7

Stein, K., & Corte, C. (2003). Ecologic momentary assessment of eating-disordered behaviors. *International Journal of Eating Disorders, 34(3),* 349-360. doi:10.1002/eat.10194

Steinberg, L. (2005). Cognitive and affective development in adolescence. *Trends in Cognitive Sciences, 9(2),* 69-74. doi:10.1016/j.tics.2004.12.005

Stephen, J., Vodanovich, K., Verner, K., & Gilbride, T. (1991). Boredom proneness: Its relationship to positive and negative affect. *Psychological Reports, 69,* 1139-1146.

Steptoe, A., Gibson, E. L., Hamer, M., & Wardle, J. (2007). Neuroendocrine and cardiovascular correlates of positive affect measured by ecological momentary assessment and by questionnaire. *Psychoneuroendocrinology, 32(1),* 56-64. doi:10.1016/j.psyneuen.2006.10.001

Stetler, C., Dickerson, S. S., & Miller, G. E. (2004). Uncoupling of social zeitgebers and diurnal cortisol secretion in clinical depression. *Psychoneuroendocrinology, 29(10),* 1250-1259. doi:10.1016/j.psyneuen.2004.03.003

Stetler, C., & Miller, G. E. (2005). Blunted cortisol response to awakening in mild to moderate depression: Regulatory influences of sleep patterns and social contacts. *Journal of Abnormal Psychology, 114(4),* 697-705. doi:10.1037/0021-843x.114.4.697

Stieger, S., & Lewetz, D. (2018). A week without using social media: Results from an ecological momentary intervention study using smartphones. *Cyberpsychology, Behavior, and Social Networking, 21(10),* 618-624. doi:10.1089/cyber.2018.0070

Stockdale, L. A., & Coyne, S. M. (2020). Bored and online: Reasons for using social media, problematic social networking site use, and behavioral outcomes across the transition from adolescence to emerging adulthood. *Journal of Adolescence, 79,* 173-183. doi:10.1016/j.adolescence.2020.01.010

Stone, A. A., & Broderick, J. E. (2007). Real-time data collection for pain: Appraisal and current status. *Pain Medicine, 8,* 85-93. doi:10.1111/j.1526-4637.2007.00372.x

Stone, A. A., Greenberg, M. A., Kennedy-Moore, E., & Newman, M. G. (1991). Self-report, situation-specific coping questionnaires: What are they measuring? *Journal of Personality & Social Psychology, 61(4),* 648-658. doi:10.1037//0022-3514.61.4.648

Stone, A. A., Shiffman, S., Schwartz, J. E., Broderick, J. E., & Hufford, M. R. (2002). Patient non-compliance with paper diaries. *BMJ, 324(7347),* 1193-1194.

Struk, A., Scholer, A., & Danckert, J. (2016). A self-regulatory approach to understanding boredom proneness. *Cognition and Emotion, 30,* 1388-1401.

Struk, A., Carriere, J. S. A., Cheyne, J. A., & Danckert, J. (2015). A short boredom proneness scale: Development and psychometric properties. *Assessment, 24(3)*, 346-359. doi:10.1177/1073191115609996

Sujan, M., Bettman, J. R., & Baumgartner, H. (1993). Influencing consumer judgments using autobiographical memories: A self-referencing perspective. *Journal of Marketing Research, 30(4)*, 422-436. doi:10.1177/002224379303000403

Suler, J. (2004). The online disinhibition effect. *CyberPsychology & Behavior, 7(3)*, 321-326. doi:10.1089/1094931041291295

Sumuer, E., Gezgin, D., & Yildirim, S. (2018). An investigation of the factors affecting college students' mobile phone use for non-instructional purposes in the class. *Sakarya University Journal of Education, 8*, 7-19.

Sun, J., Liu, Q., & Yu, S. (2019). Child neglect, psychological abuse and smartphone addiction among Chinese adolescents: The roles of emotional intelligence and coping style. *Computers in Human Behavior, 90*, 74-83. doi:10.1016/j.chb.2018.08.032

Sureka, V., Abeetha, S., Suma, S., Sadhana, S., Brinda, N., Bhagyashree, N., . . . Ganesh, M. (2021). Prevalence of nomophobia and its association with stress, anxiety and depression among students. *Biomedicine, 40(4)*, 522-525. doi:10.51248/.v40i4.333

PIELSurvey. (2019). *Piel survey*. https://pielsurvey.org/

Swinkels, A., & Giuliano, T. A. (1995). The measurement and conceptualization of mood awareness: Monitoring and labeling one's mood states. *Personality and Social Psychology Bulletin, 21(9)*, 934-949. doi:10.1177/0146167295219008

Tabachnick, B., & Fidell, L. (2007). *Using multivariate statistics* (5th ed.). Allyn & Bacon/Pearson Education.

Takao, M., Takahashi, S., & Kitamura, M. (2009). Addictive personality and problematic mobile phone use. *Cyberpsychology & Behavior, 12*, 1-8.

Tams, S., Legoux, R., & Léger, P.-M. (2018). Smartphone withdrawal creates stress: A moderated mediation model of nomophobia, social threat, and phone withdrawal context. *Computers in Human Behavior, 81*, 1-9. doi:10.1016/j.chb.2017.11.026

Tandoc, E. C., Ferrucci, P., & Duffy, M. (2015). Facebook use, envy, and depression among college students: Is Facebooking depressing? *Computers in Human Behavior, 43*, 139-146. doi:10.1016/j.chb.2014.10.053

Tankovska, H. (2021a). *Online communication change during Covid-19 in US. 2020*. Statista. https://www.statista.com/statistics/1230762/online-communication-change-during-covid-19-in-us/

Tankovska, H. (2021b). *Most popular global mobile messenger apps as of January 2021, based on number of monthly active users*. Statista. https://www.statista.com/statistics/258749/most-popular-global-mobile-messenger-apps/

Tankovska, H. (2021c). *Social media platforms used by adults in the United States during the Coronavirus outbreak as of March 2020.* Statista. https://www.Statista.Com/statistics/1112995/social-media-platforms-usa-coronavirus/.

Tavakolizadeh, J., Atarodi, A., Ahmadpour, S., & Pourgheisar, A. (2014). The prevalence of excessive mobile phone use and its relation with mental health status and demographic factors among the students of Gonabad University of Medical Sciences in 2011-2012. *Razavi International Journal of Medicine, 2*, 1-7. doi:10.5812/rijm.15527

Tavolacci , M., Meyrignac, G., Richard, L., Dechelotte, P., & Lander, J. (2015). Problematic use of mobile phone and nomophobia among French college students: Marie-pierre Tavolacci. *The European Journal of Public Health, 25*, 175-182.

Thayer, R. E., Newman, J. R., & McClain, T. M. (1994). Self-regulation of mood: Strategies for changing a bad mood, raising energy, and reducing tension. *Journal of Personality and Social Psychology, 67(5)*, 910-925. doi:10.1037//0022-3514.67.5.910

Thewissen, V., Bentall, R., Oorschot, M., Campo, J., Lierop, T., Os, J., & Myin-Germeys, I. (2011). Emotions, self-esteem, and paranoid episodes: An experience sampling study. *British Journal of Clinical Psychology, 50*, 178-195.

Thomas, D. L., & Diener, E. (1990). Memory accuracy in the recall of emotions. *Journal of Personality and Social Psychology, 59(2)*, 291-297. doi:10.1037/0022-3514.59.2.291

Thomas, V., Carr, B., Azmitia, M., & Whittaker, S. (2020). Alone and online: Understanding the relationships between social media, solitude, and psychological adjustment. *Psychology of Popular Media*. doi:10.1037/ppm0000287

Thompson, R. (1994). Emotion regulation: A theme in search of definition. *Monographs of the Society for Research in Child Development, 59(2/3)*, 25-52. doi:10.2307/1166137

Throuvala, M. A., Griffiths, M. D., Rennoldson, M., & Kuss, D. J. (2019). A 'control model' of social media engagement in adolescence: A grounded theory analysis. *International Journal of Environmental Research and Public Health, 16(23)*, 4696-4704. doi:10.3390/ijerph16234696

Tice, D. M., Bratslavsky, E., & Baumeister, R. F. (2001). Emotional distress regulation takes precedence over impulse control: If you feel bad, do it! *Journal of Personality and Social Psychology, 80(1),* 53-67.

Tifferet, S. (2020). Gender differences in social support on social network sites: A meta-analysis. *Cyberpsychology, Behavior, and Social Networking, 23(4),* 199-209. doi:10.1089/cyber.2019.0516

Toda, M., Ezoe, S., & Takeshita, T. (2014). Mobile phone use and stress-coping strategies of medical students. *International Journal of Cyber Behavior, Psychology and Learning, 4(4),* 41-46. doi:10.4018/ijcbpl.2014100104

Todman, M. (2013). The dimensions of state boredom frequency duration unpleasantness consequences and causal attributions. *International Journal of Educational Research, 1(1),* 32-40.

Tolor, A. (1989). Boredom as related to alienation, assertiveness, internal-external expectancy, and sleep patterns. *Journal of Clinical Psychology, 45(2),* 260-265. doi:10.1002/1097-4679(198903)45:2<260::AID-JCLP2270450213>3.0.CO;2-G

Tomko, R. L., Solhan, M. B., Carpenter, R. W., Brown, W. C., Jahng, S., Wood, P. K., & Trull, T. J. (2014). Measuring impulsivity in daily life: The momentary impulsivity scale. *Psychological Assessment, 26(2),* 339-349. doi:10.1037/a0035083

Tong, E. M. W., Bishop, G. D., Enkelmann, H. C., Why, Y. P., Diong, S. M., Khader, M., & Ang, J. (2005). The use of ecological momentary assessment to test appraisal theories of emotion. *Emotion, 5(4),* 508-512. doi:10.1037/1528-3542.5.4.508

Tonioni, F., D'Alessandris, L., Lai, C., Martinelli, D., Corvino, S., Vasale, M., . . . Bria, P. (2012). Internet addiction: Hours spent online, behaviors and psychological symptoms. *General Hospital Psychiatry, 34(1),* 80-87.

Torous, J., Friedman, R., & Keshavan, M. (2014). Smartphone ownership and interest in mobile applications to monitor symptoms of mental health conditions. *JMIR Mhealth Uhealth, 2(1),* e2. doi:10.2196/mhealth.2994

Torpil, B., Unsal, E., Yildiz, E., & Pekcetin, S. (2020). Relationship between nomophobia and occupational performance among university students. *British Journal of Occupational Therapy, 84(7),* 441-445. doi:10.1177/0308022620950984

Tran, D. (2016). Classifying nomophobia as smart-phone addiction disorder. *UC Merced Undergraduate Research Journal, 9,* 1-22.

Trub, L., & Barbot, B. (2016). The paradox of phone attachment: Development and validation of the Young adult attachment to phone scale (YAPS). *Computers in Human Behavior, 64,* 663-672.

Trull, T., & Ebner-Priemer, U. (2009). Using experience sampling methods/ecological momentary assessment (ESM/EMA) in clinical assessment and clinical research: Introduction to the special section. *Psychological Assessment, 21*, 457-462.

Trull, T., Solhan, M. B., Tragesser, S. L., Jahng, S., Wood, P. K., Piasecki, T. M., & Watson, D. (2008). Affective instability: Measuring a core feature of borderline personality disorder with ecological momentary assessment. *Journal of Abnormal Psychology, 117(3),* 647-661. doi:10.1037/a0012532

Tull, M., Stipelman, B. A., Salters-Pedneault, K., & Gratz, K. L. (2009). An examination of recent non-clinical panic attacks, panic disorder, anxiety sensitivity, and emotion regulation difficulties in the prediction of generalized anxiety disorder in an analogue sample. *Journal of Anxiety Disorders, 23(2),* 275-282.

Turgeman, L., Hefner, I., Bazon, M., Yehoshua, O., & Weinstein, A. (2020). Studies on the relationship between social anxiety and excessive smartphone use and on the effects of abstinence and sensation seeking on excessive smartphone use. *International Journal of Environmental Research and Public Health, 17(4),* 1262-1273. doi:10.3390/ijerph17041262

Turkish Statistical Institute (TSI). (2018). *Number of fixed telephone, mobile telephone and internet subscribers*. http://www.tuik.gov.tr/VeriBilgi.do?alt_id=1062

Turkish Statistical Institute (TSI). (2020). *Proportion of individuals using mobile phone in the last 3 months by age groups, sex, education level and employment status*. https://data.tuik.gov.tr/Kategori/GetKategori?p=bilgi-teknolojileri-ve-bilgi-toplumu-102&dil=1

Turner, M., Love, S., & Howell, M. (2008). Understanding emotions experienced when using a mobile phone in public: The social usability of mobile (cellular) telephones. *Telematics and Informatics, 25,* 201-215.

Uguz, G., & Bacaksiz, F. (2021). Relationships between personality traits and nomophobia: Research on nurses working in public hospitals. *Perspectives in Psychiatric Care,* 1-9. doi:10.1111/ppc.12834

Uink, B. N., Modecki, K. L., & Barber, B. L. (2016). Disadvantaged youth report less negative emotion to minor stressors when with peers: An experience sampling study. *International Journal of Behavioral Development, 43(3),* 41-51. doi:10.1177/0165025416626516

Ustundag, A. (2020). Children's social media usage and the effects of social media on children's moods. *International Journal of Contemporary Educational Studies, 6,* 286-302.

Uzun, O., Yildirim, V., & Uzun, E. (2016). Habit of using social media and correlation of social media addiction, self esteem, perceived social support in adolescent with

attention deficit hyperactivity disorder. *Turkish Journal of Family Medicine and Primary Care, 10*, 142-147.

Vahedi, Z., & Saiphoo, A. (2018). The association between smartphone use, stress, and anxiety: A meta-analytic review. *Stress and Health, 34(3)*, 347-358. doi:10.1002/smi.2805

van Deursen, A.., Bolle, C., Hegner, S., & Kommers, P. (2015). Modeling habitual and addictive smartphone behavior: The role of smartphone usage types, emotional intelligence, social stress, self-regulation, age, and gender. *Computers in Human Behavior, 45*, 411-420. doi:10.1016/j.chb.2014.12.039

van Koningsbruggen, G. M., Hartmann, T., Eden, A., & Veling, H. (2017). Spontaneous hedonic reactions to social media cues. *Cyberpsychology, Behavior, and Social Networking, 20(5)*, 334-340. doi:10.1089/cyber.2016.0530

van Tilburg, W. A. P., & Igou, E. R. (2012). On boredom: Lack of challenge and meaning as distinct boredom experiences. *Motivation and Emotion, 36(2)*, 181-194. doi:10.1007/s11031-011-9234-9

van Uden-Kraan, C. F., Drossaert, C. H., Taal, E., Seydel, E. R., & van de Laar, M. (2008). Self-reported differences in empowerment between lurkers and posters in online patient support groups. *Journal of Medical Internet Research, 10(2)*, e18. doi:10.2196/jmir.992

VandenBos, G. (2006). *APA dictionary of psychology*. American Psychological Association.

Veerapu, N., Baer Philip, R. K., Vasireddy, H., Gurrala, S., & Kanna, S. T. (2019). A study on nomophobia and its correlation with sleeping difficulty and anxiety among medical students in a medical college, Telangana. *International Journal of Community Medicine and Public Health, 6(5)*, 2074-2076. doi:10.18203/2394-6040.ijcmph20191821

Verduyn, P., Delvaux, E., Van Coillie, H., Tuerlinckx, F., & Van Mechelen, I. (2009). Predicting the duration of emotional experience: Two experience sampling studies. *Emotion, 9(1)*, 83-91. doi:10.1037/a0014610

Verduyn, P., Lee, D. S., Park, J., Shablack, H., Orvell, A., Bayer, J., . . . Kross, E. (2015). Passive Facebook usage undermines affective well-being: Experimental and longitudinal evidence. *Journal of Experimental Psychology: General, 144(2)*, 480-488. doi:10.1037/xge0000057

Verhagen, S. J., Hasmi, L., Drukker, M., van Os, J., & Delespaul, P. A. (2016). Use of the experience sampling method in the context of clinical trials. *Evidence-Based Mental Health, 19(3)*, 86-89. doi:10.1136/ebmental-2016-102418

Vernon, L., Modecki, K. L., & Barber, B. L. (2017). Tracking effects of problematic social networking on adolescent psychopathology: The mediating role of sleep disruptions. *Journal of Clinical Child and Adolescent Psychology, 46(2),* 269-283. doi:10.1080/15374416.2016.1188702

Vezzoli, M., Colombo, A., Marano, A., Zoccatelli, G., & Zogmaister, C. (2021). Test for mobile phone dependence: Psychometric properties and confirmatory factor analysis. *Current Psychology*. doi:10.1007/s12144-021-01449-5

Vidyachathoth, K., Kumar, N. A., & Pai, S. R. (2014). Correlation between affect and internet addiction in undergraduate medical students in Mangalore. *Journal of Addiction Research & Therapy, 5*. 175-179

Villani, D., Carissoli, C., Triberti, S., Marchetti, A., Gilli, G., & Riva, G. (2018). Videogames for emotion regulation: A systematic review. *Games for Health Journal, 7(2),* 85-99. doi:10.1089/g4h.2017.0108

Villanueva, J., Meyer, A. H., Miché, M., Wersebe, H., Mikoteit, T., Hoyer, J., . . . Gloster, A. T. (2020). Social interaction in major depressive disorder, social phobia, and controls: The importance of affect. *Journal of Technology in Behavioral Science, 5(2),* 139-148. doi:10.1007/s41347-019-00121-x

Villar, L., Grau, J., & Colet, A. (2017). Exploratory investigation of theoretical predictors of nomophobia using the Mobile phone involvement questionnaire (MPIQ). *Journal of Adolescence, 56,* 127-135.

Vincent, J. (2011). Emotion and the mobile phone. In H. Greif, L. Hjorth, A. Lasén, & C. Lobet-Maris (Eds.), *COST* (pp. 95-110). European Cooperation in the Field of Scientific and Technical Research.

Vincent, J., Haddon, L., & Hamill, L. (2005). The influence of mobile phone users on the design of 3G products and services. *Journal of the Communications Network, 4,* 69-73.

Vodanovich, S., & Kass, S. (1990). A factor analytic study of the Boredom proneness scale. *Journal of Personality Assessment, 55(1-2),* 115-123.

Vorderer, P., Krömer, N., & Schneider, F. M. (2016). Permanently online-permanently connected: Explorations into university students' use of social media and mobile smart devices. *Computers in Human Behavior, 63,* 694-703. doi:10.1016/j.chb.2016.05.085

Wac, K., Ickin, S., Hong, J., Janowski, L., Fiedler, M., & Dey, A. (2011). *Studying the experience of mobile applications used in different contexts of daily life*. The first ACM SIGCOMM workshop on Measurements up the stack, Toronto, Canada.

Wallace, L., James, T. L., & Warkentin, M. (2017). How do you feel about your friends? Understanding situational envy in online social networks. *Information & Management, 54(5),* 669-682. doi:10.1016/j.im.2016.12.010

Walsh, S., White, K., & Young, R. (2010). Needing to connect: The effect of self and others on young people's involvement with their mobile phones. *Australian Journal of Psychology, 62*, 194-203.

Walsh, S., & White, K. (2007). Me, my mobile, and I: The role of self- and prototypical identity influences in the prediction of mobile phone behavior. *Journal of Applied Social Psychology, 37(10),* 2405-2434. doi:10.1111/j.1559-1816.2007.00264.x

Walsh, S., White, K. , & Young, R. (2009). The phone connection: A qualitative exploration of how belongingness and social identification relate to mobile phone use amongst australian youth. *Journal of Community & Applied Social Psychology, 19(3)*, 225-240. doi:10.1002/casp.983

Wan, C. S., & Chiou, W. B. (2006). Why are adolescents addicted to online gaming? An interview study in Taiwan. *Cyberpsycholgy & Behavior, 9(6),* 762-766. doi:10.1089/cpb.2006.9.762

Wang, G., & Suh, A. (2018). *Disorder or driver?: The effects of nomophobia on work-related outcomes in organizations.* The 2018 CHI Conference, Montreal, Canada.

Wang, J., Wang, H., Gaskin, J., & Wang, L. (2015). The role of stress and motivation in problematic smartphone use among college students. *Computers in Human Behavior, 53*, 181-188. doi:10.1016/j.chb.2015.07.005

Wang, W., Qian, G., Wang, X., Lei, L., Hu, Q., Chen, J., & Jiang, S. (2019). Mobile social media use and self-identity among Chinese adolescents: The mediating effect of friendship quality and the moderating role of gender. *Current Psychology*. doi:10.1007/s12144-019-00397-5

Wang, W. (2018). Exploring the relationship among free-time management, leisure boredom, and internet addiction in undergraduates in Taiwan. *Psychological Reports, 122(5),* 1651-1665. doi:10.1177/0033294118789034

Wang, Z., Yang, X., & Zhang, X. (2020). Relationships among boredom proneness, sensation seeking and smartphone addiction among Chinese college students: Mediating roles of pastime, flow experience and self-regulation. *Technology in Society, 62*, 101319. doi:10.1016/j.techsoc.2020.101319

Ward, D. M., Dill-Shackleford, K. E., & Mazurek, M. O. (2018). Social media use and happiness in adults with autism spectrum disorder. *Cyberpsychology, Behavior, and Social Networking, 21(3),* 205-209. doi:10.1089/cyber.2017.0331

Watson, A. (2021). *Device usage increase due to the coronavirus worldwide 2020, by generation*. Statista. https://www.statista.com/statistics/1170577/device-usage-increase-coronavirus-worldwide-by-generation/

Watson, D., & Clark, L. (1984). Negative affectivity: The disposition to experience negative aversive emotional states. *Psychological Bulletin, 96*, 465-490.

Watson, D., Clark, L., & Tellegen, A. (1988). Development and validation of brief measures of positive and negative affect: The PANAS scales. *Journal of Personality and Social Psychology, 54*, 1063-1070.

Watson, D., & Tellegen, A. (1985). Toward a consensual structure of mood. *Psychological Bulletin, 98*, 219-235.

Waugh, C. E., & Fredrickson, B. L. (2006). Nice to know you: Positive emotions, self–other overlap, and complex understanding in the formation of a new relationship. *The Journal of Positive Psychology, 1(2)*, 93-106. doi:10.1080/17439760500510569

Wegmann, E., Ostendorf, S., & Brand, M. (2018). Is it beneficial to use internet-communication for escaping from boredom? Boredom proneness interacts with cue-induced craving and avoidance expectancies in explaining symptoms of internet-communication disorder. *PLOS ONE, 13*, 1-18.

Weiss, N. H., Gratz, K. L., & Lavender, J. M. (2015). Factor structure and initial validation of a multidimensional measure of difficulties in the regulation of positive emotions: The DERS-positive. *Behavior Modification, 39(3)*, 431-453.

Weiss, N. H., Williams, D. C., & Connolly, K. M. (2015). A preliminary examination of negative affect, emotion dysregulation, and risky behaviors among military veterans in residential substance abuse treatment. *Military Behavioral Health, 3(4)*, 212-218. doi:10.1080/21635781.2015.1038405

Westerink, J., Ouwerkerk, M., Vries, G., Waele, S., Eerenbeemd, J., & Boven, M. (2009). *Emotion measurement platform for daily life situations.* The International Conference on Affective Computing and Intelligent Interaction and Workshops, Amsterdam.

Weybright, E. H., Caldwell, L. L., Ram, N., Smith, E. A., & Wegner, L. (2015). Boredom prone or nothing to do? Distinguishing between state and trait leisure boredom and its association with substance use in south african adolescents. *Leisure Sciences, 37(4)*, 311-331. doi:10.1080/01490400.2015.1014530

Weybright, E. H., Schulenberg, J., & Caldwell, L. L. (2020). More bored today than yesterday? National trends in adolescent boredom from 2008 to 2017. *Journal of Adolescent Health, 66(3)*, 360-365. doi:10.1016/j.jadohealth.2019.09.021

Whalen, C. K., Jamner, L. D., Henker, B., Delfino, R. J., & Lozano, J. M. (2002). The ADHD spectrum and everyday life: Experience sampling of adolescent moods, activities, smoking, and drinking. *Child Development, 73(1)*, 209-227. doi:10.1111/1467-8624.00401

Whalen, D. J., Silk, J. S., Semel, M., Forbes, E. E., Ryan, N. D., Axelson, D. A., . . . Dahl, R. E. (2008). Caffeine consumption, sleep, and affect in the natural environments of depressed youth and healthy controls. *Journal of Pediatric Psychology, 33(4)*, 358-367. doi:10.1093/jpepsy/jsm086

Whang, L. S., Lee, S., & Chang, G. (2003). Internet over-users' psychological profiles: A behavior sampling analysis on internet addiction. *Cyberpsycholy & Behaviour, 6(2)*, 143-150. doi:10.1089/109493103321640338

Whiteside, S., & Lynam, D. (2001). The five factor model and impulsivity: Using a structural model of personality to understand impulsivity. *Personality and Individual Differences, 30*, 669-689.

Whiting, A., & Williams, D. (2013). Why people use social media: A uses and gratifications approach. *Qualitative Market Research: An International Journal, 16(4)*, 362-369. doi:10.1108/QMR-06-2013-0041

Wichers, M., Myin-Germeys, I., Jacobs, N., Peeters, F., Kenis, G., Derom, C., . . . Van Os, J. (2007). Genetic risk of depression and stress-induced negative affect in daily life. *The British Journal of Psychiatry, 191*, 218-223. doi:10.1192/bjp.bp.106.032201

Wichers, M. C., Barge-Schaapveld, D. Q., Nicolson, N. A., Peeters, F., de Vries, M., Mengelers, R., & van Os, J. (2009). Reduced stress-sensitivity or increased reward experience: The psychological mechanism of response to antidepressant medication. *Neuropsychopharmacology, 34(4)*, 923-931. doi:10.1038/npp.2008.66

Wilken, R. (2014). Places nearby: Facebook as a location-based social media platform. *New Media & Society, 16(7)*, 1087-1103. doi:10.1177/1461444814543997

Wilson, K., Fornasier, S., & White, K. M. (2010). Psychological predictors of young adults' use of social networking sites. *Cyberpsychology, Behavior, and Social Networking, 13(2)*, 173-177. doi:10.1089/cyber.2009.0094

Winnicott, D. (1953). Transitional objects and transitional phenomena: A study of the first not-me possession. *The International Journal of Psycho-Analysis, 34*, 89-97.

Wirtz, D., Kruger, J., Napa Scollon, C., & Diener, E. (2003). What to do on spring break? The role of predicted, on-line, and remembered experience in future choice. *Psychological Science, 14(5)*, 520-524. doi:10.1111/1467-9280.03455

Wise, R., & Koob, G. (2014). The development and maintenance of drug addiction. *Neuropsychopharmacoly, 39*, 254-262.

Wolfers, L. N., Festl, R., & Utz, S. (2020). Do smartphones and social network sites become more important when experiencing stress? Results from longitudinal data. *Computers in Human Behavior, 109,* 106339. doi:10.1016/j.chb.2020.106339

Wolfling, K., Beutel, M. E., Koch, A., Dickenhorst, U., & Muller, K. W. (2013). Comorbid internet addiction in male clients of inpatient addiction rehabilitation centers: Psychiatric symptoms and mental comorbidity. *The Journal of Nervous and Mental Disease, 201(11),* 934-940. doi:10.1097/nmd.0000000000000035

Wolniewicz, C., Rozgonjuk, D., & Elhai, J. (2019). Boredom proneness and fear of missing out mediate relations between depression and anxiety with problematic smartphone use. *Human Behavior and Emerging Technologies, 1*, 1-10.

Wolniewicz, C., Tiamiyu, M., Weeks, J., & Elhai, J. (2018). Problematic smartphone use and relations with negative affect, fear of missing out, and fear of negative and positive evaluation. *Psychiatry Research, 262*, 618-623. doi:10.1016/j.psychres.2017.09.058

Wonderlich, S., Crosby, R., Engel, S., Mitchell, J., Smyth, J., & Miltenberger, R. (2007). Personality-based clusters in bulimia nervosa: Differences in clinical variables and ecological momentary assessment. *Journal of Personality Disorders, 21(3),* 340-357. doi:10.1521/pedi.2007.21.3.340

World Health Organization. (2018). *International classification of diseases for mortality and morbidity statistics*. (11th Revision). https://icd.who.int/browse11/l-m/en

Wu, Y. W., & Wooldridge, P. J. (2005). The impact of centering first-level predictors on individual and contextual effects in multilevel data analysis. *Nursing Research, 54(3),* 212-216. doi:10.1097/00006199-200505000-00009

Xiuqin, H., Huimin, Z., Mengchen, L., Jinan, W., Ying, Z., & Ran, T. (2010). Mental health, personality, and parental rearing styles of adolescents with internet addiction disorder. *Cyberpsychology, Behavior, and Social Networking, 13(4),* 401-406. doi:10.1089/cyber.2009.0222

Xu, D., Qian, L., Wang, Y., Wang, M., Shen, C., Zhang, T., & Zhang, J. (2015, 23-25 Oct. 2015). *Understanding the dynamic relationships among interpersonal personality characteristics, loneliness, and smart-phone use: Evidence from experience sampling*. 2015 International Conference on Computer Science and Mechanical Automation (CSMA), Hangzhou, China.

Xu, H., & Tan, B. (2012). *Why do i keep checking Facebook: Effects of message characteristics on the formation of social network services addiction*. International Conference on Information Systems, Orlando, USA

Yakoub, M., & Thouqan, S. (2021). Prevalence of nomophobia and cyberloafing behaviors among undergraduate students. *European Journal of Education Studies, 8(2)*. doi:10.46827/ejes.v8i2.3580

Yam, F., & Kumcagiz, H. (2020). Adaptation of General phubbing scale to Turkish culture and investigation of phubbing levels of university students in terms of various variables. *Addicta, 7*, 48-60. doi:10.5152/addicta.2020.19061

Yang, C. K., Choe, B. M., Baity, M., Lee, J. H., & Cho, J. S. (2005). SCL-90-R and 16PF profiles of senior high school students with excessive internet use. *Canadian Journal of Psychiatry, 50(7)*, 407-414. doi:10.1177/070674370505000704

Yang, X., Zhou, Z., Liu, Q., & Fan, C. (2019). Mobile phone addiction and adolescents' anxiety and depression: The moderating role of mindfulness. *Journal of Child and Family Studies, 28(3)*, 822-830. doi:10.1007/s10826-018-01323-2

Yang, X., Liu, Q., Lian, S., & Zhou, Z. (2020). Are bored minds more likely to be addicted? The relationship between boredom proneness and problematic mobile phone use. *Addictive Behaviors, 108*, 106426. doi:10.1016/j.addbeh.2020.106426

Yavuz, M., Altan, B., Bayrak, B., Gunduz, M., & Bolat, N. (2020). The relationships between nomophobia, alexithymia and metacognitive problems in an adolescent population. *The Turkish Journal of Pediatrics, 61*, 345-351. doi:10.24953/turkjped.2019.03.005

Yazzie-Mintz, E. (2007). *Voices of students on engagement: A report on the 2006 high school survey of student engagement.* https://files.eric.ed.gov/fulltext/ED495758.pdf

Yen, C. F., Tang, T. C., Yen, J. Y., Lin, H. C., Huang, C. F., Liu, S. C., & Ko, C. H. (2009). Symptoms of problematic cellular phone use, functional impairment and its association with depression among adolescents in Southern Taiwan. *Journal of Adolescence, 32(4)*, 863-873. doi:10.1016/j.adolescence.2008.10.006

Yen, J., Ko, C., Yen, C., Chen, S.., Chung, W., & Chen, C. (2008). Psychiatric symptoms in adolescents with internet addiction: Comparison with substance use. *Psychiatry and Clinical Neurosciences, 62(1)*, 9-16. doi:10.1111/j.1440-1819.2007.01770.x

Yen, J., Liu, T., Wang, P., Chen, C., Yen, C., & Ko, C. (2017). Association between internet gaming disorder and adult attention deficit and hyperactivity disorder and their correlates: Impulsivity and hostility. *Addictive Behaviors, 64*, 308-313.

Yen, J., Yen, C., Wu, H., Huang, C., & Ko, C. (2011). Hostility in the real world and online: The effect of internet addiction, depression, and online activity. *Cyberpsychology, Behavior, and Social Networking, 14(11)*, 649-655. doi:10.1089/cyber.2010.0393

Yen, J., Ko, C., Yen, C., Wu, H. , & Yang, M. (2007). The comorbid psychiatric symptoms of internet addiction: Attention deficit and hyperactivity disorder (ADHD),

depression, social phobia, and hostility. *Journal of Adolescent Health, 41(1)*, 93-98. doi:10.1016/j.jadohealth.2007.02.002

Yildirim, C. (2014). *Exploring the dimensions of nomophobia: Developing and validating a questionnaire using mixed methods research* [Master's thesis, Iowa State University].

Yildirim, C., & Correia, A. (2015). Exploring the dimensions of nomophobia: Development and validation of a self-reported questionnaire. *Computers in Human Behavior, 49*, 130-137.

Yildirim, C., Sumuer, E., Adnan, M., & Yildirim, S. (2016). A growing fear: Prevalence of nomophobia among Turkish college students. *Information Development, 32*, 1322-1331.

Yildiz, E., Cengel, M., & Alkan, A. (2020). Investigation of nomophobia levels of vocational school students according to demographic characteristics and intelligent phone use habits. *Higher Education Studies, 10*, 132-143. doi:10.5539/hes.v10n1p132

Yilmaz, M., Kose, A., & Dogru, Y. (2018). Staying away from the smart phone: A research on nomophobia. *Informatics and Communication Technologies Special Issue, 9*, 32-47. doi:10.5824/1309-1581.2018.5.003.x

Yilmaz, T., & Bekaroglu, E. (2021). Does interpersonal sensitivity and paranoid ideation predict nomophobia: An analysis with a young adult sample. *Current Psychology*. doi:10.1007/s12144-021-01501-4

Yogurtcu, D. (2018). *The relationship between five factor personality traits and nomophobia levels among university students*. [Master's thesis, Yeditepe University].

Yorulmaz, M., Kirac, R., & Sabirli, H. (2018). Effects of nomophobia sleeping at university students. *Journal of Social And Humanities Sciences Research, 5*, 2988-2996.

Young, K. (1998). *Caught in the net: How to recognize the signs of internet addiction and a winning strategy for recovery*. John Wiley & Sons.

Young, K. (1999). Internet addiction: Symptoms, evaluation and treatment. *Innovations in Clinical Practice, 17*, 19-31.

Young, K., & Rogers, R. (1998). The relationship between depression and internet addiction. *CyberPsychology & Behavior, 1*, 25-28. doi:10.1089/cpb.1998.1.25

Yu, J. J., Kim, H., & Hay, I. (2013). Understanding adolescents' problematic internet use from a social/cognitive and addiction research framework. *Computers in Human Behavior, 29(6)*, 2682-2689. doi:10.1016/j.chb.2013.06.045

Yue, Z., Litt, E., Cai, C., & Stern, J. (2014). *Photographing information needs: The role of photos in experience sampling method-style research.* CHI Conference on Human Factors in Computing Systems, Toronto.

Yukcu, S., & Demircioglu, H. (2017). Examination of the emotion regulation skills of preschool children in terms of various variables. *Mehmet Akif Ersoy University Journal of Education Faculty (44)*, 442-466.

Zapolski, T. C., Cyders, M. A., & Smith, G. T. (2009). Positive urgency predicts illegal drug use and risky sexual behavior. *Psychology of Addictive Behaviors, 23(2)*, 348-354. doi:10.1037/a0014684

Zeman, J., Cassano, M., Perry-Parrish, C., & Stegall, S. (2006). Emotion regulation in children and adolescents. *Journal of Developmental and Behavioral Pediatrics, 27(2)*, 155-168. doi:10.1097/00004703-200604000-00014

Zhang, K., Chen, C., & Lee, M. (2014). *Understanding the role of motives in smartphone addiction.* Pacific Asia Conference on Information Systems, Chengdu, China.

Zhang, Y., Li, S., & Yu, G. (2019). The relationship between boredom proneness and cognitive failures: The mediating role of mobile phone addiction tendency and its difference between only and non-only child family. *Psychological Development and Education, 35*, 344–351.

Zhitomirsky-Geffet, M., & Blau, M. (2016). Cross-generational analysis of predictive factors of addictive behavior in smartphone usage. *Computers in Human Behavior, 64*, 682-693. doi:10.1016/j.chb.2016.07.061

Zhou, S. X., & Leung, L. (2012). Gratification, loneliness, leisure boredom, and self-esteem as predictors of SNS-game addiction and usage pattern among Chinese college students. *International Journal of CyberBehavior, Psychology and Learning*, 34-48. doi:10.4018/ijcbpl.2012100103

Ziebland, S., & Wyke, S. (2012). Health and illness in a connected world: How might sharing experiences on the internet affect people's health? *Milbank Quarterly, 90(2)*, 219-249. doi:10.1111/j.1468-0009.2012.00662.x

Zuckerman, M. (1971). Dimensions of sensation seeking. *Journal of Consulting and Clinical Psychology, 36*, 45-52. doi:10.1037/h0030478

Zuckerman, M. (1979). *Sensation seeking: Beyond the optimal level of arousal*. Lawrence Erlbaum.

Zuckerman, M., Eysenck, S., & Eysenck, H. (1978). Sensation seeking in England and America: Cross-cultural, age, and sex comparisons. *Journal of Consulting and Clinical Psychology, 46*, 139-149.

Zych, I., Ortega-Ruiz, R., & Marín-López, I. (2020). Emotional content in cyberspace: Development and validation of e-motions questionnaire in adolescents and young people. *Psicothema, 29,* 563–569. doi:10.7334/psicothema2016.340

7. APPENDICES

APPENDIX A: PERSONAL INFORMATION FORM

DEMOGRAFİK BİLGİ FORMU

Yaş:

Cinsiyet:

Nerede yaşıyorsunuz?

Ev ( ) Yurt ( )

Kimler ile birlikte yaşıyorsunuz?

Aile ( ) Arkadaş ( ) Yalnız ( )

Ne kadar süredir akıllı telefon kullanıyorsunuz? ____yıl, _____ay

Günde ne kadar süre akıllı telefon kullanıyorsunuz? ____saat, __dakika

Günde ne kadar süre mobil internet kullanıyorsunuz? ___saat, ____dakika

Akıllı telefonunuzu ne sıklıkta kontrol ediyorsunuz?

0-10 dakikada bir ( ) 11-20 dakikada bir ( ) 21-30 dakikada bir ( )

31-60 dakikada bir ( ) 61 dakika veya daha fazlası( )

Akıllı telefonu en fazla hangi amaç için kullanıyorsunuz?

Konuşma ( ) Sosyal medya ( ) İş ( ) Bilgi edinme/Araştırma ( )

Kamera ( ) Oyun ( ) Müzik ( ) Alışveriş ( )

APPENDIX B: THE NOMOPHOBIA QUESTIONNAIRE TURKISH VERSION

NOMOFOBİ ÖLÇEĞİ-TÜRKÇE FORM

Akıllı telefonun kullanımınızla ilgili olarak aşağıdaki ifadelere katılma derecenizi belirtiniz.

1: Kesinlikle katılmıyorum, 2: Katılmıyorum, 3: Kısmen katılmıyorum, 4: Karasızım,

5: Kısmen katılıyorum, 6: Katılıyorum, 7: Kesinlikle katılıyorum

1.Akıllı telefonumdan sürekli olarak bilgiye erişmediğimde kendimi rahatsız hissederim.

2.Akıllı telefonumdan istediğim her an bilgiye bakamadığımda canım sıkılır.

3.Haberlere (örneğin neler olup bittiğine, hava durumuna ve diğer haberlere) akıllı telefonumdan ulaşamamak beni huzursuz yapar.

4.Akıllı telefonumu ve telefonumun özelliklerini istediğim her an kullanamadığımda rahatsız olurum.

5.Akıllı telefonumun şarjının bitmesinden korkarım.

6.Kontörüm (TL kredim) bittiğinde veya aylık kota sınırımı astığımda paniğe kapılırım.

7.Telefonum çekmediğinde veya kablosuz internet bağlantısına erişemediğimde sürekli olarak sinyal olup olmadığını veya kablosuz erişim bağlantısı bulup bulamayacağımı kontrol ederim.

8.Akıllı telefonumu kullanamadığımda, bir yerlerde mahsur kalacağımdan korkarım.

9.Akıllı telefonuma bir sure bakamadıysam, bakmak için güçlü bir istek hissederim.

10.Eğer akıllı telefonum yanımda değilse, Ailemle ve/veya arkadaşlarımla hemen iletişim kuramayacağım için kaygı duyarım.

11.Ailem ve/veya arkadaşlarım bana ulaşamayacakları için endişelenirim.

12.Gelen aramaları ve mesajları alamayacağım için kendimi huzursuz hissederim.

13.Ailemle ve/veya arkadaşlarımla iletişim halinde olamadığım için endişelenirim.

14.Birinin bana ulaşmaya çalışıp çalışmadığını bilemediğim için gerilirim.

15.Ailem ve arkadaşlarımla olan bağlantım kesileceği için kendimi huzursuz hissederim.

16.Çevrimiçi kimliğinden kopacağım için gergin olurum.

17.Sosyal medya ve diğer çevrimiçi ağlarda güncel kalamadığım için rahatsızlık duyarım.

18.Bağlantılarımdan ve çevrimiçi ağlardan gelen güncelleme bildirimlerini takip edemediğim için kendimi tuhaf hissederim.

19.Elektronik postalarımı kontrol edemediğim için kendimi huzursuz hissederim.

20.Ne yapacağımı bilemiyor olacağımdan kendimi tuhaf hissederim.

APPENDIX C: THE DIFFICULTY OF EMOTION REGULATION SCALE TURKISH VERSION

DUYGU DÜZENLEME GÜÇLÜĞÜ ÖLÇEĞİ- TÜRKÇE FORM

Aşağıdaki cümlelerin size ne sıklıkla uyduğunu aşağıda belirtilen 5 dereceli ölçek üzerinde değerlendiriniz. Her bir cümlenin yanındaki boşluğa, size uygunluk yüzdesini dikkate alarak 1 ile 5 arasında uygun rakamı yazınız.

1----------2----------3----------4----------5

hemen hemen hiç yaklaşık yarı yarıya hemen hemen her zaman

1. Ne hissettiğim konusunda netimdir.
2. Ne hissettiğimi dikkate alırım.
3. Duygularım bana aşırı ve kontrolsüz gelir.
4. Ne hissettiğim konusunda hiçbir fikrim yoktur.
5. Duygularıma bir anlam vermekte zorlanırım.
6. Duygularıma karşı duyarlıyımdır.
7. Ne hissettiğimi tam olarak bilirim.
8. Ne hissettiğimi önemserim.
9. Ne hissettiğim konusunda çelişki yaşarım/Duygularımı ayırt etmekte güçlük çekerim.
10. Kendimi kötü hissettiğimde böyle hissettiğim için kendime kızarım.
11. Kendimi kötü hissettiğim zaman utanırım.
12. Kendimi kötü hissettiğimde çalışmakta güçlük çekerim.
13. Kendimi kötü hissettiğimde kontrolden çıkmaya başlarım.
14. Kendimi kötü hissettiğimde bu duygudan uzun süre kurtulamayacağıma inanırım. / Kendimi kötü hissettiğimde uzun süre öyle kalacağıma inanırım.
15. Kendimi kötü hissetmemin yoğun depresif duyguyla sonuçlanacağına inanırım.
16. Kendimi kötü hissettiğimde duygularımın yerinde ve önemli olduğuna inanırım.
17. Kendimi kötü hissederken başka şeylere odaklanmakta zorlanırım.
18. Kendimi kötü hissederken kontrolden çıktığım duygusu yaşarım.
19. Kendimi kötü hissediyor olsam da çalışmayı sürdürebilirim.
20. Kendimi kötü hissettiğimde bu duygumdan dolayı kendimden utanç duyarım.

21. Kendimi kötü hissettiğimde sonradan kendimi daha iyi hissetmenin bir yolunu bulacağımı bilirim.
22. Kendimi kötü hissettiğimde bunu zayıflık olarak yaşarım.
23. Kendimi kötü hissettiğimde de davranışlarım kontrolümün altındadır.
24. Kendimi kötü hissetmek bana suçluluk duygusu yaşatır.
25. Kendimi kötü hissettiğimde konsantre olmakta zorlanırım.
26. Kendimi kötü hissettiğimde davranışlarımı kontrol etmekte zorlanırım.
27. Kendimi kötü hissettiğimde daha iyi hissetmenin hiçbir yolu olmadığına inanırım.
28. Kendimi kötü hissettiğimde böyle hissettiğim için kendimden rahatsız olurum.
29. Kendimi kötü hissettiğimde, kendim için çok fazla endişelenmeye başlarım.
30. Kendimi kötü hissettiğimde kendimi bu duyguya bırakmaktan başka yapabileceğim bir şey olmadığına inanırım. /Kendimi kötü hissettiğimde kendimi bu duyguya bırakmaktan başka çıkar yol olmadığına inanırım.
31. Kendimi kötü hissettiğimde davranışlarım üzerindeki kontrolümü kaybederim.
32. Kendimi kötü hissettiğimde başka bir şey düşünmekte zorlanırım.
33. Kendimi kötü hissettiğimde gerçekte duygumun ne olduğunu anlamak için zaman ayırırım.
34. Kendimi kötü hissettiğimde bu duygunun geçmesi çok uzun zaman alır.
35. Kendimi kötü hissettiğimde duygularım dayanılmaz olur.

APPENDIX D: THE POSITIVE AND NEGATIVE AFFECT SCHEDULE TURKISH VERSION

POZİTİF VE NEGATİF DUYGU ÖLÇEĞİ TÜRKÇE FORM

Bu ölçek, farklı duyguları tanımlayan birkaç kelimeden oluşur. Her öğeyi okuyunuz. Her kelimenin yanındaki boşluğa genel olarak düşündüğünüzde kendinizin nasıl hissettiğini değerlendiriniz

1----------2----------3----------4----------5

1: Çok az veya hiç 2: Biraz 3: Kısmen 4: Fazla 5: Çok fazla

İlgili _____	Asabi _____
Sıkıntılı _____	Uyanık _____
Heyecanlı _____	Utanmış _____
Mutsuz _____	İlhamlı _____
Güçlü _____	Sinirli _____
Suçlu _____	Kararlı _____
Ürkmüş _____	Dikkatli _____
Düşmanca _____	Tedirgin _____
Hevesli _____	Aktif _____
Gururlu _____	Korkmuş _____

APPENDIX E: THE SHORT VERSION OF THE BOREDOM PRONENESS SCALE TURKISH VERSION

CAN SIKINTISI EĞİLİMİ ÖLÇEĞİ - KISA FORMU TÜRKÇE FORM

Aşağıdaki ifadelerin her birine ne derece katıldığınızı, yanındaki kutucuklarda yer alan "1= Kesinlikle katılmıyorum" ile "7= Kesinlikle Katılıyorum" arasındaki rakamlardan yalnızca birinin üstüne (X) işareti koyarak gösteriniz. **1 = Kesinlikle katılmıyorum 2 = Katılmıyorum 3 = Biraz katılmıyorum** **4 = Ne katılıyorum ne de katılmıyorum 5 = Çok az katılıyorum** **6 = Katılıyorum 7 = Kesinlikle katılıyorum**							
Kendimi sıklıkla "yarım kalmış işlerin" içinde ne yapacağımı bilmez halde bulurum.	1	2	3	4	5	6	7
Kendimi eğlendirmek benim için zordur.	1	2	3	4	5	6	7
Yapmak zorunda olduğum çoğu şey tekrardan ibaret ve monotondur.	1	2	3	4	5	6	7
Bir işe başlamam için çoğu insandan daha fazla motivasyona ihtiyaç duyarım.	1	2	3	4	5	6	7
Yaptığım çoğu şey, beni yeni şeyler yapmaya motive etmez.	1	2	3	4	5	6	7
Çoğu durumda, yapacak bir şeyler bulmakta ya da ilgimi çekecek şeylerle meşgul olmakta zorlanırım.	1	2	3	4	5	6	7
Çoğu zaman, hiçbir şey yapmadan öylece otururum.	1	2	3	4	5	6	7
Tehlikeli bile olsa heyecan verici bir şey yapmadıkça kendimi çok yorgun ve sıkılmış hissederim.	1	2	3	4	5	6	7

APPENDIX F: THE BRIEF SYMPTOM INVENTORY TURKISH VERSION

KISA SEMPTOM ENVANTERİ TÜRKÇE FORM

Aşağıda insanların bazen yaşadıkları belirtilerin ve yakınmaların bir listesi verilmiştir. Listedeki her maddeyi lütfen dikkatle okuyunuz. Daha sonra sizde o belirtinin bugün dahil, son bir haftadır ne kadar var olduğunu yandaki bölmede uygun olan yerde işaretleyiniz. Her belirti için sadece bir yeri işaretlemeye ve hiçbir maddeyi atlamamaya özen gösteriniz. Cevaplarınızı aşağıdaki ölçeğe göre değerlendiriniz. Bu belirtiler son bir haftadır sizde ne kadar var?

0.Hiç yok 1. Biraz var 2. Orta derecede var 3. Epey var 4. Çok fazla var

Bu belirtiler son bir haftadır sizde ne kadar var?					
	Hiç				**Çok**
1.İçinizdeki sinirlilik ve titreme hali	□	□	□	□	□
2.Baygınlık, baş dönmesi	□	□	□	□	□
3.Bir başka kişinin sizin düşüncelerinizi kontrol edeceği fikri	□	□	□	□	□
4.Başınıza gelen sıkıntılardan dolayı başkalarının suçlu olduğu duygusu	□	□	□	□	□
6.Çok kolayca kızıp öfkelenme	□	□	□	□	□
7.Göğüs (kalp) bölgesinde ağrılar	□	□	□	□	□
8.Meydanlık (açık) yerlerden korkma duygusu	□	□	□	□	□
9.Yaşamınıza son verme düşünceleri	□	□	□	□	□
10.İnsanların çoğuna güvenilmeyeceği hissi	□	□	□	□	□
11.İştahta bozukluklar	□	□	□	□	□
12.Hiçbir nedeni olmayan ani korkular	□	□	□	□	□
13.Kontrol edemediğiniz duygu patlamaları	□	□	□	□	□
14.Başka insanlarla beraberken bile yalnızlık hissetmek	□	□	□	□	□
15.İşleri bitirme konusunda kendini engellenmiş hissetmek	□	□	□	□	□

16.Yalnızlık hissetmek	□	□	□	□	□
17.Hüzünlü, kederli hissetmek	□	□	□	□	□
18.Hiçbirşeye ilgi duymamak	□	□	□	□	□
19.Ağlamaklı hissetmek	□	□	□	□	□
20.Kolayca incinebilme, kırılmak	□	□	□	□	□
21.İnsanların sizi sevmediğine, kötü davrandığına inanmak	□	□	□	□	□
22.Kendini diğerlerinden daha aşağı görmek	□	□	□	□	□
23.Mide bozukluğu, bulantı	□	□	□	□	□
24.Diğerlerinin sizi gözlediği yada hakkınızda konuştuğu duygusu	□	□	□	□	□
25.Uykuya dalmada güçlük	□	□	□	□	□
26.Yaptığınız şeyleri tekrar tekrar doğru mu diye kontrol etmek	□	□	□	□	□
27.Karar vermede güçlükler	□	□	□	□	□
28.Otobüs, tren, metro gibi umumi vasıtalarla seyahatlerden korkmak	□	□	□	□	□
29.Nefes darlığı, nefessiz kalmak	□	□	□	□	□
30.Sıcak, soğuk basmaları	□	□	□	□	□
31.Sizi korkuttuğu için bazı eşya, yer yada etkinliklerden uzak kalmaya çalışmak	□	□	□	□	□
32.Kafanızın bomboş kalması	□	□	□	□	□
33.Bedeninizin bazı bölgelerinde uyuşmalar, karıncalanmalar	□	□	□	□	□
34.Günahlarınız için cezalandırılmanız gerektiği	□	□	□	□	□
35.Gelecekle ilgili umutsuzluk duyguları	□	□	□	□	□
36.Konsantrasyonda (dikkati bir şey üzerine toplama) güçlük	□	□	□	□	□
37.Bedenin bazı bölgelerinde zayıflık, güçsüzlük hissi	□	□	□	□	□
38.Kendini gergin ve tedirgin hissetmek	□	□	□	□	□
39. Ölme ve ölüm üzerine düşünceler	□	□	□	□	□
40.Birini dövme, ona zarar verme, yaralama isteği	□	□	□	□	□

41.Birşeyleri kırma, dökme isteği	□	□	□	□	□
42.Diğerlerinin yanındayken yanlış bir şeyler yapmamaya çalışma	□	□	□	□	□
43.Kalabalıklarda rahatsızlık duymak	□	□	□	□	□
44.Bir başka insana hiç yakınlık duymamak	□	□	□	□	□
45.Dehşet ve panik nöbetleri	□	□	□	□	□
46.Sık sık tartışmaya girmek	□	□	□	□	□
47.Yalnız bırakıldığında/kalındığında sinirlilik hissetmek	□	□	□	□	□
48.Başarılarınız için diğerlerinden yeterince takdir görmemek	□	□	□	□	□
49.Yerinde duramayacak kadar tedirgin hissetmek	□	□	□	□	□
50.Kendini değersiz görmek/değersizlik duyguları	□	□	□	□	□
51.Eğer izin verirseniz insanların sizi sömüreceği duygusu	□	□	□	□	□
52.Suçluluk duyguları	□	□	□	□	□
53.Aklınızda bir bozukluk olduğu fikri	□	□	□	□	□

APPENDIX G: ETHICAL APPROVAL

APPENDIX H: INFORMED CONSENT FORMS

STUDY 1/ 1. ÇALIŞMA

ARAŞTIRMAYA GÖNÜLLÜ KATILIM FORMU

Değerli Katılımcı,

Bu çalışma, Yıldırım Beyazıt Üniversitesi Psikoloji Doktora Programı öğrencisi Özge Enez tarafından doktora tez çalışması kapsamında Prof. Dr. Özden Yalçınkaya Akar'ın danışmanlığında yürütülmektedir. Çalışmanın amacı, nomofobi ile ilgili bazı psikolojik belirtilerin ilişkisini incelemektir. Çalışma yaklaşık 35 dakika sürmektedir. Çalışmada sizden altı tane ölçeği doldurmanız istenecektir. Soruların doğru ya da yanlış yanıtı yoktur. Sizden beklenen soruları içtenlikle yanıtlamanızdır. Vermiş olduğunuz bilgiler gizli tutulacak ve yalnızca bilimsel amaçlar için kullanılacaktır.

Çalışmaya katılım gönüllülük esasına dayanmaktadır. Çalışmada kişisel rahatsızlık verecek sorular bulunmamaktadır. Ancak, herhangi bir aşamada rahatsızlık duyduğunuz takdirde hiçbir gerekçe göstermeden çalışmayı yarıda bırakabilirsiniz. Çalışmayla ilgili ayrıntılı bilgi almak isterseniz Özge Enez (e-posta: ozgeenez@gmail.com) ile iletişim kurabilirsiniz. Gösterdiğiniz ilgi, ayırdığınız zaman ve katılımınız için teşekkür ederim.

Bu çalışmaya tamamen gönüllü olarak katılıyorum ve istediğim zaman yarıda kesebileceğimi biliyorum. Verdiğim bilgilerin bilimsel amaçlı yayımlarda kullanılmasını kabul ediyorum.

Tarih

İmza

STUDY 2/ 2. ÇALIŞMA

ARAŞTIRMAYA GÖNÜLLÜ KATILIM FORMU

Değerli Katılımcı,

Bu çalışma, Yıldırım Beyazıt Üniversitesi Psikoloji Doktora Programı öğrencisi Özge Enez tarafından doktora tez çalışması kapsamında Prof. Dr. Özden Yalçınkaya Akar'ın danışmanlığında yürütülmektedir. Çalışmanın amacı, nomofobi ile ilgili bazı psikolojik belirtilerin ilişkisini incelemektir. Çalışmanın ilk aşaması yaklaşık 25 dakika sürmektedir. Çalışmada sizden beş tane ölçeği doldurmanız istenecektir. Çalışmanın ikinci aşaması bir hafta sürmektedir. Cep telefonu uygulaması üzerinden size günde altı defa gönderilecek olan ölçeğe cevap vermeniz istenecektir. Her bir ölçeğin doldurulması iki dakikadan az sürmektedir. Soruların doğru ya da yanlış yanıtı yoktur. Sizden beklenen soruları içtenlikle yanıtlamanızdır. Vermiş olduğunuz bilgiler gizli tutulacak ve yalnızca bilimsel amaçlar için kullanılacaktır.

Çalışmaya katılım gönüllüdür. Çalışmada kişisel rahatsızlık verecek sorular ya da girişimler bulunmamaktadır. Ancak, herhangi bir aşamada rahatsızlık duyduğunuz takdirde hiçbir gerekçe göstermeden çalışmayı yarıda bırakabilirsiniz. Çalışmayla ilgili ayrıntılı bilgi almak isterseniz Özge Enez (e-posta: ozgeenez@gmail.com) ile iletişim kurabilirsiniz. Gösterdiğiniz ilgi, ayırdığınız zaman ve katılımınız için teşekkür ederim.

Bu çalışmaya tamamen gönüllü olarak katılıyorum ve istediğim zaman yarıda kesebileceğimi biliyorum. Verdiğim bilgilerin bilimsel amaçlı yayımlarda kullanılmasını kabul ediyorum.

Tarih

İmza

APPENDIX I: ASSUMPTIONS OF MULTIPLE REGRESSION ANALYSIS

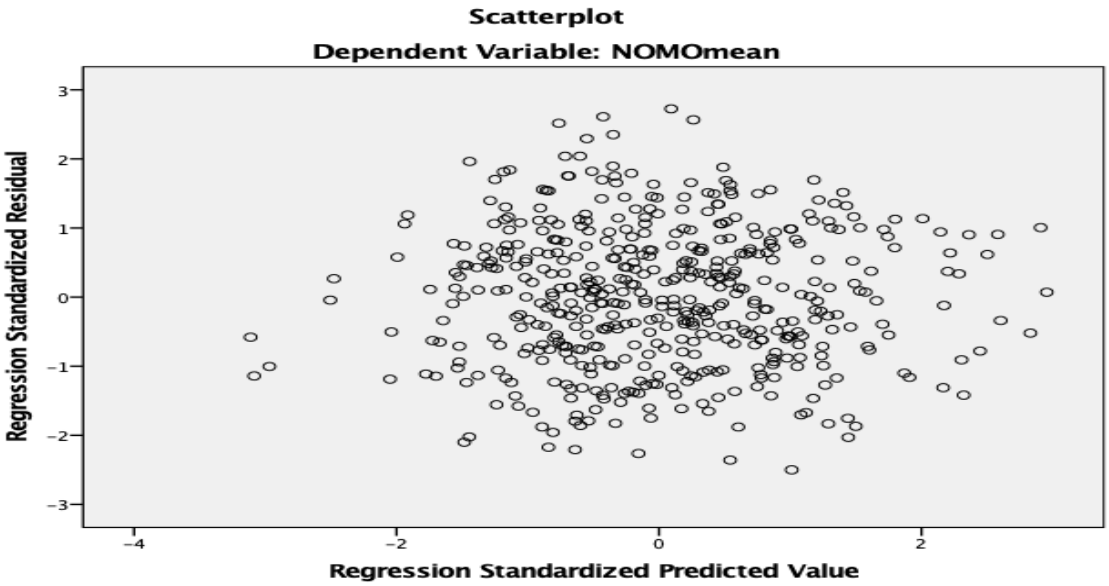


Figure 2. 1. Scatter plot for the homoscedasticity assumption of the residuals

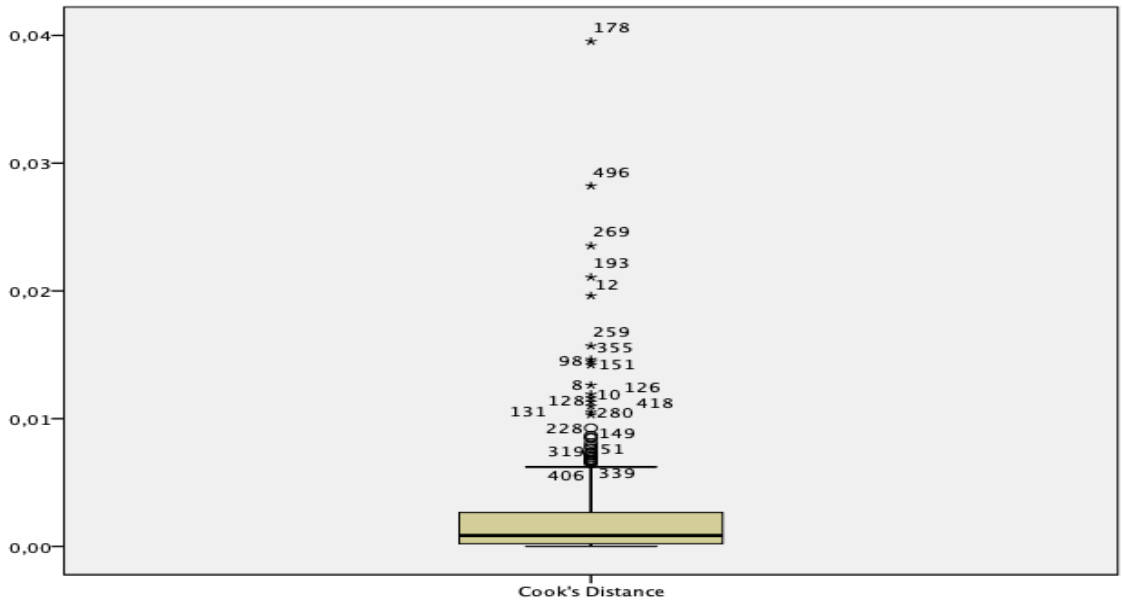


Figure 2. 2. Boxplot of Cook's Distance

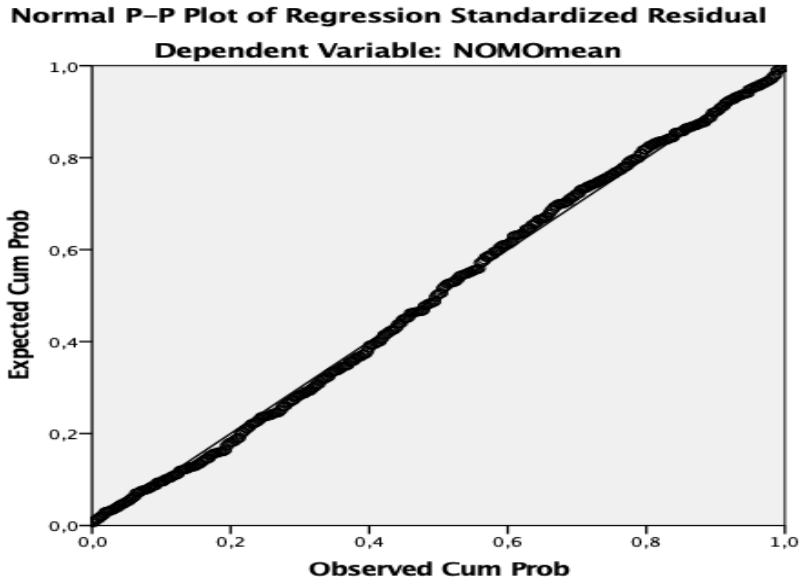


Figure 2. 3. Normal P-P plot for the normality assumption of the residuals

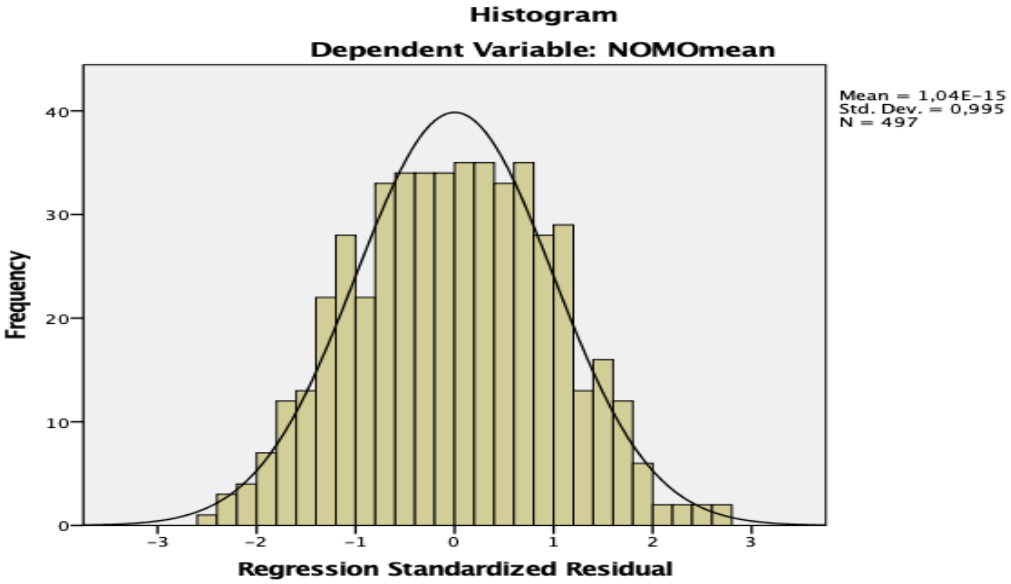


Figure 2. 4. Histogram for the normality assumption of the residuals

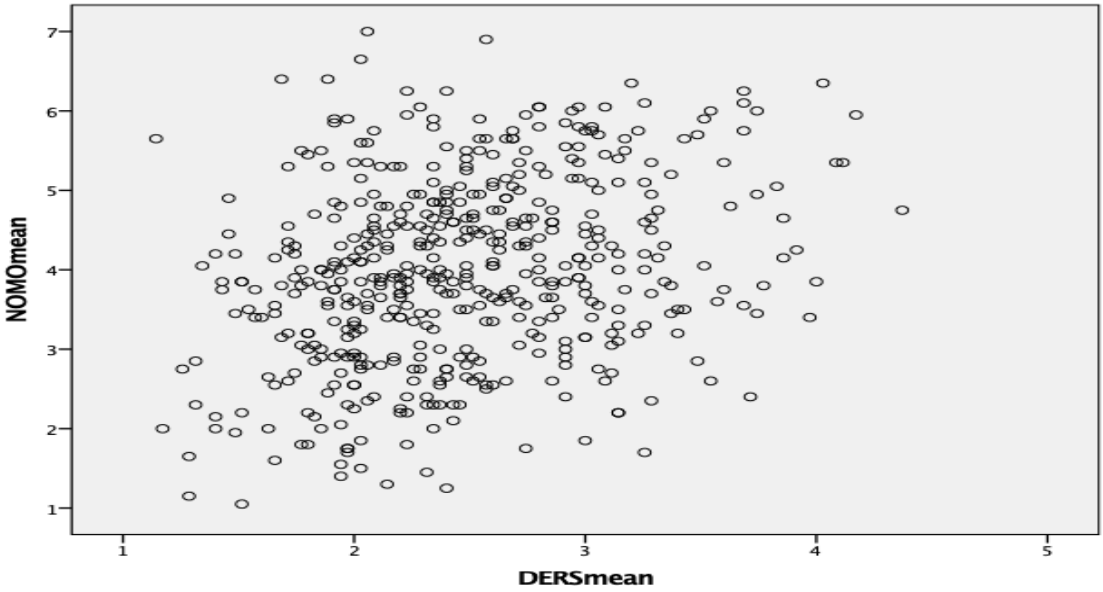


Figure 2. 5. Scatter plot for the linearity assumption between nomophobia and emotion dysregulation

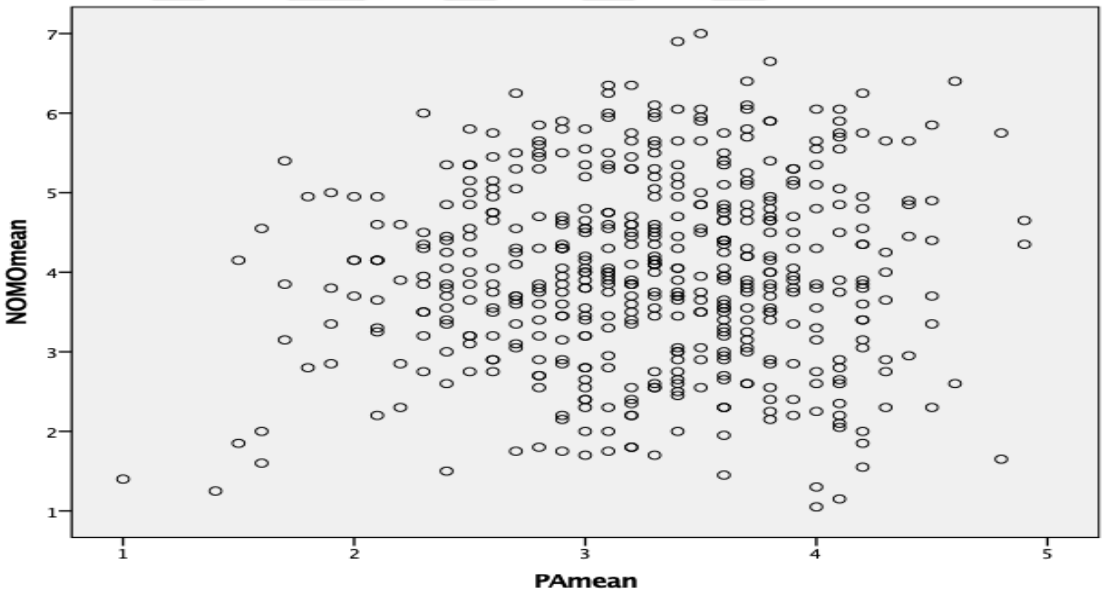


Figure 2. 6. Scatter plot for the linearity assumption between nomophobia and positive affect

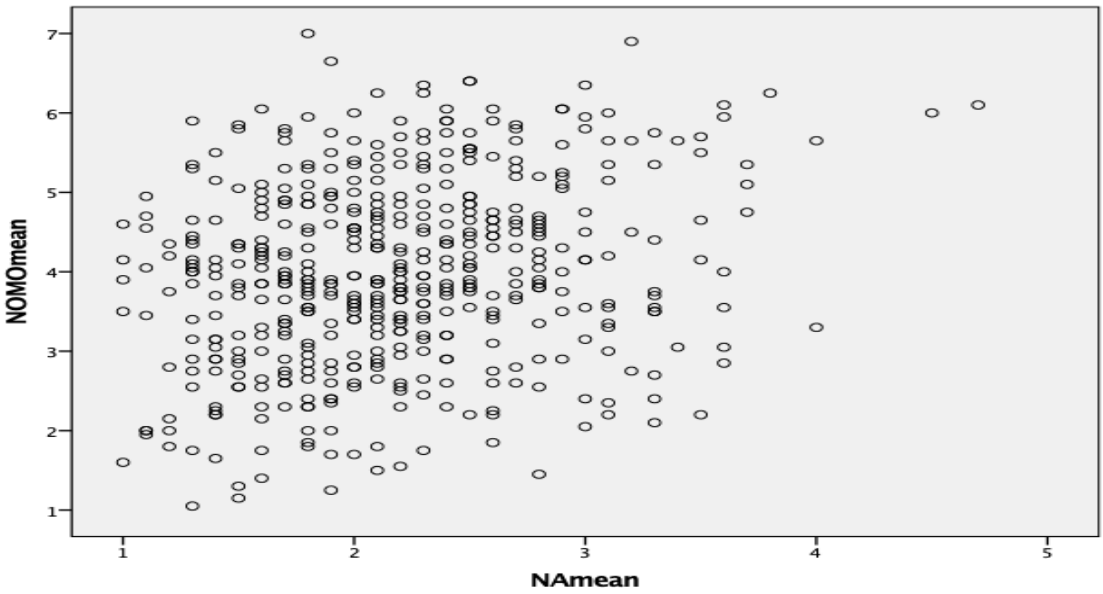


Figure 2. 7. Scatter plot for the linearity assumption between nomophobia and negative affect

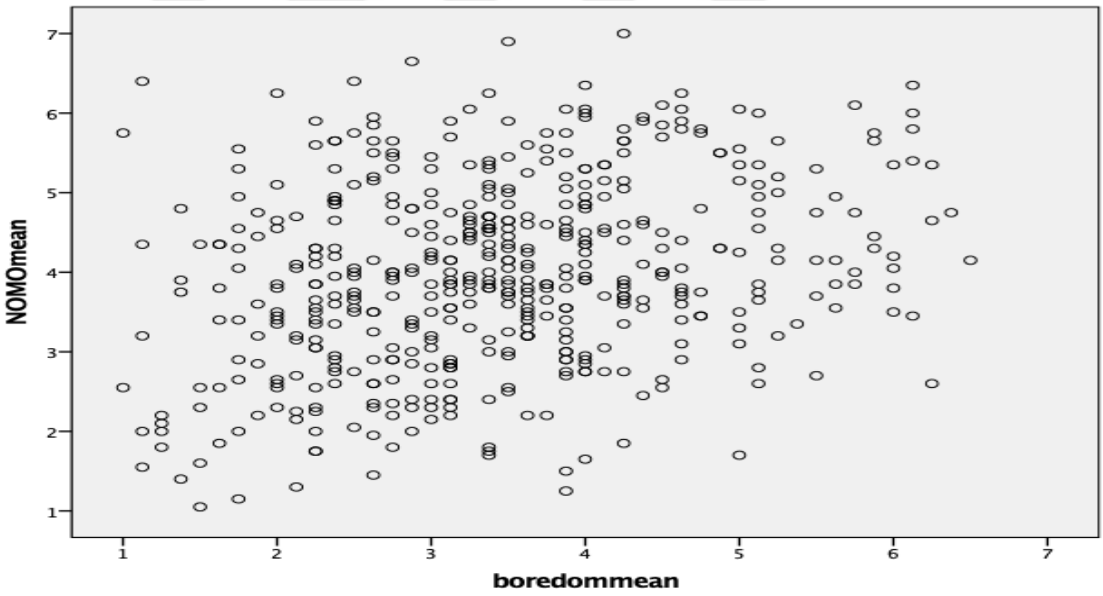


Figure 2. 8. Scatter plot for the linearity assumption between nomophobia and boredom proneness

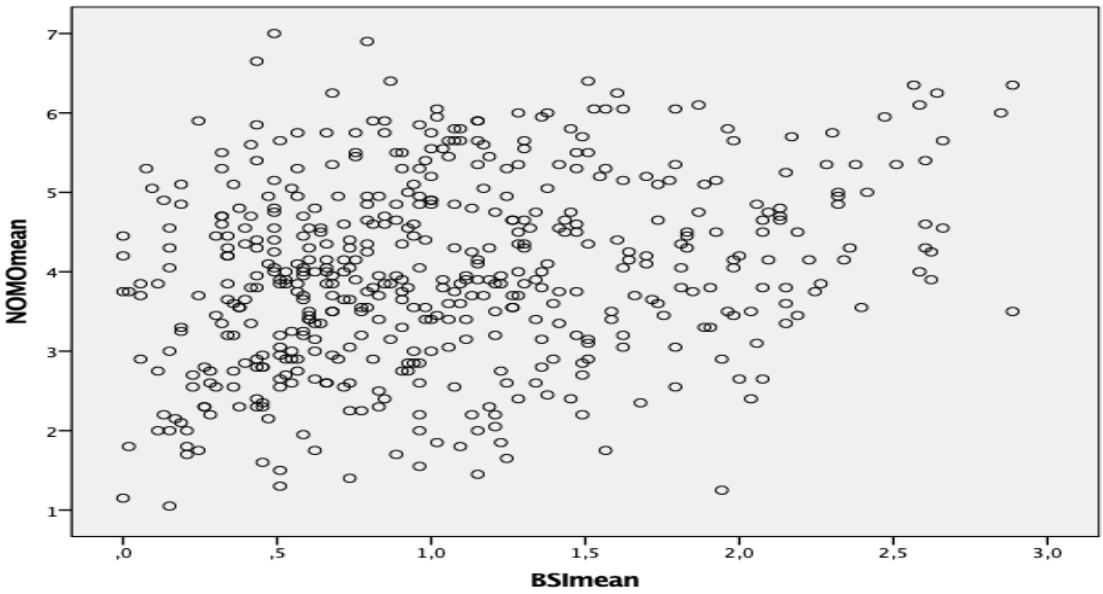


Figure 2. 9. Scatter plot for the linearity assumption between nomophobia and psychopathological symptom severity

APPENDIX J: PIEL SURVEY (ESM QUESTIONNAIRE)

PIEL ÖLÇEĞİ (ESM ÖLÇEĞİ)

1.Son anketten itibaren ailenizin ve/veya arkadaşlarınızın size telefon aracılığıyla ulaşamamalarından endişelendiniz mi?

Çok az veya hiç Biraz Kısmen Fazla Çok fazla

2. Son anketten itibaren telefonunuzu kullanamadığınız için rahatsızlık hissettiniz mi?

Çok az veya hiç Biraz Kısmen Fazla Çok fazla

3. Son anketten itibaren telefonunuzun çektiğini ve/veya internet bağlantısının olduğunu sıklıkla olarak kontrol ettiniz mi?

Çok az veya hiç Biraz Kısmen Fazla Çok fazla

4. Son anketten itibaren arama, mesaj, bildirim ve e-postalarınızı kontrol edemediğiniz için kendinizi huzursuz hissettiniz mi?

Çok az veya hiç Biraz Kısmen Fazla Çok fazla

5. Son anketten itibaren hissettiğiniz duygunun hangi duygu olduğunu anlamada güçlük çektiniz mi?

Çok az veya hiç Biraz Kısmen Fazla Çok fazla

6. Son anketten itibaren olumlu veya olumsuz duygularınızı kontrol etmekte zorlandınız mı?

Çok az veya hiç Biraz Kısmen Fazla Çok fazla

7. Son anketten itibaren hissettiğiniz olumlu duyguların derecesini aşağıdaki ölçekte işaretleyiniz.

Çok az veya hiç Biraz Kısmen Fazla Çok fazla

8. Son anketten itibaren hissettiğiniz olumsuz duyguların derecesini aşağıdaki ölçekte işaretleyiniz.

Çok az veya hiç Biraz Kısmen Fazla Çok fazla

9. Son anketten itibaren hissettiğiniz can sıkıntısı düzeyini aşağıdaki ölçekte işaretleyiniz.

Çok az veya hiç Biraz Kısmen Fazla Çok fazla

10. Şu anda içinde bulunduğunuz durumdan/ortamdan memnuniyet dereceniz nedir?

Hiç memnun değilim Memnun değilim Kararsızım Memnunum Çok memnunum

APPENDIX K: DESCRIPTIVE STATISTICS FOR THE DROPOUT GROUP

Table 3. 9. Means, standard deviations, ranges, skewness and kurtosis values of the variables for the dropout group

Variables	*N*	*M*	*SD*	Range	Minimum	Maximum	Skewness	Kurtosis
Nomophobia	25	3.48	1.63	5.40	1.00	6.40	.50	-1.20
DERS	25	2.33	.55	2.26	1.29	3.54	.31	-.35
PA	25	3.30	.73	3.30	1.50	4.80	-.28	.41
NA	25	1.98	.56	2.00	1.30	3.30	.58	-.31
BP	25	3.31	1.22	5.13	1.13	6.25	.52	.23

Note. N= Number, M = Mean, SD = Standard deviation, DERS= the Difficulty of Emotion Regulation Scale, PA= Positive affect, NA= Negative affect, BP= Boredom proneness

APPENDIX L: RELIABILITY ESTIMATES OF THE MODELS IN THE RANDOM INTERCEPT AND SLOPE MODEL

Table 3. 10. Reliability estimates of the models in the random intercept and slope model

Random level 1 coefficient	Reliability estimate		
	Null model	Model 1	Model 2
Intercept (π_0)	.989	.984	.983
State EDR	-	.621	.620
State boredom	-	.473	.474

Note. EDR= Emotion dysregulation

APPENDIX M: THE FIGURES OF MOMENTARY PATTERN OF THE LEVEL 1 PREDICTORS, MOMENTARY NOMOPHOBIA PATTERN OF EACH PARTICIPANT, AND MOMENTARY NOMOPHOBIA PATTERN OF ALL PARTICIPANTS

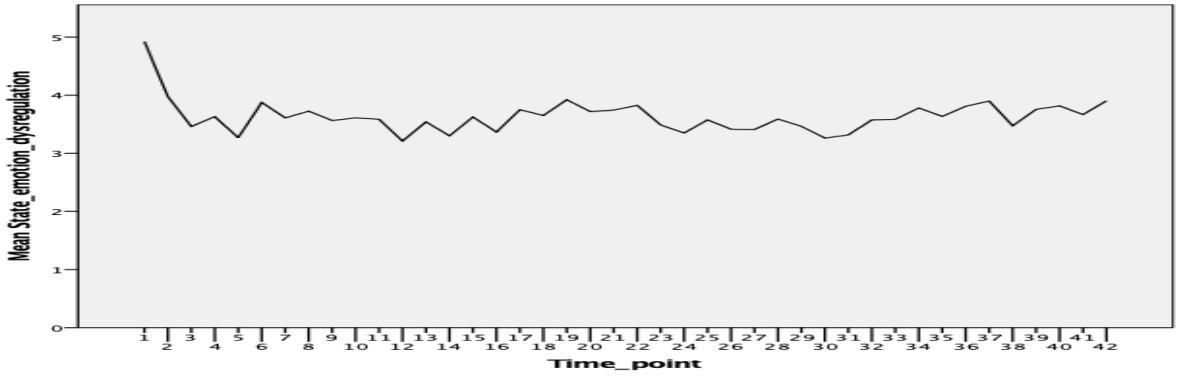


Figure 3. 3. Momentary pattern of state emotion dysregulation

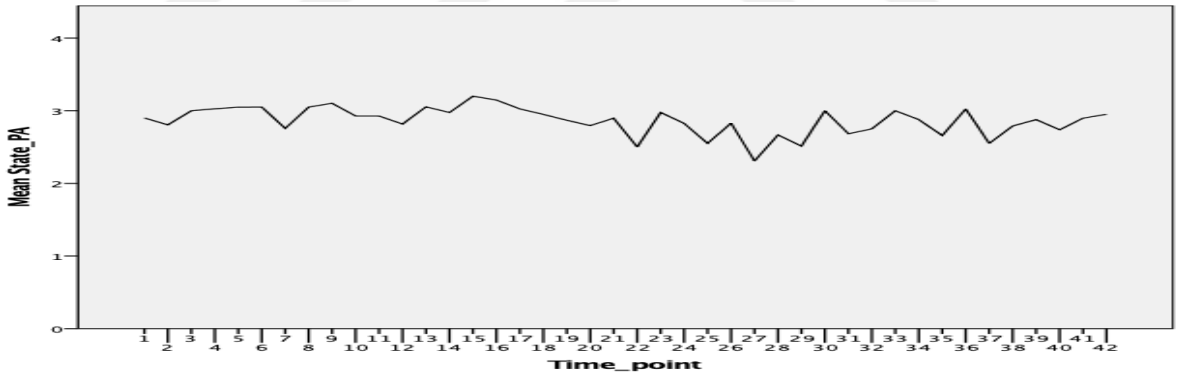


Figure 3. 4. Momentary pattern of state positive affect

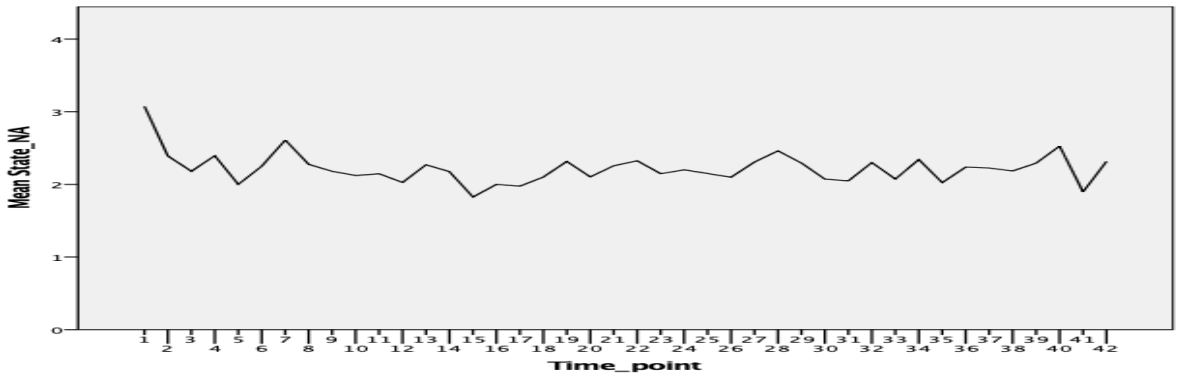


Figure 3. 5. Momentary pattern of state negative affect

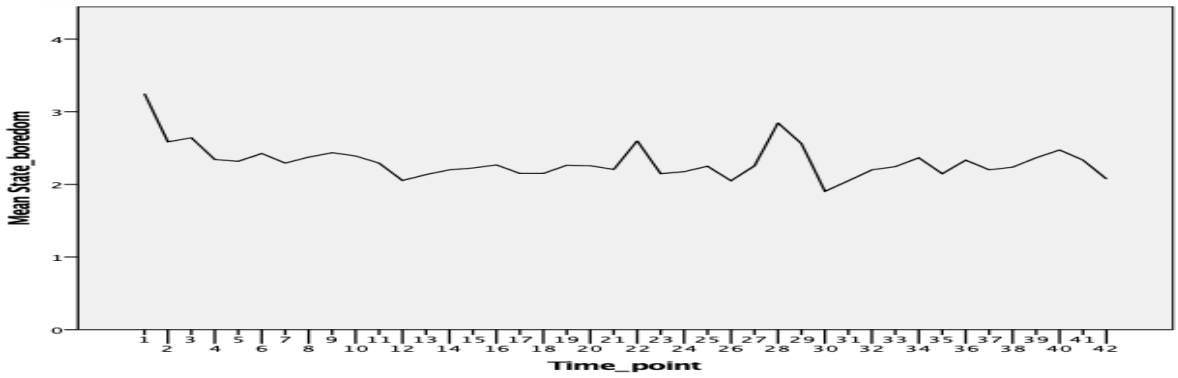


Figure 3. 6. Momentary pattern of state boredom

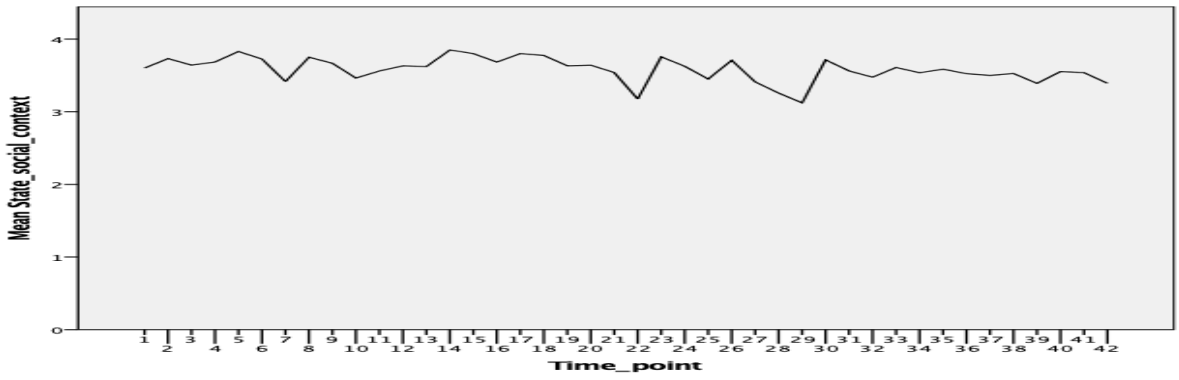


Figure 3. 7. Momentary pattern of satisfaction with the social context

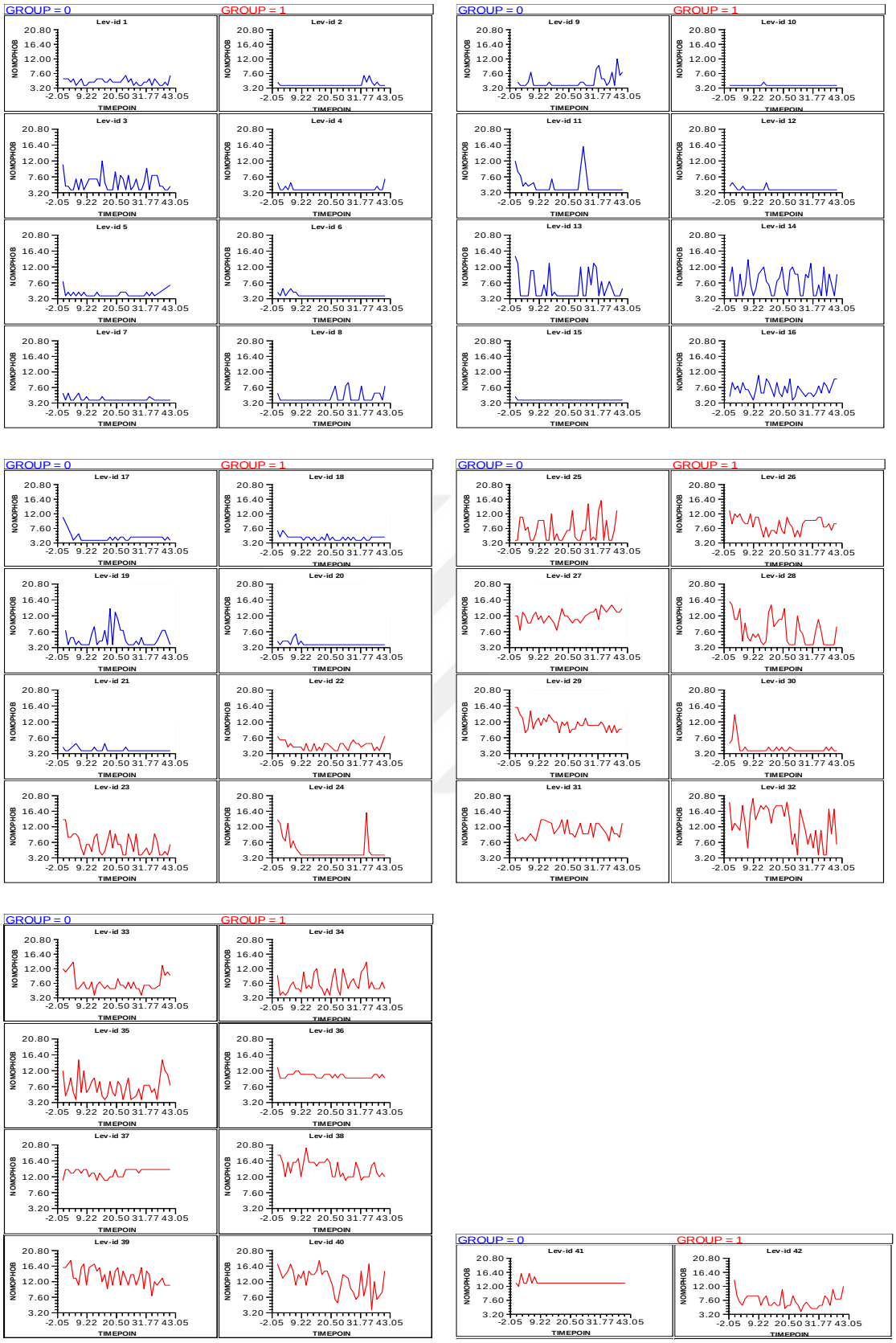


Figure 3. 8. Momentary nomophobia pattern of each participant

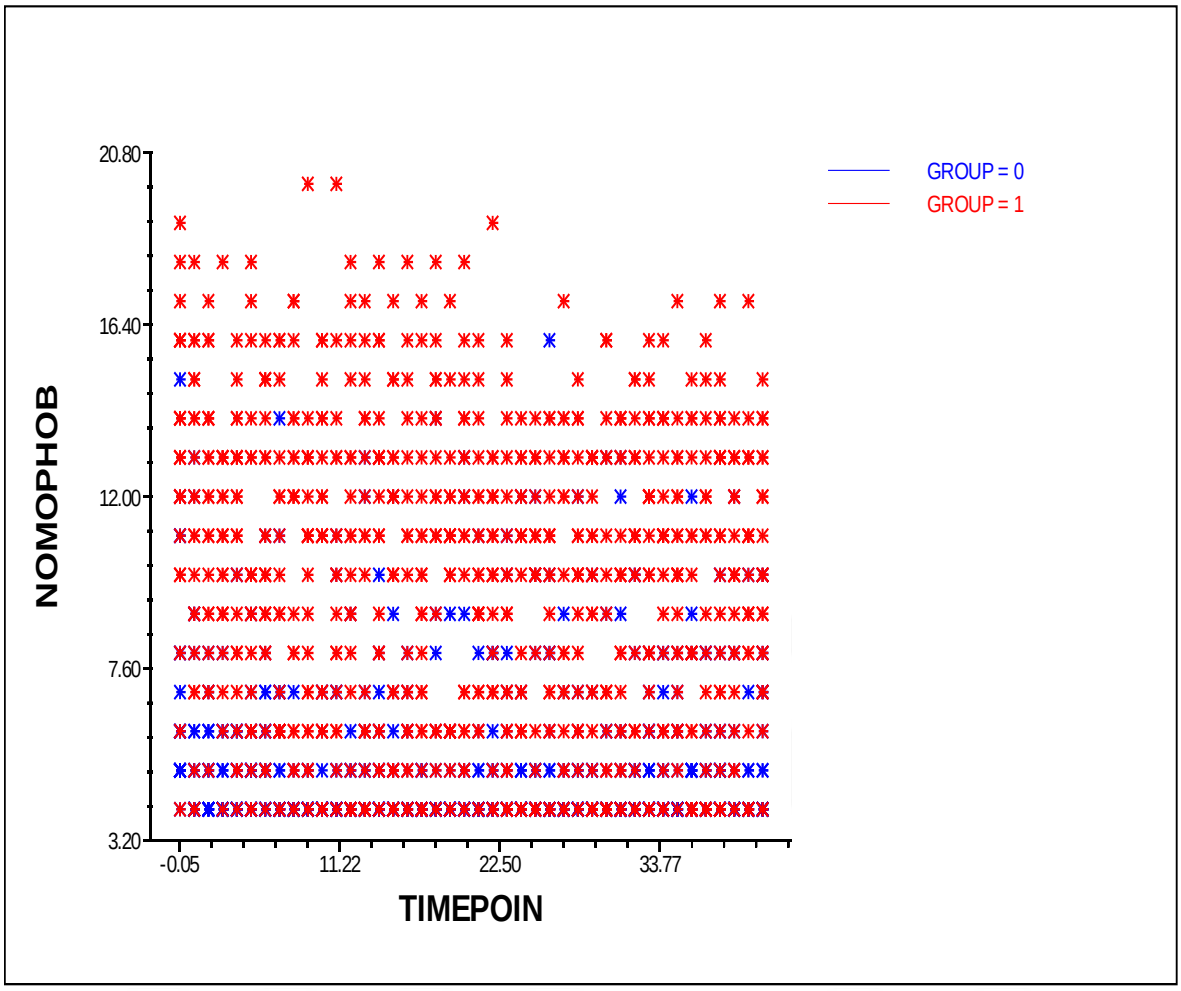


Figure 3. 9. Momentary nomophobia pattern of all participants by group

APPENDIX N: DAILY NOMOPHOBIA PATTERN OF EACH PARTICIPANT

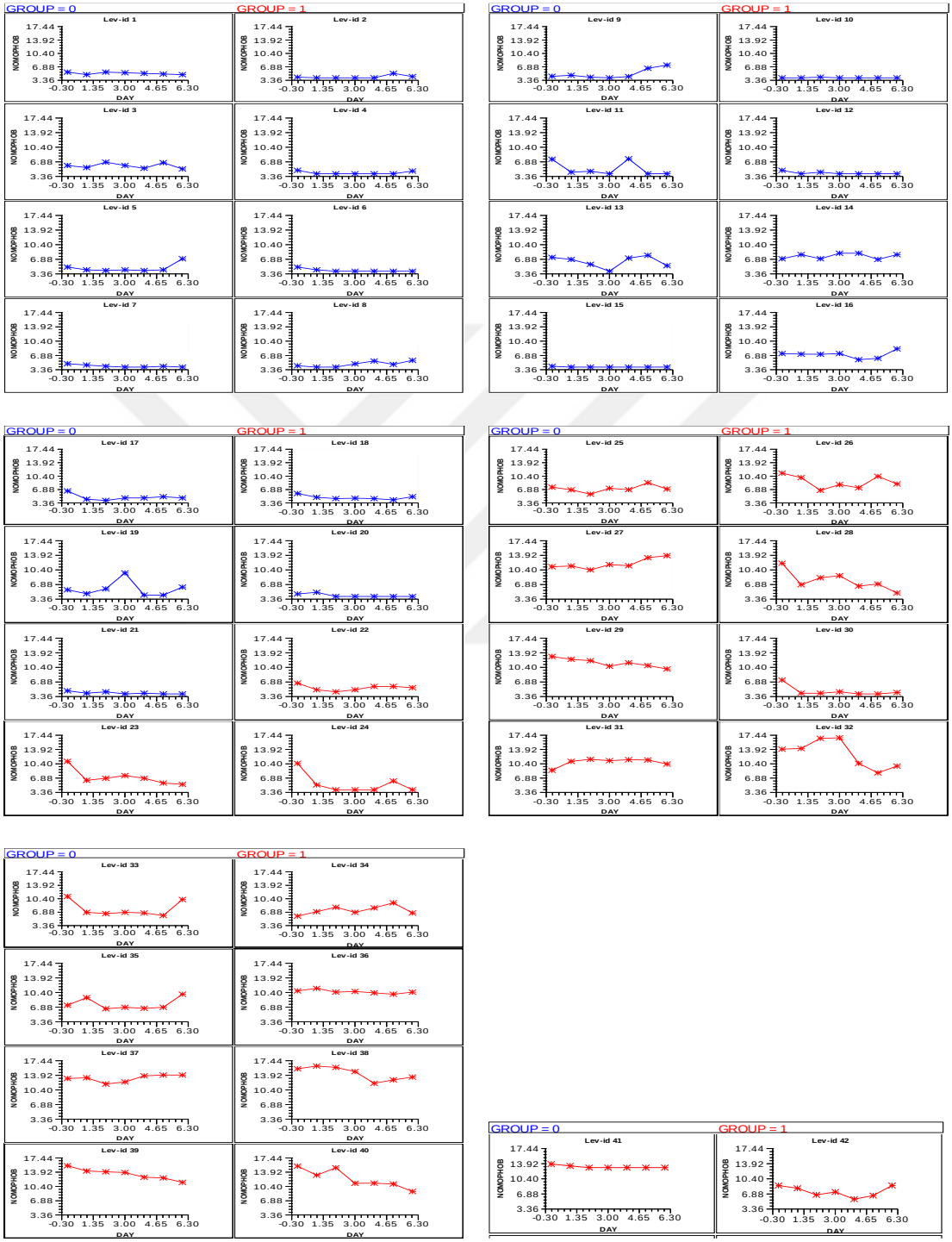


Figure 3. 10. Daily nomophobia pattern of each participant

APPENDIX O: DAILY NOMOPHOBIA PATTERN OF ALL PARTICIPANTS BY GROUP

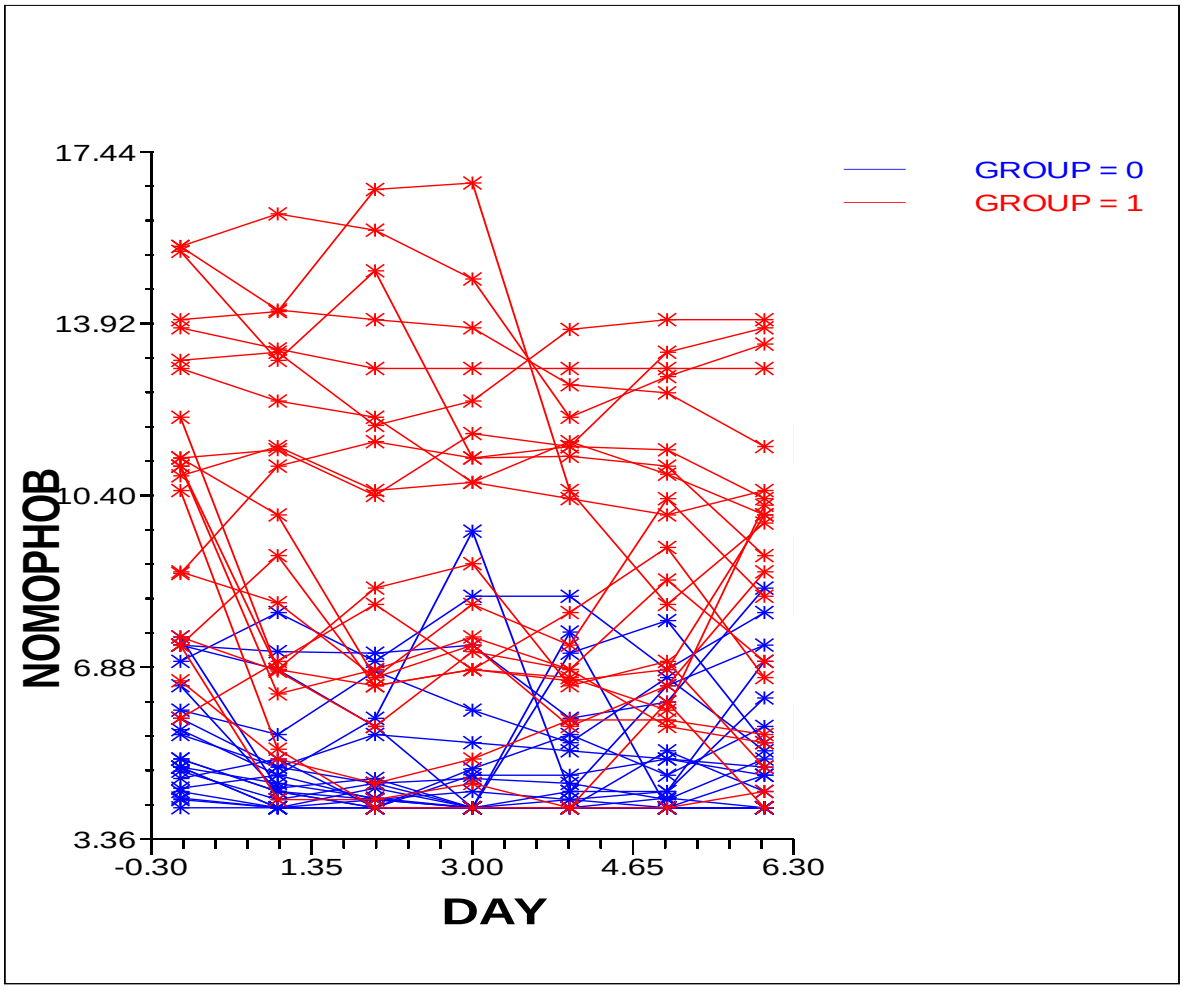


Figure 3. 11. Daily nomophobia pattern of all participants by group

APPENDIX P: DAILY PATTERNS OF THE LEVEL 1 PREDICTORS

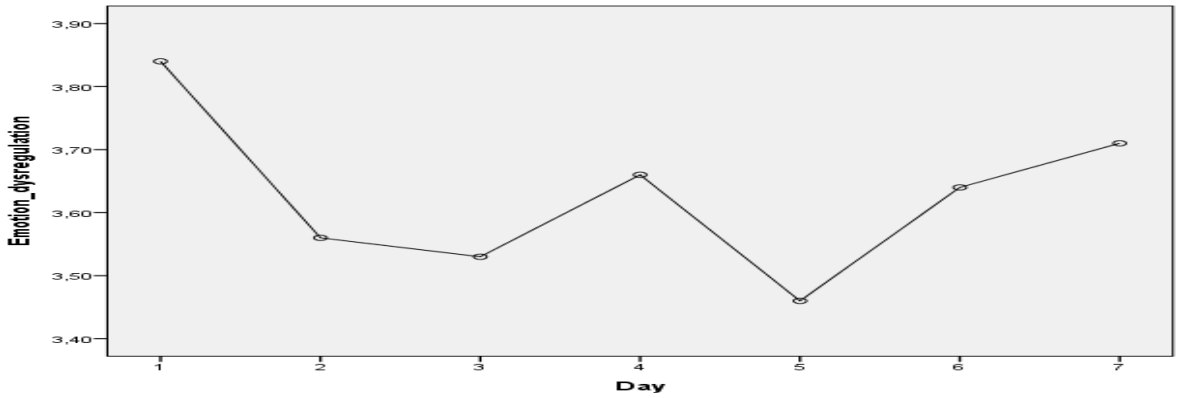


Figure 3. 12. Daily pattern of emotion dysregulation

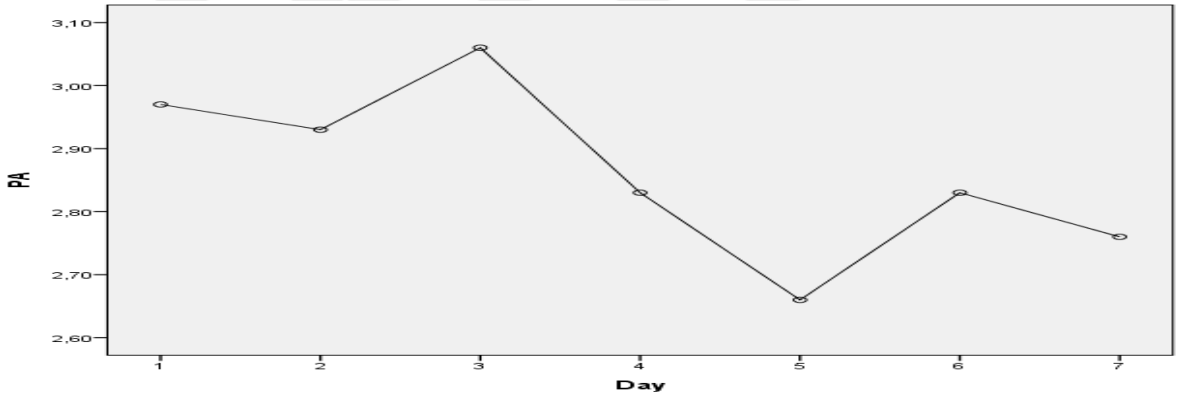


Figure 3. 13. Daily pattern of positive affect

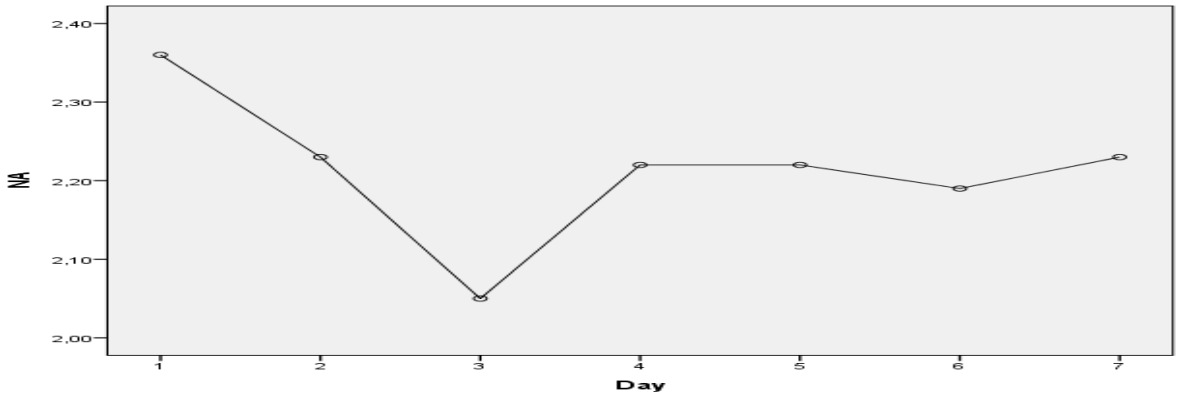


Figure 3. 14. Daily pattern of negative affect

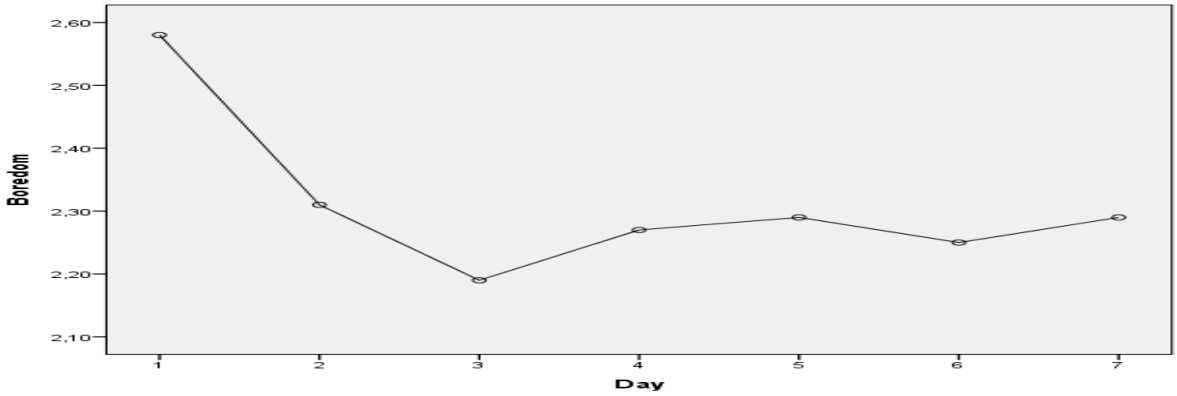


Figure 3. 15. Daily pattern of boredom

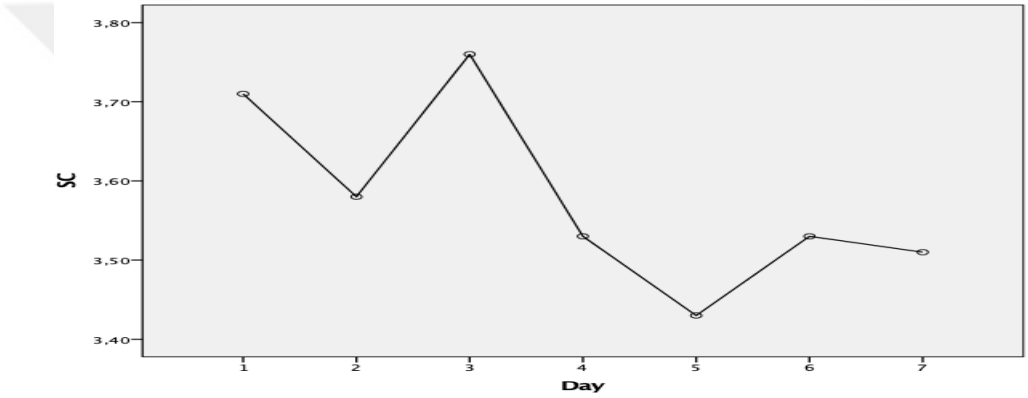


Figure 3. 16. Daily pattern of satisfaction with the social context

APPENDIX Q: DAILY MEAN VALUES OF THE LEVEL 1 PREDICTORS IN THE GROWTH CURVE MODEL

Table 3. 11. Daily pattern of variables

		Days						
Variables		1	2	3	4	5	6	7
Daily nomophobia	Mean	8.19	7.32	7.13	7.2	6.88	7.05	7.13
	SD	3.6	3.63	3.71	3.56	3.07	3.14	3.12
	Min	4.00	4.00	4.00	4.00	4.00	4.00	4.00
	Max	15.50	16.17	16.67	16.80	13.80	14.00	14.00
Daily EDR	Mean	3.84	3.56	3.53	3.66	3.46	3.64	3.71
	SD	1.65	1.63	1.69	1.65	1.54	1.58	1.69
	Min	2.00	2.00	2.00	2.00	2.00	2.00	2.00
	Max	8.00	8.00	7.60	7.60	8.00	8.00	8.00
Daily PA	Mean	2.97	2.93	3.06	2.83	2.66	2.83	2.76
	SD	.75	.89	.85	.83	.90	.80	1.01
	Min	1.00	1.00	1.00	1.00	1.00	1.00	1.00
	Max	4.20	4.40	5.00	5.00	5.00	4.50	5.00
Daily NA	Mean	2.36	2.23	2.04	2.22	2.22	2.19	2.23
	SD	.80	.99	.80	.99	.96	.93	.99
	Min	1.00	1.00	1.00	1.00	1.00	1.00	1.00
	Max	4.00	4.33	4.00	4.20	4.17	4.60	5.00
Daily boredom	Mean	2.58	2.31	2.19	2.27	2.29	2.25	2.29
	SD	1.00	1.04	.96	.99	.95	1.03	1.02
	Min	1.00	1.00	1.00	1.00	1.00	1.00	1.00
	Max	4.67	4.67	4.83	4.40	4.17	4.60	4.60
Daily SC	Mean	3.72	3.58	3.76	3.54	3.43	3.54	3.51
	SD	.74	.84	.67	.73	.71	.73	.83
	Min	2.00	1.83	2.33	2.00	1.83	1.83	1.00
	Max	5.00	5.00	5.00	5.00	4.67	5.00	5.00

Note. N= Number, M = Mean, SD = Standard deviation, Min= Minimum, Max= Maximum, EDR= Emotion dysregulation, PA= Positive affect, NA= Negative affect, SC= Social context.

APPENDIX R: RELIABILITY ESTIMATES OF THE NULL MODEL, THE LINEAR GROWTH MODEL, THE QUADRATIC GROWTH MODEL, AND MODEL 3

Table 3. 12. Reliability estimates of the null model, the linear growth model, the quadratic growth model, and Model 3

Random level 1 coefficient	Reliability estimate			
	Null model	Linear growth	Quadratic growth	Model 3
Intercept (π_0)	.977	.958	.941	.858
Day	-	.632	.410	.375
Day ^{2}	-	-	.431	.431

APPENDIX S: RESIDUAL ANALYSES OF THE RANDOM INTERCEPT AND SLOPE MODEL

In Model 2, the following assumptions were controlled before interpreting the results. First, the assumption of normal distribution of residuals was examined by skewness and kurtosis values. According to the results, skewness and kurtosis values of the level 1 residual errors (l1resid) were .61 and 2.61, respectively. The standard errors of skewness and kurtosis values were .06 and .12, respectively. Skewness and kurtosis values of the level 2 residual errors (mdist) were 1.42 and 1.71, respectively. The standard errors of skewness and kurtosis values were .37 and .72, respectively. These findings confirm the assumption of normality (acceptable range is -3 to +3) (Brown, 2006).

The assumption of the homogeneity of the level 1 and level 2 variances was estimated from the multivariate normal distributions of errors. Multivariate normal distribution requires multivariate homogeneity (Tabachnick & Fidell, 2007). When Figure 3.17 is examined, it is found that the level 1 errors confirm the assumption of the homogeneity of the level 1 variances, and the linearity assumption between the observed and fitted values.

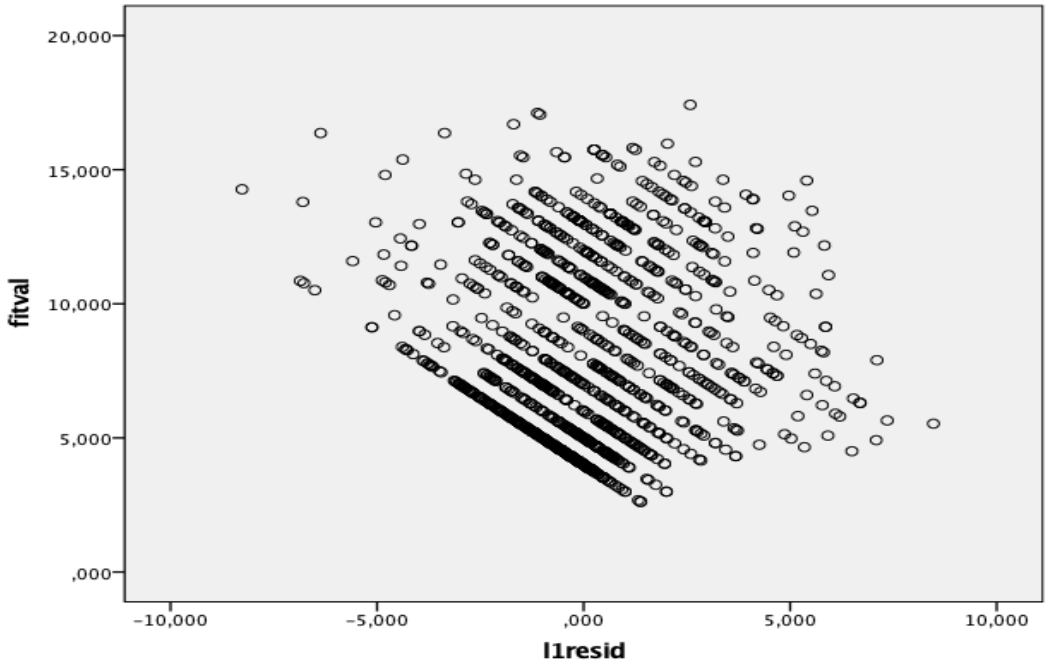


Figure 3. 17. Scatterplot of the level 1 errors and the linearity between the observed and fitted values

When Figure 3.18 is examined, it is possible to say that the level 2 residual values have a multivariate normal distribution and the residuals are homogeneous. The figure also confirms the linearity assumption between the observed and fitted values.

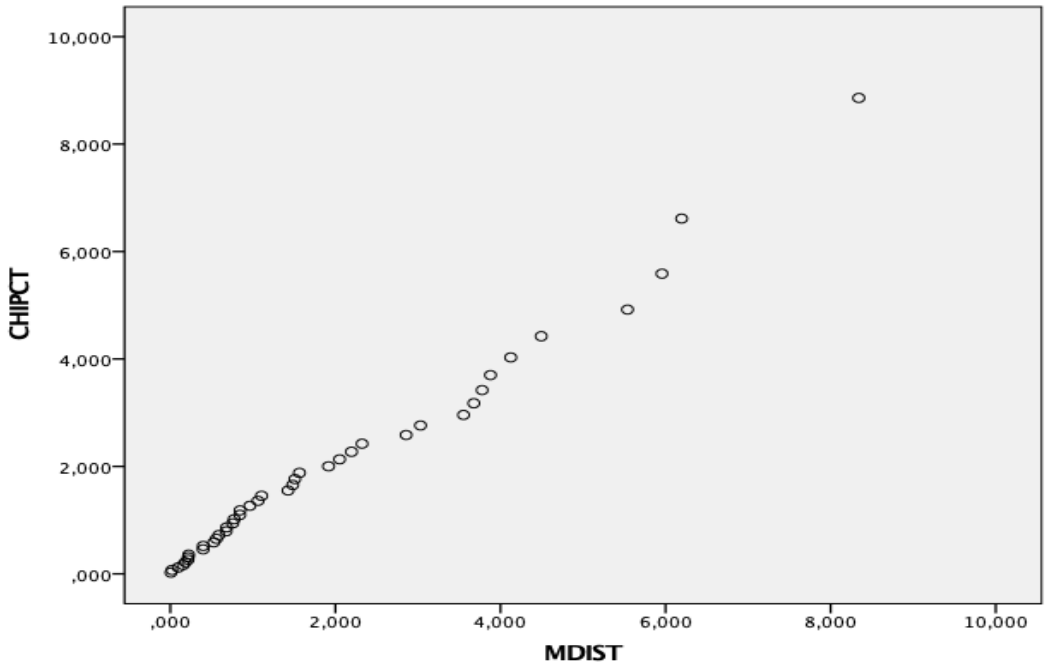


Figure 3. 18. Scatterplot of the level 2 errors and the linearity between the observed and fitted values

However, based on Figure 3.17, one can say that the homogeneity assumption might have been violated in Model 2 because the scatterplots are open to subjective evaluation to a certain extent. The violation indicates that residual variances differ significantly for these data across participants. Therefore, based on the recommended procedure (Garson, 2014a; Hedeker & Mermelstein, 2007; Hoffman & Stawski, 2009; Kim & Choi, 2008; Raudenbush & Bryk, 2002; Trull et al., 2008), a heterogeneous variance model was created. In a heterogeneous variance model, the outcome variable is assumed to have different error variances for different levels of some grouping variable (Garson, 2014a). Therefore, one-way analysis of variance (ANOVA) test was performed to determine which variable could be used as a predictor of the level 1 residual variance. The findings showed that the residual sum of squares for the non-nomophobia group was 3030.64 and for the nomophobia group was 12576.84. According to these findings, group was a candidate predictor to be specified in the heterogeneous variance model. Greater within-person momentary variation (i.e. less stability) of state nomophobia was observed in the nomophobic participants. To check

whether the level 1 variance may differ between the two groups, the Heterogeneous sigma^2 option was used to model the level 1 variance as a function of group. The equation for the Heterogeneous model was as follows:

Level 1

State nomophobia$_{ti}$ = π_{0i} + π_{1i}*(State emotion dysregulation$_{ti}$) + π_{2i}*(State Positive affect$_{ti}$) + π_{3i}*(State negative affect$_{ti}$) + π_{4i}*(State boredom$_{ti}$) + π_{5i}* (Social context$_{ti}$) + e$_{ti}$

Level 2

$\pi_{0i} = \beta_{00} + \beta_{01}$*(Trait nomophobia$_i$) + r$_{0i}$

$\pi_{1i} = \beta_{10}$ +r$_{1i}$

$\pi_{2i} = \beta_{20}$

$\pi_{3i} = \beta_{30}$

$\pi_{4i} = \beta_{40}$ + r$_{4i}$

$\pi_{5i} = \beta_{50}$ + r$_{5i}$

In this model, level 1 variance equation was as follows:

Var(R) = σ^2 and log(σ^2) = α_0 + α_1(Group)

The deviance from the null model to the Heterogeneous variance model was statistically significant (χ^2 (17) = 586.15, p< .001). The chi-square deviance test was significant (χ^2 (1) = 116.54, p< .001), indicating that the Heterogeneous variance model fit the data better than the Homogeneous variance model.

In the Heterogeneous variance model, level 2 variance was 4.64. Level 1 variance for the intercept (α_0) was statistically significant (β= .73, SE= .05, Z= 14.35, p< .001). Z-ratio for α_1 (β= .79, SE= .07, Z= 10.99, p< .001) indicates that the nomophobia scores of the nomophobia group were, on average, higher than the non-nomophobia group. In addition, the nomophobia group had a greater variance in state nomophobia than the non-nomophobia group.

To present the difference more clearly, the Homogeneous variance model and the Heterogeneous variance model were represented in Table 3.13, and reliability estimates were given in Table 3.14.

Table 3. 13. Parameter estimates of the Heterogeneous variance model and the Homogeneous variance model

	Heterogeneous model					Homogeneous model				
Fixed effects	β	SE	df	t	p	β	SE	df	t	p
For Intercept 1 (π_0)										
Intercept 2 (β_{00})	7.26*** [6.59,7.93]	.34	40	21.57	<.001	7.26*** [6.59,7.93]	.34	40	21.56	<.001
Trait nomophobia	1.27*** [.94,1.60]	.17	40	7.56	<.001	1.27*** [.94,1.60]	.17	40	7.54	<.001
For Slope (π_0)										
State EDR	.42*** [.24,.60]	.09	41	4.75	<.001	.41*** [.23,.59]	.09	41	4.67	<.001
State PA	.15* [.01,.29]	.07	1509	2.45	.02	.21** [.05,.37]	.08	1509	2.57	.01
State NA	.19* [.03,.35]	.08	1509	2.35	.02	.21* [.05,.37]	.08	1509	2.52	.01
State boredom	.24** [.10,.38]	.07	41	3.21	.003	.28*** [.12,.44]	.08	41	3.65	<.001
State SC	.24* [.02,.46]	.11	41	2.26	.03	.25* [.01,.49]	.12	41	2.11	.04
Random effects	Variance	SD	df	χ^2	p	Variance	SD	df	χ^2	p
Within-person (e)	-	-	-	-	-	3.32 [-.25,6.89]	1.82			
Between-person (r_0)	4.64*** [.43,8.85]	2.15	36	1918.65	<.001	4.68*** [.45,8.91]	2.16	36	2263.91	<.001
State EDR	.20*** [-.66,1.06]	.44	37	132.16	<.001	.19*** [-.65,1.03]	.43	37	133.97	<.001
State boredom	.15*** [-.59,.89]	.38	37	77.36	<.001	.14*** [-.60,.88]	.38	37	73.23	<.001
State SC	.26*** [-.74,1.26]	.51	37	105.28	<.001	.33*** [-.79,1.45]	.57	37	112.42	
Goodness of fit										
Deviance	6951.86					7068.41				
Parameters	19					18				
AIC	6989.86					7104.41				
BIC	6978.84					7097.57				

Note. * p< .05, ** p< .01, ***p< .001. EDR= Emotion dysregulation, PA= Positive affect, NA= Negative affect, BP= Boredom proneness, SC= Social context, AIC= Akaike information criterion, BIC= Bayesian information criterion, SE= Standard error. Values in square brackets indicate the 95% confidence interval for each coefficient.

Table 3. 14. Reliability estimates of the Heterogeneous variance model and the Homogeneous variance model

Random level 1 coefficient	Reliability estimates	
	Homogeneous model	Heterogeneous model
Intercept (π_0)	.983	.982
State EDR	.648	.667
State boredom	.477	.493
Social context	.609	.568

Note. EDR= Emotion dysregulation

In the main text, instead of the Heterogeneous variance model, the random intercept and slope model has been reported. The impact of violations is not fully understood, but violations may lead to less efficient estimation of coefficients (Bryk & Raudenbush, 1992). The heterogeneity of the level 1 residual variance may be due to at least one unspecified predictor. However, in reality, it is not possible to identify all relevant predictors. Although there are heterogeneous variance models in the literature, they are not commonly used in longitudinal studies (Leckie et al., 2014). Moreover, the test of heterogeneity of variance should be used cautiously if participants are assessed less than 11 times (Raudenbush & Bryk, 2002; Snijders & Bosker, 1999). This restriction may be a limiting factor in studies with fewer assessments, but each participant completed at least 36 assessments in this dissertation. Moreover, according to the level 1 residual analysis of Model 2, the possibility of model misspecification was eliminated since the assumptions of linearity and normal distribution were confirmed in Model 2. In addition, when the results are compared, the coefficients show little difference between the Heterogeneous variance model and Model 2 (See Table 3.5). Therefore, based on the parsimony principle (Peugh & Heck, 2016), the heterogeneous variance model was not reported in the main text.

APPENDIX T: RESIDUAL ANALYSES OF THE GROWTH MODEL

In Model 3, the same assumptions were tested for the growth model. According to the results, skewness and kurtosis values of the level 1 residuals errors (l1resid) were .55 and 2.79, respectively. The standard errors of skewness and kurtosis values were .14 and .28, respectively. Skewness and kurtosis values of the level 2 residual errors (mdist) were 1.33 and 1.24, respectively. The standard errors of skewness and kurtosis values were .37 and .72, respectively. These findings confirm the assumption of normality (Brown, 2006).

Similarly, the assumption of the homogeneity of the level 1 and level 2 variances was estimated from the multivariate normal distributions of errors (Tabachnick & Fidell, 2007). Figure 3.19 shows that the level 1 errors confirm the assumption of the homogeneity of the level 1 variances, and the linearity assumption between the observed and fitted values.

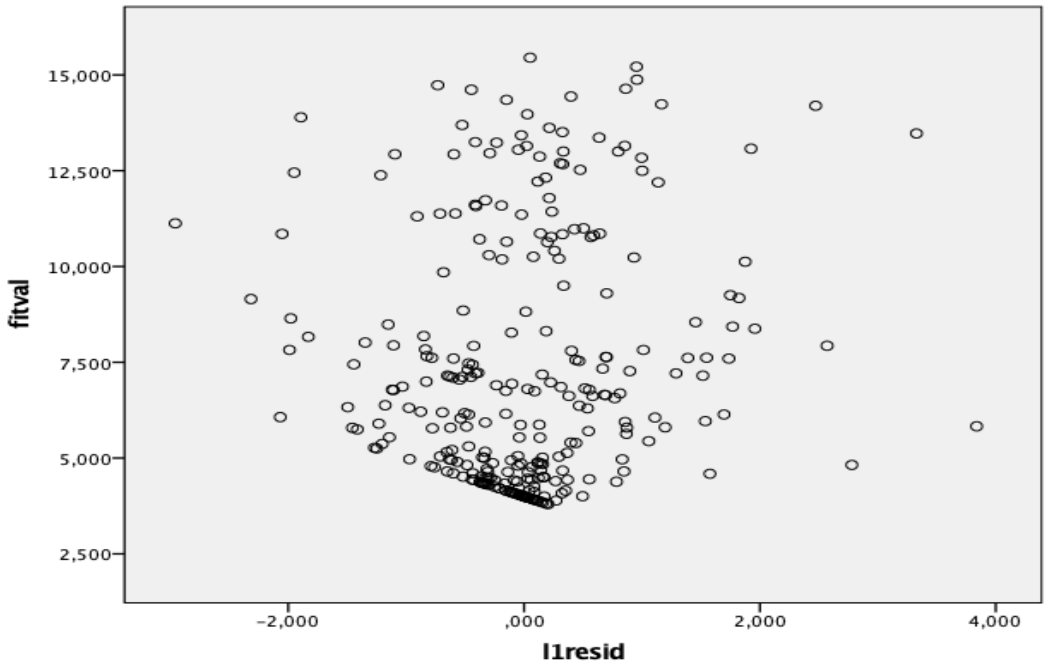


Figure 3. 19. Scatterplot of the level 1 errors and the linearity between the observed and fitted values

Figure 3.20 indicates that the level 2 residual values have a multivariate normal distribution and the residuals are homogeneous. Figure 3.20 also confirms the linearity assumption between the observed and fitted values.

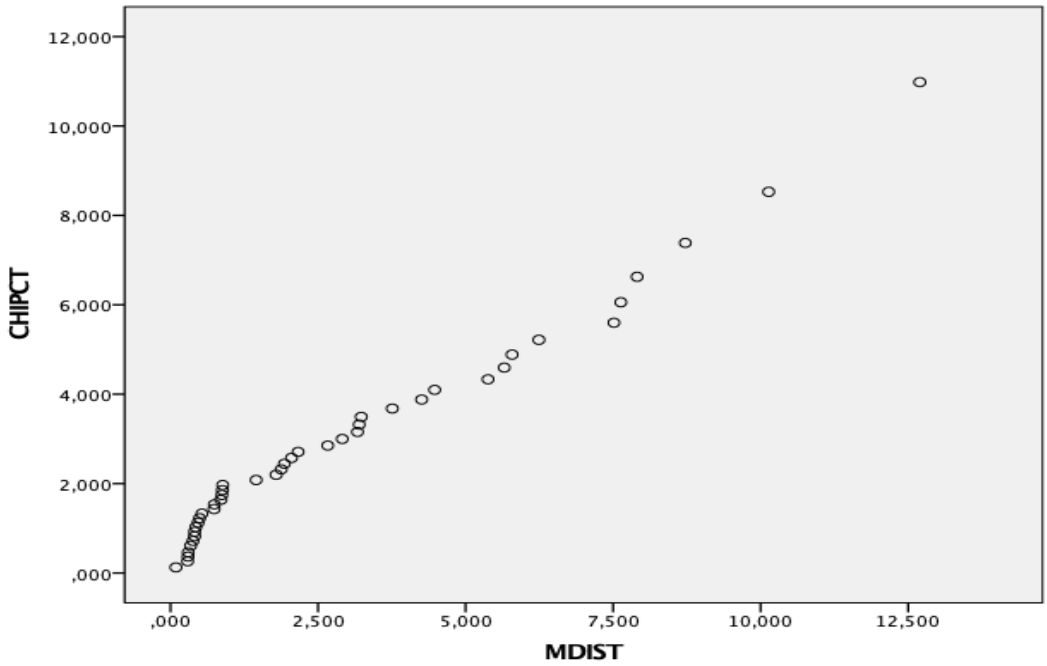


Figure 3. 20. Scatterplot of the level 2 errors and the linearity between the observed and fitted values

APPENDIX U: CURRICULUM VITAE