T.R.
ANKARA YILDIRIM BEYAZIT UNIVERSITY
INSTITUTE OF PUBLIC HEALTH

THE HEALTH AND NUTRITIONAL STATUS OF PREGNANT WOMEN BASED IN RURAL IDLEB IN 2020

MASTER'S THESIS

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I affirm that this thesis has not been previously submitted in this form and that any information sourced from others' work is properly cited. Therefore, I have not violated any copyright or intellectual property laws.

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TABLE OF CONTENTS

PLAGIARISM I

DECLARATION II

ACKNOWLEDGMENT III

TABLE OF CONTENTS IV

ABSTRACT VII

ÖZET IX

LIST OF TABLES XII

LIST OF ABBREVIATIONS XIII

1. INTRODUCTION 1

1.1. Background 1

1.1.1. Maternal Medical Risk Signs: 2

1.2. Problem Statement 3

1.3. Justification of The Study 4

1.4. Objectives 5

1.4.1. General Objective 5

1.4.2. Specific Objectives 5

1.5. Hypothesis 5

2. GENERAL INFORMATION 7

2.1. Northwest Syria Context 7

2.1.1. Population 7

2.1.2. Economic Crisis 8

2.1.3. Education 9

2.2. Healthcare System in Syria 10

2.2.1. Before The Crisis 10

2.2.2. During The Crisis 11

2.2.3. After The Crisis: Post-Conflict Needs Assessment 13

2.2.4. The Syrian Board of Medical Specialties -SBOMS in NWS 14

2.3. Literature Review 15

2.3.1. Introduction 15

2.3.2. Global Maternal Malnutrition 16

2.3.3. The Risk of Micronutrient Deficiency During Pregnancy 16

2.3.4. How Pregnant Women Are Affected by Anaemia Risk 16

2.3.5. The Pregnant Women Affecting Factors in The NWS After 12 Years of Conflict 17

2.3.6. Maternal Mortality 18
2.3.7. Vitamin D 18
2.3.8. Vitamin A 18
2.3.9. Folic Acid During Pregnancy 19
2.3.10. Maternal Mortality and COVID-19 19
2.3.11. Women's Health Status in The Rural Part of Northwest Syria 20
2.3.12. Women's Nutrition Status in The Rural Part of Northwest Syria 20
2.3.13. The Different Health and Nutrition Services Between Urban and Rural Areas 20
2.3.14. What's The Difference Between Moderate Acute Malnutrition (Maternal Malnutrition) For PLW and Acute Malnutrition? 21
3. MATERIAL AND METHODOLOGY 22
3.1. Study Design 22
3.2. Study Population 22
3.3. Sample Size 22
3.5. Study Location 22
3.6. Data Collection Tool 24
3.7. Data Collection Process 24
3.8. Data Collection Period 24
3.9. Included And Excluded Criteria 25
3.9.1. Included Criteria 25
3.9.2. Excluded Criteria: 25
3.10. Study Variables 25
3.10.1. Dependent Variables 25
3.10.2. Independent Variables 26
3.11. Data Analysis Plan 26
3.12. Strength And Limitations 27
3.12.1. Strength 27
3.12.2. Limitations 27
3.13. Ethical Approval Considerations 28
4. RESULTS 29
4.1. Descriptive statistics 29
4.1.1. Demographic And Living Conditions 29
4.1.2. IDP Or Resident Status: 29
4.1.3. Age Distribution of The Pregnant Women in The Study 30
4.1.4. Nutritional Status 30
4.1.5. Health Risk Signs and Disease 31

4.1.6. Supplement Intake 31
4.1.7. Health services accessibility (Medical Check Ups) 32
4.2. Bivariate Analysis 32
4.2.1. Hypothesis 1 (H1) 33
4.2.2. Hypothesis 2 (H1) 35
4.2.3. Hypothesis 3 (H1) 37
4.2.4. Hypothesis 4 (H1) 39
4.2.5. Hypothesis 5 (H1) 40
4.2.6. Hypothesis 6 (H1) 41
5. DISCUSSION 44
6. CONCLUSION AND RECOMMENDATIONS 49
6.1. Conclusion 49
6.2. Recommendations 51
7. REFERENCES 53
8. APPENDIX 59
8.1. Appendix 1: Organization Approval – SEMA 59
8.2. Appendix 2: Ethical Approval 60
8.3. Appendix 3: Questionnaire 61
8.4. Appendix 4: Curriculum Vitae 66
8.5. Appendix 5: Photos From NWS Communities 69

ABSTRACT

Master's Thesis

THE HEALTH AND NUTRITIONAL STATUS OF PREGNANT WOMEN BASED IN RURAL IDLEB IN 2020

BASEM ZOUHAIR SHAHER

Thesis Supervisor

Assoc. Prof. Dr. Nimetcan Mehmet ORHUN

Background: During 2020, a year of conflict and displacement, in Idlib, Syria this research delves into the health and nutrition of women. The aim of the study was to assess health risks and nutritional deficiencies, evaluate the impact of healthcare service availability, and compare the conditions of resident and displaced pregnant women.

Method: The study in 2020 involved 15,998 women residing in Idlib, Syria both within camps and outside. We utilized questionnaires and field surveys employing bivariate statistics to collect data. By exploring factors such as status, health risks and healthcare accessibility we aimed to understand the difficulties encountered by this group.

Result: The findings revealed that 10.2% of the surveyed women experienced acute malnutrition, with the highest levels observed among those aged 18 to 25 years. Notably, 86% of the women were displaced persons (IDPs), and only 14.3% of camp residents had access to nutritional supplements. Specifically, 36% of the women experienced fatigue, dizziness, and abdominal discomfort, while 28% reported no health problems. Despite regular check-ups being associated with reported health concerns, there was no association found between these check-ups and cases of maternal anemia.

Conclusion: the study found that 10.2% of women, particularly those aged 18 to 25 and displaced, suffer from acute malnutrition. Limited access to nutritional supplements exacerbates this issue. Health problems, while not life-threatening, could negatively impact both women and their babies. Common symptoms include fatigue, dizziness, and abdominal

discomfort. No link was found between check-ups and maternal anemia, suggesting that enhanced nutritional support is essential for improving health outcomes.

Keywords: Maternal health, nutritional status, rural Idlib, conflict, displacement, healthcare access.

ÖZET

Yüksek Lisans Tezi

2020 YILINDA KIRSAL İDLİB'DE YAŞAYAN GEBE KADINLARIN SAĞLIK VE BESLENME DURUMU

BASEM ZOUHAIR SHAHER

Tez Danışmanı

Doç. Dr. Nimetcan Mehmet ORHUN

Giriş: Bu araştırma, 2020 yılında çatışma ve yerinden edilme koşullarının yaşandığı Suriye'nin İdlib kentinde kadınların sağlık ve beslenme durumunu incelemektedir. Çalışmanın amacı, sağlık risklerini ve beslenme eksikliklerini değerlendirmek, sağlık hizmetlerinin erişilebilirliğinin etkisini araştırmak ve yerleşik ile ve yerinden edilmiş hamile kadınların koşullarını karşılaştırmaktır.

Yöntem: Çalışma, 2020 yılında Suriye'nin İdlib kentinde**,** kamplarda ve kamp dışında yaşayan toplam 15.998 kadını kapsamaktadır. Veri toplamak amacıyla iki değişkenli istatistikler kullanan anketler ve saha araştırmaları gerçekleştirilmiştir. Statü, sağlık riskleri ve sağlık hizmetlerine erişim gibi faktörleri araştırarak bu grubun karşılaştığı zorlukları anlamayı hedefledik.

Bulgular; ankete katılan kadınların %10,2'sinin akut malnütrisyon yaşadığını ve en yüksek oranların 18-25 yaş arası kadınlarda görüldüğünü ortaya koymuştur. Kadınların %86'sının yerinden edilmiş kişiler (IDP'ler) olduğu ve kamp sakinlerinin sadece %14,3'ünün besin takviyelerine erişebildiği belirlenmiştir. Özellikle, kadınların %36'sı yorgunluk, baş dönmesi ve karın rahatsızlığı yaşarken, %28'i herhangi bir sağlık sorunu bildirmemiştir. Düzenli kontrollerin bildirilen sağlık sorunlarıyla ilişkili olmasına rağmen, bu kontroller ile maternal anemi vakaları arasında bir bağlantı bulunamamıştır.

Sonuç: Çalışma, özellikle 18-25 yaş arasındaki yerinden edilmiş kadınların %10,2'sinin akut malnütrisyon yaşadığını ortaya koymuştur. Besin takviyelerine sınırlı erişim bu durumu daha da kötüleştirmektedir. Sağlık sorunları yaşamı tehdit etmese de, hem kadınların hem de bebeklerinin refahını olumsuz etkileyebilir. Yaygın semptomlar arasında yorgunluk, baş dönmesi ve karın rahatsızlığı yer almaktadır. kontroller ile maternal anemi vakaları arasında bir bağlantı bulunamamıştır;

bu da sağlık sonuçlarının iyileştirilmesi için geliştirilmiş beslenme desteğinin gerekli olduğunu göstermektedir.

Anahtar Kelimeler: Anne sağlığı, beslenme durumu, kırsal İdlib, çatışma, yerinden edilme, sağlık hizmetlerine erişim**.**

LIST OF FIGURES

Figure 1: Syria map, including Idlib province, highlighted in yellow[18] 8
Figure 2: Map of study location 23
Figure 3: SEMA RRT field visit in Harim district, rural Idlib 69
Figure 4: SEMA RRT camp visit in M. Elekhwan, rural Idlib 69
Figure 5: SEMA RRT hand-washing awareness-raising activity, rural Idlib..... 70
Figure 6: SEMA RRT camp visit in Salqin, rural Idlib 70

LIST OF TABLES

Table 1: Source of data locations **23**
Table 2: Residence of the pregnant women (N=15998) **29**
Table 3: IDP or resident status for pregnant women (N=15998) **30**
Table 4: Age distribution of the pregnant women in the study (N=15998) **30**
Table 5: Malnutrition among pregnant women (N=1629) **31**
Table 6: Health Risk Signs and Disease (N=581) **31**
Table 7: Pregnant women's supplement intake (N=12385) **32**
Table 8: Access to Healthcare (Medical Check-ups) (N=4909) **32**
Table 9: Access to the nutritional supplements (N=12385) **33**
Table 10: Chi-square tests for the first hypothesis **33**
Table 11: Pearson and Phi coefficients **34**
Table 12: Medical risk signs among pregnant women (N=581) **35**
Table 13: Chi-square tests for the second hypothesis **35**
Table 14: The Phi value to detect the association between the variables **36**
Table 15: The periodic pre-pregnancy check-ups at the medical centre (N=4909) **37**
Table 16: Chi-square tests for the third hypothesis **37**
Table 17: Pearson and Phi coefficients for the third theory **38**
Table 18: Regular prenatal check-ups (N=4909) **39**
Table 19: Chi-square tests for the fourth hypothesis **39**
Table 20: Pearson and Phi coefficients for the fourth theory **40**
Table 21: The age distribution data and health risk signs (N=581) **41**
Table 22: Chi-square tests for the fifth hypothesis **41**
Table 23: Women risk signs in and off camps (N=581) **42**
Table 24: Chi-square tests for the sixth hypothesis **42**
Table 25: Pearson and Phi coefficients for the sixth theory **43**

LIST OF ABBREVIATIONS

ANC: Antenatal Care

AYBU: Ankara Yildirim Beyazit University

BMI: Body Mass Index

COVID-19: Coronavirus Disease 2019

ECMO: Extracorporeal Membrane Oxygenation

GAM: Global Acute Malnutrition

GoS: Government of Syria

IDP: Internally Displaced Person

IMU: Information Management Unit

LBW: Low Birth Weight

MAM: Moderate Acute Malnutrition

NGO: Non-Governmental Organization

NWS: Northwest Syria

PHC: Primary Health Care

RRT: Rapid Response Team

SAM: Severe Acute Malnutrition

SBOMS: Syrian Board of Medical Specialties

SEMA: Syrian Expatriate Medical Association

SFP: Supplement Feeding Program

UNICEF: United Nations International Children's Emergency Fund

VAD: Vitamin A Deficiency

WFP: World Food Program

WHO: World Health Organization

1. INTRODUCTION

1.1. Background

Malnourishment in childhood and adolescence (including wasting, stunting, and micronutrient deficiencies) has lasting effects on a student's educational readiness, enrolment, and learning performance. These variables raise women's disease risk, death, and poor pregnancy outcomes. These results can transform into adult poverty due to fewer job prospects and reduced earnings and income, so creating a cycle of starvation that can affect future populations[1].

Malnutrition is insufficient or exceeding dietary support, an imbalanced intake of essential nutrients, or inefficient utilization. Malnourishment, overweight, and obesity, as well as diet-related noncommunicable diseases, all contribute to the combined burden of malnutrition. Undernourishment is characterized by stunting, wasting, being underweight, and nutritional deficiencies. Woman-specific malnutrition can be traced back to bad eating habits as well as inadequate health care[2]. When micronutrients are lacking in the diet, malnutrition, a hazardous disorder, occurs. It means "poor nutrition" and can refer to:

- Poor nutrition: inadequate nutritional intake.
- Overnutrition: receiving more nutrients than essential.

Over entire lifetimes, women require specific nutrition recommendations, especially before, within, and even after childbirth, as well as during breastfeeding, when the nutritional vulnerability is highest[3]. To ensure the well-being of both mothers and their children, it is vital that women have access to nourishing diets and proper care. Before becoming pregnant women should focus on consuming a diet to build up reserves. During pregnancy and breastfeeding, the energy and nutritional needs increase, making it essential for the health of both mother and child. Unfortunately, in some parts of the world, women's nutritional status falls short. Many women, teenagers and those at risk nutritionally are not receiving nutrition services to support their health and give their babies the best chance at survival and growth[4].

Additionally, in countries, women's diets lack food groups such as fruits, vegetables, dairy products, fish, and meat. Poor diets deficient in nutrients like iodine, iron, folate, calcium and zinc during pregnancy can lead to complications such as anaemia, pre-eclampsia, haemorrhage and even maternal mortality. Adverse outcomes like stillbirths, low birth weight,

wasting, and developmental delays can affect children. According to UNICEF estimates, each year, more than twenty million babies are born prematurely[5].

Moreover, poor nutrition poses challenges, for mothers in replenishing their reserves and meeting their heightened requirements during breastfeeding. Enhancing human development hinges on tackling malnutrition and deficiencies in nutrients. Factors such as poverty, food insecurity, lack of knowledge, inadequate infant and young child feeding practices, prevalence of diseases and substandard hygiene and sanitation collectively contribute to levels of malnutrition among mothers and children in developing countries[6].

In 2017, more than 295,000 women lost their lives during or after pregnancy and childbirth despite the progress made in healthcare in the past twenty years. This number is alarmingly high. The primary direct causes of mortality include blood loss, infections, hypertension, complications from unsafe abortions and obstructed labour. Additionally, indirect factors like anaemia, malaria and heart conditions contribute to deaths. Timely intervention by healthcare providers in an environment can prevent most maternal fatalities[7].

1.1.1. Maternal Medical Risk Signs:

In Gaziantep, Turkey, the Nutrition Cluster and the Reproductive Health Technical Working Group have collaborated on a guideline to help nutritionists and community health workers conduct health assessments for women during home visits. The goal is to define the criteria for identifying health issues that need immediate medical attention. This guideline includes a questionnaire for health workers to document any symptoms reported by women, focusing on key indicators of serious health conditions that require urgent care.

Key symptoms to be monitored include:

- Experiencing a headache or blurred vision could be signs of disorders like pre-eclampsia.
- Any instance of red or black liquid bleeding should be monitored as it may signal a risk of miscarriage or placental problems.
- Severe lower abdominal pain might point towards issues such as pregnancy or preterm labour.
- If there is a decrease or stoppage in movement, it could indicate fetal distress.

- Edema: Swelling in the hands, legs, and face, possibly indicating fluid retention or pre-eclampsia.
- Persistent Vomiting: Excessive vomiting that may lead to dehydration or be a symptom of hyperemesis gravidarum.
- Fever: High body temperature may be associated with various infections that could impact maternal and fetal health.
- Dysuria (Urinary Heartburn): A painful or burning sensation during urination potentially indicative of a urinary tract infection.
- Pallor: Unusual paleness that could suggest anaemia.
- Extreme Tiredness or Dizziness: Symptoms related to anaemia or other underlying conditions[8].

1.2. Problem Statement

In 2020, the global acute malnutrition rate went over 4% indicating a concerning issue of malnutrition that specifically impacts women in Syria. This research delves into Idlib, where numerous women, both locals and displaced persons (IDPs), encounter difficulties linked to malnutrition. These women, predominantly residing in camps, face challenges with access to food options. Fieldwork carried out by response teams in the region identified risk factors, highlighting the necessity for an investigation.

Many rural areas in Idlib have faced disruptions due to conflict and displacement, making it challenging for health and nutrition services to function effectively. The prolonged conflict has disrupted the healthcare system, impeding access to services and nutritional aid. Expectant mothers in this region are at risk due to malnutrition, displacement issues and insufficient healthcare services, resulting in rates of infant illness and death—a considerable public health concern.

My research analyzes the 2020 Rapid Response Team (RRT) data to uncover the reasons behind the heightened levels of malnutrition and health risks among women in Idlib. It compares the health status of women with those who have been displaced to pinpoint any differences or similarities in health deficiencies and risks. The study aims to delve into the complexities involved in meeting needs during pregnancy, postpartum periods well, as pre pregnancy. Women encountering challenges during displacement struggle to access resources,

like food, water and healthcare services resulting in adverse maternal health outcomes. Maternal malnutrition, as per the World Health Organization definition (BMI <18.5), signifies intake.

This situation not only heightens the risks of birth weight and preterm deliveries but also elevates maternal mortality rates. Understanding the impact of displacement on nutrition is crucial for designing interventions. The socio-economic instability and insecurity in Idlib further worsen these health concerns. Many expectant mothers in this region experience food insecurity, leading to deficiencies with health implications. The high prevalence of anaemia among women is particularly alarming due to its link to pregnancy complications such as stillbirths and an increased risk of postpartum bleeding.

My research aims to enhance our comprehension of factors influencing health in conflict-affected regions. It will offer insights into initiatives aimed at enhancing nutrition and overall well-being among women residing in communities worldwide. The findings are expected to be beneficial for healthcare professionals, policymakers and humanitarian groups by shedding light on the needs of mothers in Idlib. This information is anticipated to lay a groundwork, for enhancing healthcare and nutrition systems in the areas under examination.

1.3. Justification of The Study

In the study, researchers delved into the health and nutrition situation of women in Idlib, Syria in 2020 amidst circumstances due to conflict and widespread displacement. The importance of nutrition for the well-being of women and its long-term impact on their unborn children's health and development was highlighted. Pregnant women in conflict-affected regions like Idlib encounter heightened challenges that can lead to health outcomes, underscoring the necessity for exploration in this area.

This research seeks to address this gap by offering insights, into the health and dietary wellbeing of women, in Idlib highlighting the ways that conflict and displacement impact maternal health. The study also aims to compare the health outcomes of women who have been displaced with those who're residents with a focus, on understanding how displacement impacts health differently.

Displacement often leads to worsening health conditions due to living conditions limited access to water and sanitation and heightened exposure to violence and stress. By exploring the differences between these two groups the study will provide insights, into the needs of displaced communities. Evaluate the effectiveness of support systems. The study's goal is to promote collaboration and the exchange of information to improve health outcomes in settings by sharing these findings with the healthcare community.

1.4. Objectives

1.4.1. General Objective

My study aimed to investigate the health and nutritional well-being of women in Idlib, focusing on comparing living conditions inside and outside camps. It also explored the impact of access to healthcare services on child health outcomes in 2020.

1.4.2. Specific Objectives

- Determine the occurrence of health risks and nutritional deficiencies among women in Idlib, comparing those living in camps with those outside.
- Investigate how the accessibility of health services like check-ups relates to the prevalence of deficiencies and health risks among pregnant women.
- Study how nutritional supplements can help reduce health risks for pregnant women, especially those displaced or in unstable conditions.
- Explore how displacement impacts pregnant women's access to healthcare services and nutrition resources.
- My research sought to evaluate and contrast health outcomes, such as care utilization, pregnancy complications and birth results between younger and older pregnant women in Idlib, Syria.

1.5. Hypothesis

- H1: Pregnant women who have access to supplements are less likely to experience moderate acute malnutrition (MAM) compared to those without such access.

- H1: The prevalence of medical risk indicators is higher among displaced women than among resident pregnant women due to limited access to healthcare facilities.
- H1: Pregnant women who participate in regular prenatal check-ups have better nutritional statuses than those who do not participate in such check-ups.
- H1: Pregnant women who participate in regular prenatal check-ups have lower rates of health complications than those who do not participate in such check-ups.
- H1: Younger pregnant women (aged 18–25) have better health outcomes compared to older pregnant women (aged 26–35) in Idlib.
- H1: Women in camp are less likely to experience medical health signs compared to ones off camp.

2. GENERAL INFORMATION

2.1. Northwest Syria Context

2.1.1. Population

According to assessments conducted by various organizations, the population of northwest Syria reached around 4.4 million individuals as of September 2022. This region is not under the Syrian government's control and, therefore, lacks official data and central coordination, which makes it challenging to address the humanitarian crisis[12].

Despite enduring ten years of conflict, facing challenges, and witnessing forced relocations, the humanitarian needs in this area remain significant. As of September 2022, the humanitarian crisis has persisted, with over 2.8 million people displaced, many of whom lack access to services. These displaced communities are spread across 1,420 camps and informal settlements. The struggles in creating living conditions are compounded by difficulties in site development, camp management and service provision[13].

It is crucial to note that 80% of those displaced are women and children, rendering them vulnerable. Moreover, 74,000 individuals have been. Require assistance and interventions tailored to meet their needs. The demographic breakdown underscores the necessity for targeted support and effective management strategies aimed at enhancing living conditions and ensuring services reach all affected individuals[14].

A significant crisis is unfolding in Syria's landscape in 2023 as the number of people requiring aid rises to 15.3 million. The region houses 4.1 million inhabitants, with a considerable portion being women and children facing risks amid this prolonged conflict[15].

By the time February 18 rolled around, the earthquake in Syria had caused more than 4,500 deaths. Left 8,300 people injured. The impact extended to buildings, homes and crucial facilities, exacerbating existing difficulties and impeding the distribution of aid. The extensive destruction has led to shortages in services such as healthcare, shelter and access to water, highlighting the urgent need for international support and coordinated relief operations[16].

The long-term Syrian conflict and the low level of health services were not the only reasons for the exacerbation of the situation of Syrians. The earthquake that occurred in 2023 was a major factor in increasing the suffering of the population with the deterioration of support resources in the areas where we applied our study[17].



Figure 1: Syria map, including Idlib province, highlighted in yellow[18]

2.1.2. Economic Crisis

Since the conflict started in 2011, Syria has faced a series of challenges leading to a crisis. The prolonged war along, with instability in neighboring countries like Turkey and Lebanon the effects of COVID-19, international sanctions, a severe drought and the economic fallout from the war in Ukraine have all contributed to this situation. This has resulted in a crisis impacting the lives and basic living conditions of Syrians[19].

As estimated by the World Food Program (WFP), in 2022, Syria's population was around 16 million people, with 12 million individuals experiencing food insecurity. Shockingly, over 600,000 children were reported to be suffering from malnutrition, highlighting the worsening conditions in the country. This crisis has severely limited access to services and resources, including housing, healthcare facilities, electricity supply, schools, public transportation options, clean water sources and sanitation systems. Moreover, there have

been challenges due to skyrocketing prices of food and fuel as well as shortages affecting all aspects of life[20].

In February this year unrest ensued following an announcement by the government that stated 6000 households would no longer receive state assistance for food supplies or housing needs. This decision led to protests in Suwayda province. There was a lot of criticism on social media platforms. Moreover, health problems worsened with the cholera outbreak in Syria in September, raising worries about the spread to regions and neighbouring areas. This health emergency underscores the need for actions to address the challenges faced by the population[21].

2.1.3. Education

In Syria, education is available to students aged 6 to 17 through both informal and formal systems to meet their needs. The formal education system consists of elementary (grades 1 to 9) and high school (grades 10 to 12) stages within grades 1 to 12. While early childhood education is included in the system, it requires expansion to serve the population[22].

Due to the ongoing political instability in Syria, various educational curricula are now available. The "formal education" system mainly refers to the curriculum implemented by the Government of Syria (GoS) and its modified versions, used in areas outside the GoS's control, such as northwest Syria. "Nonformal education" describes alternative educational programs offering technical and essential skills relevant to local labor markets. These programs are essential for individuals who may not have access to traditional schooling environments[23].

To address educational disruptions, non-formal education in Syria includes initiatives like the Self-Learning Program, which supports students who have fallen behind. Curriculum B offers an accelerated GoS curriculum in informal and formal school environments. In the northeast of Syria, Kurdish and Syriac curricula are implemented in schools managed by local education officials, where Kurdish authorities exert de facto control. However, these curricula are not typically utilized in schools operated by humanitarian actors. Non-governmental organizations (NGOs) significantly administer various remedial learning programs to assist out-of-school children and those currently enrolled but needing additional support. There is a pressing need to harmonise and standardise educational resources nationwide to address the

complexities of Syria's current education system [24].

Established in 1923, the University of Damascus stands as the university in Syria, which was formed through the merger of two institutions—a significant milestone in advancing higher education within the country. Throughout its history, the university has played a role, in educating numerous generations of students and enhancing the academic and cultural environment of the region. Presently the University of Damascus is experiencing a period of expansion guided by a plan aimed at rejuvenating its programs, infrastructure and research capabilities. The plan outlines objectives to boost the university's reputation [25].

Key focus areas include elevating standards, promoting a culture of research excellence establishing partnerships and enhancing student involvement. These initiatives are part of an effort to modernize the university to meet standards and cater to the evolving needs of students and faculty members. This initiative is particularly significant given the circumstances in Syria. Through this revitalization process, the University of Damascus strives to maintain its status as a centre for education and research in the Middle East[25].

2.2. Healthcare System in Syria

2.2.1. Before The Crisis

Over the thirty years, Syria has made progress in enhancing its healthcare outcomes. According to reports from the Ministry of Health, these advancements are demonstrated through indicators showcasing improvements in healthcare within the country. The average life expectancy at birth, which serves as a measure of health standards, has increased from 56 years in 1970 to 73.1 years by 2009. This rise reflects advancements in healthcare services and improved management of health issues across the population. Furthermore, Syria has seen progress, in reducing infant and child mortality rates. Infant mortality decreased from 132 per 1000 births in 1970 to 17.9 per 1000 in 2009, while under-five mortality rates dropped from 164 per 1000 births in 1970 to 21.4 per 1000 in 2009. These positive changes can be attributed to access to child healthcare services, extensive immunization campaigns and increased awareness of health practices[26].

Health improvements were also evident, with maternal mortality rates declining from 482 per every 100,000 births in 1970 to fifty- two by the year of 2009. This reduction indicates enhancements in care and the increased availability of health facilities for mothers—a key focus of public health initiatives. During this period, Syria transitioned epidemiologically from diseases to communicable diseases (NCDs). By the 2000s NCDs accounted for a portion (77%) of all global deaths, reflecting changing global trends influenced by lifestyle changes, dietary habits and aging populations. This shift underscores the importance of bolstering healthcare systems to tackle conditions like heart disease, diabetes and cancer[27].

In terms of healthcare financing, the government's total health expenditure as a percentage of the product (GDP) was at about 2.9% in the year 2009. The financial support has played a role, in improving healthcare. It also highlights the need for investments to address the growing challenges of non-communicable diseases and maintain strong health systems and services. These statistics demonstrate progress in public health initiatives while highlighting obstacles that demand targeted attention and resources to safeguard Syria's health and well-being amid emerging health threats[28].

2.2.2. During The Crisis

The continuous political and economic turmoil in Syria has resulted in a decline in living standards for millions of individuals, severely affecting the healthcare system. Numerous important structures, like healthcare facilities, have been compromised, leading to a lack of shelter, stable energy sources, and essential services in many areas. Providing healthcare in displacement camps and areas affected by war has become incredibly difficult[29].

The worsening conditions related to water and sanitation services, food insecurity and overcrowding have increased the risk of diseases and negative public health outcomes. This poses a threat to groups like children, pregnant women and the elderly, who are more susceptible to illness[30].

Accessing healthcare has become extremely limited due to security concerns that hinder the delivery and availability of services. Maternal and child health services at the healthcare level have been significantly disrupted. The exact impact on child morbidity, well as mortality resulting from deliveries during the conflict, is hard to measure but undoubtedly severe[31].

Additionally, managing chronic illnesses is an issue within this environment. More than half of individuals with illnesses have had to stop their treatment because of the crisis. This issue is worsened by the referrals of patients from conflict areas as medical centres prioritize treating life-threatening injuries over managing conditions. Consequently, elective surgeries and routine non-urgent medical procedures are often. Called off, leaving patients in a state of uncertainty, especially those with long-term health issues requiring immediate care[32].

The healthcare system has primarily focused on emergency services, neglecting health services and leaving individuals with life-threatening ailments without essential medical attention. The prolonged conflict has strained not only the provision of healthcare but also the future health prospects of the Syrian population[33].

The standard of healthcare in Syria has notably decreased due to challenges affecting equipment functionality and the availability of crucial medications and medical supplies. A significant factor contributing to this situation is the shortage of parts and maintenance services for medical equipment, resulting in frequent breakdowns or suboptimal performance of critical diagnostic and treatment machines, thereby impacting patient care quality[34].

Furthermore, the implementation of sanctions has worsened the situation, causing a shortage of drugs and medical supplies. These sanctions, aimed at groups, have indirectly impacted the healthcare sector by limiting the country's availability of crucial medical resources. The lack of supplies has compelled healthcare facilities to prioritize emergency care and life-saving treatments over urgent procedures. Consequently, many non-urgent surgeries and routine medical procedures have been put on hold. Delayed indefinitely disrupting the healthcare system and leaving patients with non-life-threatening conditions without proper medical attention[35].

This shift in focus does not affect individuals' immediate health. It also has wider implications for public health. Untreated chronic illnesses may. Escalate into emergencies if not addressed promptly. Therefore, healthcare providers in Syria urgently require assistance and innovative strategies to overcome disruptions in the supply chain. This involves establishing methods for acquiring and distributing supplies and considering options for local production or repair of medical equipment. Without measures, the quality of healthcare will

continue to decline, posing risks to public health and worsening the ongoing humanitarian crisis[36].

2.2.3. After The Crisis: Post-Conflict Needs Assessment

The assessments conducted after conflicts, known as Post Conflict Needs Assessments (PCNA), aim to evaluate the requirements of regions affected by war. Specifically, these assessments focus on rebuilding and restoring services and infrastructure. In Syria, the PCNA is geared towards evaluating the effectiveness and operational status of the healthcare system while also tackling health issues worsened by the conflict[37].

Key areas covered in these assessments include:

- Long-Term Impacts on Individuals: Looking into the lasting effects on individuals with injuries and hearing impairments resulting from explosions exacerbated by follow-up care.
- Risks to Maternal and Infant Health: Examining risks faced by women in labour and infants born during times of conflict, particularly complications arising from insufficient care during labour, delivery and postpartum periods.
- Management of Chronic Diseases: Studying the challenges faced by patients with chronic illnesses due to treatment interruptions and delayed access to medical services.
- Epidemic Threats: Identifying risks associated with water and food borne diseases due to limited access to clean water, poor sanitation conditions and weakened public health surveillance systems.
- Disrupted Vaccination Programs: Addressing outbreaks of vaccine preventable diseases caused by disruptions, in vaccination schedules. Considering the impact of conflict, ongoing insecurity and lack of factors, on mental health and psychological well-being especially in children there is a pressing need to address these issues.
- A decline in healthcare quality, as well as worsening security conditions exacerbate the decline in health and nutritional status that causes rates of illness and death.
- It is crucial to assess the vulnerability of groups such as pregnant women and children who are greatly affected by emergencies. These individuals often face challenges in coping with the situation due to access to services and support networks.

- Understanding the limitations in accessing tertiary healthcare services is essential for evaluating the healthcare system.

In response to these challenges, the Syrian International Coalition for Health is committed to leveraging its resources and capabilities to prevent the collapse of health infrastructure and systems. The coalition aims to prioritize and cost these needs in a transitional results matrix, ensuring that each identified need is addressed strategically to rebuild a resilient healthcare system in post-conflict Syria[37].

2.2.4. The Syrian Board of Medical Specialties -SBOMS in NWS

SBOMS is an institution in the field of medicine that awards a unified credential known as the Specialization Certificate of the Syrian Board of Medical Specialties to aspiring doctors across various specialities upon completion of their training program approval from SBOMS-sanctioned medical facilities and successful completion of mandated exams. Working closely with organizations and government bodies, SBOMS aims to elevate entry requirements, educational standards and examination processes. [38].

The certificate conferred by the Syrian Board of Medical Specializations signifies proficiency after resident doctors excel in clinical and oral assessments, enabling them to practice as specialized physicians, in the northern areas of Syria governed by opposition forces. SBOMS was established around mid-2015 with the aim to:

- Numerous doctors in Syria faced challenges completing their specialization due to the crisis.
- The scarcity of professionals, including specialists, is a pressing issue.
- Medical staff across fields have been consistently targeted in a deliberate manner.
- Many resident doctors opt to relocate outside Syria to further their specialization.

It is necessary to recruit doctors for the healthcare sector, oversee their training, and assess their performance. The "Medical Education Platform", by SBOMS aims to enhance the knowledge of Arabic-speaking practitioners on medical topics[38].

2.3. Literature Review

2.3.1. Introduction

Many research studies that support the subject of pregnancy complications focus on the mother's daily intake. This is because excess weight raises the dangers for severe complications and consequences, such as impaired glucose tolerance, big for maternal-age infants, or premature delivery. Considering this, women who are overweight, obese, and insulin-dependent dent should be encouraged to consume more food rich in vegetables, necessary and unsaturated fats, and carbs e rich in fibre[39].

Retrospective research was published worldwide to uncover alarmingly high levels of vitamin D inadequacy in various age groups, particularly prenatal women. Vitamin D has a wide variety of impacts on female organisms and plays a more prominent role as a controller of metabolic processes involving phosphorus and calcium. The available research demonstrates that vitamin D plays an essential function in the reproductive process of mammals[40].

It is crucial to provide pregnant women with healthy lifestyles to enhance the condition of both the mother and her child. However, any strategy should be tailored to the unique setting and population[41].

Building a sustainable competitive advantage of strategies is crucial for positive results in maternity care. Equally, officials must engage in ongoing efforts to bolster the healthcare program's surveillance and regulating method and the localization approach, increase data access, and set up appropriate social objections and evaluation frameworks[42].

COVID-19-related reproductive health and sexuality care cuts of 10 percent of the total may result in 15.4 million accidental pregnancies, exceeding 3.3 million induced abortions and 28,000 maternal mortality rates. Several academic researchers and drug manufacturers are presently producing vaccinations. Vaccine rejection may impair men's and women's sexual functioning. Unfortunately, immunization doesn't affect ovulation; thus, this misconception must be corrected. Gestation and breastfeeding vaccinations are usually secure and efficient[43].

2.3.2. Global Maternal Malnutrition

About fifty percent of the world's people suffer from nutrient deficiencies or undernourishment, especially in mothers and young children. Premature birth, protein-energy insufficiency, chronic energy imbalance in women, and poor nutrition are all disorders that can result from inadequate dietary intake during pregnancy. Even though there is an increase in the percentage of African children who are stunted due to chronic protein deficiency, the number of undersized kids is significantly more significant in Asia. Insufficient levels of iron, iodine, vitamin A, and zinc are the most prevalent deficits among micronutrients. Combined, these causes contribute to more than half of all fatalities among children below the age of five in the world. Recent findings indicate that 1/3 of all deaths in children under the age of five can be attributed to stunting and extreme wasting. The lack of these four essential nutrients accounts for about 12 per cent of mortality in children under five[44].

2.3.3. The Risk of Micronutrient Deficiency During Pregnancy

Nutritional supplement deficiencies throughout pregnancy are one of the most dangerous signals. These shortages are caused by a combination of reduced food consumption and higher demands for the growth of the fetus. Inadequate prenatal nutritional status has been linked to various pregnancy diseases that include malfunction of the uterus, such as low birth weight, small-for-gestational-age, preeclampsia, and premature births. It is fascinating to observe growing evidence that shortages in all the elements that were investigated cause a pro-inflammatory condition in the placenta. This finding connects with the inflammatory response observed in preeclampsia, stillbirth, and premature birth[45].

2.3.4. How Pregnant Women Are Affected by Anaemia Risk

Anaemia is a disorder that affects people of all ages worldwide. The World Health Organization estimates that roughly forty per cent of pregnant women suffer anaemia. The most prevalent cause is anaemia caused by a lack of iron in the diet, often known as iron-deficiency anaemia. Even in industrialized countries, iron deficiency anaemia remains the most common cause. The prevalence of iron shortage anaemia varies globally based on the population's

economic status. There is also a common condition known as physiological anaemia of pregnancy, characterized by a considerably larger increase in fluid volume in contrast with an increasing red blood cell count. A screening for anaemia that includes an entire blood count during the first pregnancy is suggested for all pregnant women[46].

Mostly in complete lack of anaemia, it remains controversial whether or not pregnant women should be screened for iron deficiencies. Because of the high need for haemoglobin during pregnancy, it is suggested that all pregnant women take vitamin and mineral supplements[46].

2.3.5. The Pregnant Women Affecting Factors in The NWS After 12 Years of Conflict

According to recent statistics from North-western Syria, lung diseases accounted for 27 per cent of the overall disorders seen throughout all age categories. However, among late-adolescent females, gynaecological/obstetric issues were the most frequent. Infections of lower infections, bacterial diarrhoea, and otitis media accounted for over half (47%) of all cases within all age categories. Only 8 per cent of the total patients were determined to have necessary nutrients, with the vast majority (92%) being newborns and adolescents. After upper respiratory tract infections, acute diarrhoea affected 17% of people across all age groups. There was a severe impact on women's reproductive health throughout the war. Persistent problems include sexual and female violence, fewer births prevented by family planning, irregular periods, unexpected pregnancy, preterm delivery, and infant illness. Active and passive involvement in civil conflict incidents were associated with increased post-traumatic stress and mental distress rates in mothers[47].

While post-traumatic stress disorder can raise the risk of lousy parenting behaviour, researchers found no direct correlation between mothers' general emotional problems and bad parenthood or children's unhealthy behaviours. Because of the rise in teenage pregnancies and the limited availability of maternity services and maternity care, 24 per cent of pregnant women in Syria are under the age of 18. Data shows that 85, 82, and 44% of pregnant women were not given any ANC care during the first, middle, and trimesters. The present state is characterized by a more significant than recommended proportion of caesarean sections to natural births, a large teen fertility rate, and a considerable decrease in antenatal appointments[47].

2.3.6. Maternal Mortality

Pregnancy-related deaths are a major problem in many regions of the globe. The world mortality rate among mothers in 2015 was 216 fatalities for every 100,000 births, or 303,000 fatalities in total. The mortality rate among mothers in the US fell steadily from 1960 to 1987, gradually levelled off from 1995 to 1999, and afterwards started rising again after 1999. A significant percentage of black women than white women experience maternal deaths caused by the racial disparity in pregnancy-related mortality rates across the nation[48].

The healthcare system is the dominant field in antenatal care, but its assessment and response skills are inadequate to execute targeted interventions. Fundamental factors, frequently overlooked, must also be considered. Effectiveness requires a broad, equitable, multi-disciplinary alliance involving social, economic, medical ethics, politics, and government and community engagement professionals[49].

2.3.7. Vitamin D

Numerous physical consequences for the foetus and the mother have been connected to the female vitamin D intake during maternity. Previous studies have extensively covered pre-eclampsia, gestational diabetes, method of birth, and other maternal results and consequences. Along with later childhood consequences, particularly asthma, vitamin D level is often associated with various foetal and childhood results, like fetal growth measurements, muscle mass, and bone development[50].

2.3.8. Vitamin A

Worldwide, lack of vitamin A (VAD) is responsible for more cases of sight loss than any other single factor. In most third-world nations, VAD among pregnant women is a significant public health concern. Central vitamin A impacts include modifications of various functions of the fetus and the bones. Pregnant women have an increased need for vitamin A. However, in certain wealthy nations, there is considerable concern that high levels of vitamin A during pregnancy could cause birth defects if consumed for more than Sixty days after birth.

But, among areas in which VAD is a health concern, antenatal vitamin A intake is advised to avoid night blindness. This is contrary to opposition to the recommendation that regular antenatal vitamin A administration is utilized to reduce the mother and total fertility rate[51].

2.3.9. Folic Acid During Pregnancy

Pregnant women who consume folic acid pills during the beginning quarter include more information regarding their consumption, digestion, diffusion, cell quantities, and pregnancy complications. Several variables must be considered when trying to maximize the effectiveness of folic acid supplements in pregnant women, including the dosage, pill quality, sources of food, and onset time for supplementing. Beginning three months before trying to get pregnant and continuing through the end of nursing, low-risk women are recommended to consume a multivitamin containing 0.4 milligrams of folate every day[52].

2.3.10. Maternal Mortality and COVID-19

The risk of severe illness from COVID-19 is higher for pregnant women and women who have just given birth than for persons who are not pregnant. Sickness severe enough to necessitate hospitalization in a hospital's intensive care unit, mechanical breathing, extracorporeal membrane oxygenation, or indeed mortality is considered to be of this category. Co-infection with human immunodeficiency virus type COVID-19 during gestation dramatically increases a woman's risk of issues that could damage her unborn child. For instance, in the case of COVID-19, pregnant women are more likely to give birth to a dead child. When the Delta-modified version first appeared in June of 2021, everything was linked to a significantly higher probability of severe consequences for expectant mothers. This included more women being admitted to the intensive care unit and needing more advanced medical procedures like invasive ventilation and extracorporeal membrane oxygenation[53].

2.3.11. Women's Health Status in The Rural Part of Northwest Syria

Recent statistics reveal that one-fifth of women, in this region have access to reproductive health services such as prenatal and postnatal care, family planning and obstetric assistance. Unfortunately, the limited availability of delivery services often forces women to give birth at home without support increasing the risks of complications and maternal mortality. The ongoing conflict has further exacerbated the situation in healthcare facilities. Causing healthcare workers to flee the area. This leaves women and girls to gender based violence, early marriage and exploitation. It is imperative to address these challenges and ensure that women in Northwest Syria can access high quality healthcare services[54].

2.3.12. Women's Nutrition Status in The Rural Part of Northwest Syria

The nutritional status of women in Northwest Syria has also becomes a growing concern. Recent data indicates that a significant percentage of women in the region are experiencing malnutrition, with anaemia affecting two-fifths of them among pregnant and lactating women. Displaced women and families in Northwest Syria encounter hurdles, such as access to nutritious food, clean water and proper sanitation. Many females, both young and adult find themselves relying on diets that may have lasting health effects. The ongoing conflict in the area has worsened these challenges leaving households struggling to secure supplies. It is crucial to address the requirements of women in this region those living in rural areas and displaced communities to safeguard their healthy being. However, ensuring access to food options clean water sources and vital healthcare services remains an obstacle that needs urgent attention for the betterment of women's lives[55].

2.3.13. The Different Health and Nutrition Services Between Urban and Rural Areas

Disparities exist between the health and nutrition services to women residing in versus rural settings due to variations in healthcare accessibility, resource availability and cultural norms. Generally speaking, urban areas offer healthcare provisions for women encompassing care, family planning assistance, reproductive health services, as well as a wider array of nutritional support, including dietary guidance and diverse food options. In contrast

rural regions often grapple with healthcare infrastructure and resources concentrated within urban centers. In areas women may encounter difficulties, in accessing healthcare services due to distance lack of transportation and a shortage of healthcare providers. This situation can lead to access to nutrition resulting in malnutrition issues for both women and children affecting their overall health. It is crucial to address these disparities by improving healthcare infrastructure in regions and raising awareness about nutrition and health for the well-being of women and girls[55].

2.3.14. What's The Difference Between Moderate Acute Malnutrition (Maternal Malnutrition) For PLW and Acute Malnutrition?

Maternal malnutrition during pregnancy is a public health issue that affects both the mother and the developing fetus. Moderate acute malnutrition during pregnancy or lactation signifies a deficiency in nutrients like proteins, vitamins and minerals. This condition poses risks to health and fetal development potentially leading to birth outcomes with long term effects, on the child. On the hand acute malnutrition is a form of nutrient deficiency characterized by rapid depletion of essential nutrients that can manifest as visible signs of wasting and stunting. Although moderate acute malnutrition and acute malnutrition have similarities, in their root causes and possible health effects the difference lies in the degree of deficiency. Recognizing the variances between these two conditions is essential, for creating interventions and plans to meet the nutritional requirements of pregnant and nursing women ultimately enhancing maternal and child well-being[56].

3. MATERIAL AND METHODOLOGY

3.1. Study Design

A detailed study was carried out in 2020 to investigate the factors affecting the health and nutritional well-being of women in Idlib, northwest Syria. Both local communities and displaced individuals were included in the study. The research methodology was carefully developed by a team of experts from organizations such as the Nutrition cluster, UNICEF, the Reproductive Health Technical Working group and the Syrian Expatriate Medical Association (SEMA). This collaborative effort aimed to ensure a well-organized data collection process that addresses the health issues faced by pregnant women in this conflict-affected area.

3.2. Study Population

According to data from the nutrition cluster and UNICEF for 2020, there is a population of 680,000 in the targeted locations in Idlib governorate, Syria[57]. The study focused on 15,998 women, including those who're malnourished or not those with medical risk factors and those who are healthy.

3.3. Sample Size

The study utilized sampling methods by analyzing all data sets. This approach allowed for a representation of the target population offering a foundation, for comparison and analysis.

3.4. Sample Selection

This study used a universal sampling method to ensure a representative and comprehensive sample. The researcher used all 15,998 pregnant women samples.

3.5. Study Location

This study was carried out in İdlib. The Idlib province includes three districts, and seven sub-districts under opposition control. Data collected from locations indicates:

Table 1: Source of data locations

Governorate	Three District	Seven Sub-district	Teams number
Idlib	Harim	Harim	2 RRTs
Idlib	Harim	Salqin	4 RRTs
Idlib	Jisr-Al-Shugur	Jisr-Al-Shugur	1 RRT
Idlib	Jisr-Al-Shugur	Badama	1 RRT
Idlib	Jisr-Al-Shugur	Darkosh	1 RRT
Idlib	Jisr-Al-Shugur	Janudiyeh	1 RRT
Idlib	Maaret Temsrin	Maaret Elekhwan	2 RRTs

The map illustrates the region to the borders, encompassing Harim, Jisr Al Shugur, M. Temsrin, and the surrounding sub-districts enclosed within yellow regions.

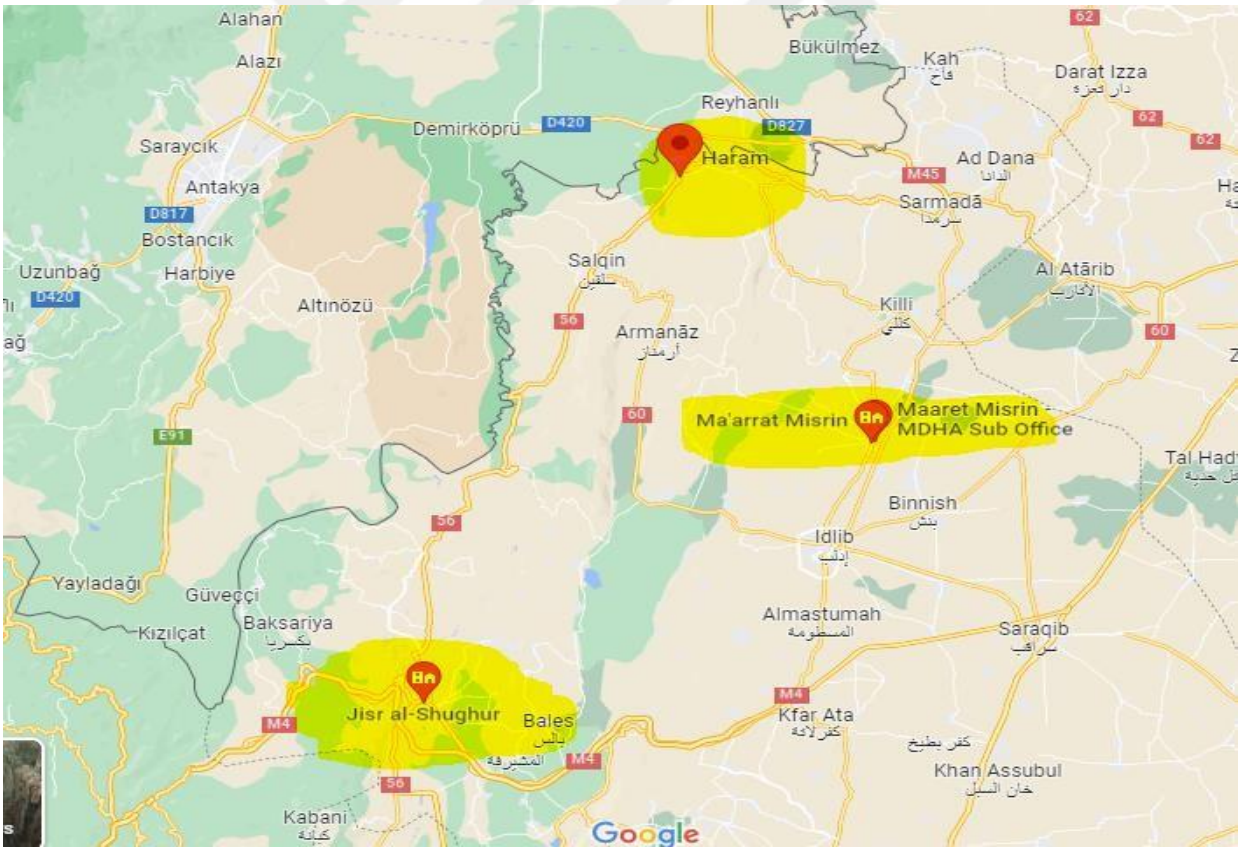


Figure 2: Map of study location

3.6. Data Collection Tool

The Kobo data collection toolbox was developed by the Syrian Expatriate Medical Association (SEMA) to facilitate data gathering. To ensure accessibility for communities in Syria, SEMA designed the questionnaire in both English and Arabic. The questionnaire covered a range of topics, including the status of mothers and children's maternal health and any pregnancy-related medical risk factors observed. This comprehensive approach encompassed all aspects of child health.

3.7. Data Collection Process

The data collection process was carried out retrospectively to ensure an accurate compilation of information. Field surveys and various data collection tools were. All data was uploaded onto the KOBO platform. This centralized system facilitated aggregation of data highlighting our approach to data collection.

After uploading the data onto KOBO, it was exported to SEMA's office in Gaziantep as an Excel sheet. The Information Management Unit (IMU) played a role in organizing, cleaning and verifying the accuracy of the data. Subsequently the dataset was imported into IBM SPSS Statistics 26.0 for analysis, by researchers.

3.8. Data Collection Period

The entire data collection process spanned from January to December 2020. During the span of a year, we gathered a range of data, taking into account changes and other time-related elements that might impact the health and nutrition of pregnant women in rural Idlib. By January 2021, we had carefully compiled all the data from the year for in-depth analysis. This prolonged period of data collection aimed to provide an inclusive dataset for statistical evaluation.

3.9. Included And Excluded Criteria

3.9.1. Included Criteria:

• Nutritional Status: Expectant mothers identified with Moderate Acute Malnutrition (MAM); This category comprises women who have been assessed by professionals and determined to have MAM highlighting the requirement, for nutritional support.

• Medical Risk Factors: women displaying signs of risks; This pertains to women with known risk factors or complications related to pregnancy such as severe anemia, high blood pressure or gestational diabetes.

• Displacement Status; women who're Internally Displaced Persons (IDPs) and those residing in the area: This condition ensures that the research includes both displaced individuals and permanent residents in the region offering insights into how displacement impacts maternal health.

• Living Conditions: women living either in camps or outside camps: The study seeks to compare health outcomes between individuals residing in environments (camps) and those outside these settings by enrolling participants from diverse living conditions.

3.9.2. Excluded Criteria:

During data extraction, the following groups were not included in the analysis:

- Breastfeeding women
- Women under 15 years old
- Non-pregnant women.

3.10. Study Variables

3.10.1. Dependent Variables

- Accessibility of Nutritional Supplements: This section explores the availability and affordability of supplements, for pregnant women dietary requirements and wellbeing. It also assesses how supplementary nutrients are integrated into routines to improve health. Insufficient Iron rich Foods: This study delves into the availability and intake

of iron foods, for preventing anemia in expectant mothers. It also delves into habits to grasp their effects on well-being in vulnerable groups.

- Absence of Spouse: Examines the impact of a spouses absence on the nutritional well being of women. Explores its implications on accessing healthcare maintaining a diet and managing stress during pregnancy.
- Experience of Displacement: Discusses the hurdles faced by women who have been displaced such as access to healthcare and heightened exposure to environmental and psychosocial stressors. Addresses the emotional and healthcare challenges associated with displacement.

3.10.2. Independent Variables

- Displacement status distinguishes between women who are internally displaced persons (IDPs) or residents. Access to health and nutrition services can vary based on this distinction.
- Living conditions can also influence access to these services. Pregnant women residing in camps may have access compared to those living in camps.
- Demographic factors, like the age group of a woman and whether she is the decision maker in her household can influence her ability to access healthcare services and make choices about health and nutrition.
- Furthermore, having knowledge about healthcare options plays a role in how pregnant women utilize nutritional care services. Being well-informed about healthcare services can significantly impact their ability to receive care.

3.11. Data Analysis Plan

The process of collecting and analyzing data involved utilizing Microsoft Excel 365 for managing, cleaning and analyzing the data effectively.

The user interface of Excel and its robust data management capabilities played a role in organizing the dataset formatting, generating statistics, and creating representations to identify anomalies and understand data patterns. Following this IBM SPSS Statistics 26.0 was utilized for analysis on a sample size of 15,996 women. This involved tasks like data importation calculating averages, standard deviations and frequency distributions as

conducting bivariate analyses such as Chi-Square tests to investigate relationships between categorical variables like dietary supplements and health metrics with a significance level set at $p < 0.05$. This comprehensive approach ensured that data processing and rigorous statistical examination were in line with the objectives of the study.

3.12. Strength And Limitations

3.12.1. Strength

In terms of understanding the level of accessibility to nutrition and health services, my study will serve as a cornerstone for NWS. It represents an endeavour that uncovers the obstacles confronting this marginalized community. The insights gained from this study are unprecedented. Lay a groundwork for future investigations. Stakeholders such as policymakers, healthcare professionals and non-governmental organizations can leverage these findings to devise targeted interventions that address the needs of women in Idlib.

The research process involved engaging with women to ensure the accuracy of the data and empower the community. The methodology and findings of the study set an example for research in other conflict-affected areas. Furthermore, this research contributes to the understanding of health access in conflict zones and adds depth to discussions on global health inequalities.

3.12.2. Limitations

- Limited Generalizability: The study's focus on a rural sample limits its broader applicability to pregnant women in different regional or international contexts.
- Sampling Bias: The study's overrepresentation of rural women may skew results, affecting relevance to urban or less isolated rural populations.
- Geographical Specificity: The exclusive focus on rural Idlib restricts its relevance to pregnant women in other regions or countries with different backgrounds.
- Limited Data Comparability: Lack of comparative data from other years or urban areas hinders assessing temporal changes or disparities between rural and urban populations.

- Potential Confounders: Variances in healthcare access, socio-economic statuses, and cultural practices between rural and urban areas may confound results.

3.13. Ethical Approval Considerations

The Syrian Expatriate Medical Association (SEMA) officially granted the researcher the right to analyze the data. SEMA has given written and email consent to use and analyze the data for scientific purposes. The ethical committee at Ankara Yildirim Beyazit University has also approved the study.

4. RESULTS

4.1. Descriptive statistics

The quantitative analysis of the dataset related to women's health and nutrition status in Idlib for 2020 offers insights into their demographic profile nutritional wellbeing and health challenges faced by this vulnerable group. The dataset comprises responses, from 15,998 women with a portion residing in camps (42.2%) while others are living outside camps (57.8%).

4.1.1. Demographic And Living Conditions

The research data encompassed input from 15,998 mothers, detailed in Table 2 below, offering a snapshot of their living conditions. A majority of these women resided outside designated camps, making up 57.8% of the population (9,249 individuals), while the remaining 42.2% (6,749 individuals) lived within camp boundaries. This breakdown sheds light on the portion of the populace dwelling off camp compared to those situated in structured or makeshift camp environments. It underscores the living conditions that could impact the health and dietary well-being of women in rural Idlib.

Table 2: Residence of the pregnant women (N=15998)

Living Condition	Frequency	Percent (%)
Camp	6749	42.2
Off Camp	9249	57.8
Total	**15998**	**100.0**

4.1.2. IDP Or Resident Status:

In Table 3, the dataset reveals that a substantial majority of surveyed women, amounting to 86.1% (13,782 individuals), were internally displaced persons (IDPs), showcasing the profound effects of displacement on this demographic group. In contrast, 13.8% (2,212 individuals) were residents who had not experienced displacement. This sizable proportion of IDPs underscores the displacement crisis in Idlib and its potential implications for accessing healthcare and nutritional provisions. The high prevalence of displaced persons

emphasizes the pressing need for tailored interventions and support mechanisms addressing the challenges faced by this segment.

Table 3: IDP or resident status for pregnant women (N=15998)

IDP or Resident Status	Frequency	Percent (%)
Resident	2212	13.8
Displaced	13786	86.1
Total	**15998**	**100.0**

4.1.3. Age Distribution of The Pregnant Women in The Study

The survey included pregnant women aged 16 to 45. The largest age group was 18 to 25, making up 49.2% of the sample (7,870 women). Nearly half of the pregnant women were in this age range. The age distribution, as presented in Table 4 below, is as follows: Under 18 years: 5.3% (851 women), 18-25 years: 49.2% (7,870 women), 26-35 years: 37.6% (6,011 women), 36-45 years: 7.9% (1,266 women).

The high number of younger pregnant women, especially those aged 18-25, emphasizes the urgent need to address their specific health and nutritional needs. Adapting healthcare strategies for this age group is crucial for improving maternal and child health outcomes in rural Idlib.

Table 4: Age distribution of the pregnant women in the study (N=15998)

Age Category	Frequency	Percent (%)
<18	851	5.3
18-25	7870	49.2
26-35	6011	37.6
36-45	1266	7.9
Total	**15998**	**100.0**

4.1.4. Nutritional Status

The assessment, as shown in Table 5, revealed that 10.2% of the pregnant women (1,629 individuals) were experiencing moderate acute malnutrition (MAM), while the vast

majority, 89.8% (14,369 individuals), had a normal nutritional status. This data highlights the urgent need for nutritional support and interventions to tackle the problem of malnutrition among pregnant women in rural Idlib.

Table 5: Malnutrition among pregnant women (N=1629)

Nutrition Status (Women)	Frequency	Percent (%)
Normal	14369	89.8
MAM	1629	10.2
Total	**15998**	**100.0**

4.1.5. Health Risk Signs and Disease

Approximately 3.6% of pregnant women reported experiencing significant health risk signs, including extreme tiredness or dizziness, urinary issues, heartburn, and severe pain in the lower abdomen. The findings in Table 6 below highlight the urgent need for improved prenatal care and closer monitoring to effectively manage and mitigate these health risks, ensuring better maternal and fetal health outcomes.

Table 6: Health Risk Signs and Disease (N=581)

Risk Signs (Pregnant Women)	Frequency	Percent (%)
Yes	581	3.6
No	15417	96.4
Total	**15998**	**100.0**

4.1.6. Supplement Intake

A significant number of participants mentioned that they use multivitamins and iron/folic acid supplements. However, the availability of these nutritional supplements varied significantly based on living conditions. The finding in Table 7 showed that women living in camps had notably less access to these supplements than those living outside camps. Specifically, 77.4% of women (12,385 individuals) had access to nutritional supplements, while 22.6% (3,613 individuals) did not have access. This difference highlights the necessity for targeted efforts to distribute these essential supplements equitably to all pregnant women, especially those living in camps.

Table 7: Pregnant women's supplement intake (N=12385)

Access to Nutritional Supplements	Frequency	Percent (%)
Yes	12385	77.4
No	3613	22.6
Total	**15998**	**100.0**

4.1.7. Health services accessibility (Medical Check Ups)

30.7% of women underwent pre pregnancy check-ups, at medical facilities. Access to healthcare services was notably impacted by displacement status with displaced persons (IDPs) encountering obstacles in accessing essential medical treatment. The study's results, as displayed in Table 8, underscore the pressing need for tailored health and nutrition interventions for women in Idlib. They specifically address the challenges faced by displaced communities. Implementing these suggestions is crucial for enhancing maternal health outcomes in this conflict affected area.

Table 8: Access to Healthcare (Medical Check-ups) (N=4909)

Pre-Pregnancy Check-Ups	Frequency	Percent (%)
Yes	4909	30.7
No	11089	69.3
Total	**15998**	**100.0**

4.2. Bivariate Analysis

The examination of the dataset concerning women in Idlib during 2020 unveiled correlations between various factors. For instance, it indicated that age group and living conditions (camp or off-camp) are closely linked to status, with younger age groups and camp residents exhibiting a prevalence of inadequate nutritional outcomes. A notable Chi-square outcome indicated that access to supplements significantly safeguards against acute malnutrition (MAM). However, pregnancy check-ups and IDP status did not exhibit a substantial direct association with nutritional status, suggesting that they do not determine nutritional outcomes solely.

The analysis revealed that displaced pregnant women are more prone to reporting signs of health risks compared to residents, underscoring the impact of displacement on health.

A significant number of mothers, especially those, between 18 and 25 facing nutritional challenges highlights the pressing requirement for nutrition programs tailored to different age groups. These results offer guidance for developing health initiatives to cater to the unique requirements of at-risk subsets among pregnant women, in Idlib.

4.2.1. Hypothesis 1 (H1)

H1: Pregnant women with access to nutritional supplements are less likely to experience moderate acute malnutrition (MAM) compared to those without such access. This hypothesis examines the protective effects of nutritional supplements on maternal nutrition, a crucial factor in improving pregnancy outcomes.

To address Hypothesis 1, a correlation was made between the independent variable, "access to nutritional supplements", and the dependent variable ", experience moderate acute malnutrition (MAM)". As these variables are categorical, nominal, and binary, the best analysis to find the correlation between them is crosstabulation, mainly used for examining two binary categorical variables. The results are:

Table 9: Access to the nutritional supplements (N=12385)

nutrition status * Access to nutritional supplements Crosstabulation				
Count				
		Access to nutritional supplements		**Total**
		yes	**no**	
nutrition status (women)	**Normal**	**10948**	**3421**	**14369**
	MAM	**1437**	**192**	**1629**
Total		**12385**	**3613**	**15998**

Table 10: Chi-square tests for the first hypothesis

Chi-Square Tests

	Value	Df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	**120.946**	**1**	**<0.001**		
Continuity Correction	**120.259**	**1**	**<0.001**		
Likelihood Ratio	**137.702**	**1**	**<0.001**		
Fisher's Exact Test				**<0.001**	**<0.001**
Linear-by-Linear Association	**120.938**	**1**	**<0.001**		
N of Valid Cases	**15998**				

The high Pearson Chi-Square value indicates a highly significant association between the two binary variables with p-values less than 0.001. This means that the relationship observed in the data is unlikely due to chance, and there is a strong association significance between the variables under study. As the p-value is less than 0.05, we can reject the null hypothesis and accept Ha, which states that pregnant women with access to nutritional supplements are less likely to experience moderate acute malnutrition (MAM) compared to those without such access.

Table 11: Pearson and Phi coefficients

Symmetric Measures					
		Value	**Asymptotic Standard Error**	**Approximate T**	**Approximate Significance**
Nominal by Nominal	**Phi**	**-0.087**			**<0.001**
	Cramer's V	**0.087**			**<0.001**
Interval by Interval	**Pearson's R**	**-0.087**	**0.006**	**-11.039**	**<0.001**
Ordinal by Ordinal	**Spearman Correlation**	**-0.087**	**0.006**	**-11.039**	**<0.001**
N of Valid Cases		**15998**			

However, while the relationship proved significant, Pearson and Phi coefficients show a value of -0.087, indicating a weak relationship between the variables. The minus sign shows that the relationship is negative, which means that the more access to nutritional supplements,

the less likely to suffer from MAM. The value of Pearson/Phi close to 0 means the relationship is considered weak as the association between the variables is close to 0, while the closer to 1/-1 means a stronger relationship. However, even a modest association can have important implications for public health interventions and policy decisions aimed at reducing the prevalence of MAM among pregnant women.

4.2.2. Hypothesis 2 (H1)

H1: The incidence of medical risk signs is higher among internally displaced pregnant women than among resident pregnant women due to reduced access to healthcare facilities. This hypothesis tests the impact of displacement on healthcare access and the consequent health risks, addressing a critical aspect of public health in crises.

The second hypothesis examines the relationship between the independent variable of being a resident or displaced and the dependent variable of medical risk signs. A correlation was established between the two variables using crosstabulation analysis on SPSS to address this hypothesis because the two variables are binary. The results are:

Table 12: Medical risk signs among pregnant women (N=581)

Does the Benef (pregnant) have any risk signs? * IDP or resident? Crosstabulation				
Count				
		IDP or resident?		**Total**
		resident	**displaced**	
Does the Benef have any risk signs?	**Yes**	**27**	**554**	**581**
	No	**2185**	**13228**	**15413**
Total		**2212**	**13782**	**15994**

Table 13: Chi-square tests for the second hypothesis

Chi-Square Tests					
	Value	**df**	**Asymptotic Significance (2-sided)**	**Exact Sig. (2-sided)**	**Exact Sig. (1-sided)**

Pearson Chi-Square	**42.661**	**1**	**<0.001**		
Continuity Correction	**41.865**	**1**	**<0.001**		
Likelihood Ratio	**54.847**	**1**	**<0.001**		
Fisher's Exact Test				**<0.001**	**<0.001**
Linear-by-Linear Association	**42.659**	**1**	**<0.001**		
N of Valid Cases	**15994**				

Table 14: The Phi value to detect the association between the variables

Symmetric Measures					
		Value	**Asymptotic Standard Error**	**Approximate T**	**Approximate Significance**
Nominal by Nominal	**Phi**	**-0.052**			**<0.001**
	Cramer's V	**0.052**			**<0.001**
Interval by Interval	**Pearson's R**	**-0.052**	**0.005**	**-6.540**	**<0.001**
Ordinal by Ordinal	**Spearman Correlation**	**-0.052**	**0.005**	**-6.540**	**<0.001**
N of Valid Cases		**15994**			

As we can see from the tables above, the Chi-Square value is high, and the p-value is less than 0.001, which is less than 0.05, which means there is a significant correlation between the two variables. Therefore, we can reject the null hypothesis and accept the alternative one, which suggests that the incidence of medical risk signs is higher among internally displaced pregnant women than among resident pregnant women.

The Phi value of -0.052 suggests a weak association between the variables. However, this association is significant and considered to be important in efforts to reduce the medical risk for pregnant women. The minus sign indicates displaced women, coded 2 on SPSS, and having medical risk signs compared to residents, coded 1, which are negatively correlated. In other words, displaced women are more likely to get medical risk signs than resident ones.

4.2.3. Hypothesis 3 (H1)

H1: Pregnant women who participate in regular prenatal check-ups have better nutritional statuses than those who do not participate in such check-ups. This hypothesis focuses on the correlation between prenatal care and improved maternal nutritional outcomes, underlining the importance of healthcare engagement during pregnancy.

To address Hypothesis 3, a correlation was analyzed between the independent variable "participation in regular prenatal check-ups" and the dependent variables "having risk signs" and “nutritional statuses” among pregnant women. Since these variables are categorical, nominal, and binary, cross-tabulation analysis examined the relationship between two binary categorical variables. The results are:

Table 15: The periodic pre-pregnancy check-ups at the medical centre (N=4909)

Does the Beneficiary have any risk signs? * Does the pregnant woman undergo periodic pre-pregnancy check-ups at the medical centre? Crosstabulation				
Count				
		Does the pregnant woman undergo periodic pre-pregnancy check-ups at the medical centre?		**Total**
		yes	**no**	
Does the Benef have any risk signs?	**yes**	**118**	**463**	**581**
	no	**4791**	**10626**	**15417**
Total		**4909**	**11089**	**15998**

Table 16: Chi-square tests for the third hypothesis

Chi-Square Tests					
	Value	**df**	**Asymptotic Significance (2-sided)**	**Exact Sig. (2-sided)**	**Exact Sig. (1-sided)**
Pearson Chi-Square	**30.513**	**1**	**<0.001**		
Continuity Correction	**30.009**	**1**	**<0.001**		
Likelihood Ratio	**32.879**	**1**	**<0.001**		
Fisher's Exact Test				**<0.001**	**<0.001**

Linear-by-Linear Association	**30.511**	**1**	**<0.001**		
N of Valid Cases	**15998**				

The high chi-square value, combined with a very low p-value (<.001), strongly suggests that the observed association is not due to random chance but likely reflects a real relationship between the two variables.

As the p-value is less than 0.05, we can reject the null hypothesis and accept Ha, which states that pregnant women who undergo regular checkups are less likely to experience any risk signs compared to those who do not.

Table 17: Pearson and Phi coefficients for the third theory

Symmetric Measures					
		Value	**Asymptotic Standard Error**	**Approximate T**	**Approximate Significance**
Nominal by Nominal	**Phi**	**-0.044**			**<0.001**
	Cramer's V	**0.044**			**<0.001**
Interval by Interval	**Pearson's R**	**-0.044**	**0.007**	**-5.529**	**<0.001**
Ordinal by Ordinal	**Spearman Correlation**	**-0.044**	**0.007**	**-5.529**	**<0.001**
N of Valid Cases		**15998**			

However, while the relationship proved significant, Pearson and Phi coefficients show a value of -0.044, indicating a weak relationship between the variables. The minus sign shows that the relationship is negative, which means that women who underwent regular checkups suffered from fewer risk signs. The value of Pearson/Phi close to 0 means the relationship is considered weak as the association between the variables is close to 0, while the closer to 1/-1 means a stronger relationship. However, even a weak association can have important implications for public health interventions and policy decisions intended to reduce medical risks among pregnant women.

4.2.4. Hypothesis 4 (H1)

H1: Pregnant women who participate in regular prenatal check-ups have lower rates of health complications than those who do not participate in such check-ups. This hypothesis focuses on the correlation between prenatal care and improved maternal health outcomes.

The same theory addresses another variable, pregnant women's nutritional status. We must follow the same approach to address the hypotheses by cross-tabulating regular checkups and women's nutritional status.

Table 18: Regular prenatal check-ups (N=4909)

Nutrition status (women) * Does the pregnant woman undergo periodic pre-pregnancy check-ups at the medical center? Crosstabulation				
Count				
		Does the pregnant woman undergo periodic pre-pregnancy check-ups at the medical center?		**Total**
		yes	**no**	
nutrition status (women)	**Normal**	**4418**	**9951**	**14369**
	MAM	**491**	**1138**	**1629**
Total		**4909**	**11089**	**15998**

Table 19: Chi-square tests for the fourth hypothesis

Chi-Square Tests					
	Value	**df**	**Asymptotic Significance (2-sided)**	**Exact Sig. (2-sided)**	**Exact Sig. (1-sided)**
Pearson Chi-Square	**0.252**	**1**	**0.615**		
Continuity Correction	**0.225**	**1**	**0.636**		
Likelihood Ratio	**0.253**	**1**	**0.615**		
Fisher's Exact Test				**0.629**	**0.318**
Linear-by-Linear Association	**0.252**	**1**	**0.616**		
N of Valid Cases	**15998**				

Table 20: Pearson and Phi coefficients for the fourth theory

Symmetric Measures					
		Value	**Asymptotic Standard Error**	**Approximate T**	**Approximate Significance**
Nominal by Nominal	**Phi**	**0.004**			**0.615**
	Cramer's V	**0.004**			**0.615**
Interval by Interval	**Pearson's R**	**0.004**	**0.008**	**0.502**	**0.616**
Ordinal by Ordinal	**Spearman Correlation**	**0.004**	**0.008**	**0.502**	**0.616**
N of Valid Cases		**15998**			

As we can see from the two tables above, the p-value is much bigger than 0.05, meaning there is no significant relationship between the variables. This means that we accept the null hypothesis and reject the alternative one. In other words, this analysis found no relationship between women who undergo regular checkups and their nutritional statuses.

4.2.5. Hypothesis 5 (H1)

H1: Younger pregnant women (aged 18–25) have better health outcomes compared to older pregnant women (aged 26–35) in Idlib. The age distribution data and health risk signs suggest that younger women may have fewer complications, potentially due to better overall health or fewer pregnancies.

To address this hypothesis, a correlation was established between age categories ranging from under 18 to over 35. Again, cross-tabulation analysis was used on SPSS to find the relationship between the independent variable (age) and the dependent one (medical risk signs). The results are:

Table 21: The age distribution data and health risk signs (N=581)

Age category * Does the Benef (pregnant) have any risk signs? Crosstabulation				
Count				
		Does the Benef (pregnant) have any risk signs?		Total
		yes	no	
Age category	Under 18	26	825	851
	18-25Y	280	7590	7870
	26-35Y	213	5798	6011
	36-45	62	1204	1266
Total		581	15417	15998

Table 22: Chi-square tests for the fifth hypothesis

Chi-Square Tests			
	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	6.859	3	0.077
Likelihood Ratio	6.351	3	0.096
Linear-by-Linear Association	3.478	1	0.062
N of Valid Cases	15998		

Unexpectedly, the p-value is 0.077, which is more than 0.05, so the null hypothesis is accepted, and the alternative one is rejected. This means no significant relationship exists between women's age and medical sign risks.

4.2.6. Hypothesis 6 (H1)

H1: Women in camp are less likely to experience medical health signs compared to ones off camp. Rationale: The hypothesis suggests that camps managed by humanitarian organizations may offer better access to healthcare services and support for pregnant women than those living off-camp. The study aims to determine if the concentrated efforts within

camps effectively reduce medical risk signs among pregnant women compared to their off-camp counterparts.

A correlation was made between the independent variable, women in camp or off camp, and the dependent variable, experiencing medical risk signs. In order to find the relationship between the two variables, a crosstabulation analysis was used, as both variables are binary. The results are:

Table 23: Women risk signs in and off camps (N=581)

Camp / off camp * Does the Benef (pregnant) have any risk signs? Crosstabulation				
Count				
		Does the Benef (pregnant) have any risk signs?		Total
		yes	no	
camp / off camp	Camp	394	6355	6749
	Off Camp	187	9062	9249
Total		581	15417	15998

Table 24: Chi-square tests for the sixth hypothesis

Chi-Square Tests					
	Value	**df**	**Asymptotic Significance (2-sided)**	**Exact Sig. (2-sided)**	**Exact Sig. (1-sided)**
Pearson Chi-Square	**162.351**	**1**	**<0.001**		
Continuity Correction	**161.262**	**1**	**<0.001**		
Likelihood Ratio	**160.899**	**1**	**<0.001**		
Fisher's Exact Test				**<0.001**	**<0.001**
Linear-by-Linear Association	**162.341**	**1**	**<0.001**		
N of Valid Cases	**15998**				

Table 25: Pearson and Phi coefficients for the sixth theory

Symmetric Measures					
		Value	**Asymptotic Standard Error**	**Approximate T**	**Approximate Significance**
Nominal by Nominal	**Phi**	**0.101**			**<0.001**
	Cramer's V	**0.101**			**<0.001**
Interval by Interval	**Pearson's R**	**0.101**	**0.008**	**12.806**	**<0.001**
Ordinal by Ordinal	**Spearman Correlation**	**0.101**	**0.008**	**12.806**	**<0.001**
N of Valid Cases		**15998**			

The tables above show that the p-value is less than 0.001, which is less than 0.05. This means the null hypothesis is rejected, and the alternative one is accepted. This means that there is a significant relationship between women being in camp or off camp and experiencing medical risk signs. Phi/Spearman values are 0.101, suggesting that the relation between the variables is weak. However, it remains a discovery that can offer insight into the warning signs for women. Women who are living outside the camps are suffering from health risks more than those based in camps, according to the positive indication of 0.101.

5. DISCUSSION

Examining the health and nutritional status of women living in Idlib during 2020, highlighting differences influenced by factors like access to supplements, prenatal care and displacement status. These findings underscore the need for targeted interventions to address these vulnerabilities and improve outcomes for child health. Interpretation of Results:

• Demographic Trends and Health Implications

The demographic analysis reveals that a majority of women are young, with half (49.2%) between 18 and 25 years old. This trend reflects patterns seen in conflict-affected regions where higher birth rates among women (UNICEF, 2019)[58]. Instances of pregnancies accounting for 5.3% of the sample group emphasize the importance of reproductive health education and specialized services tailored to populations. Young mothers face increased risks, such as rates of childbirth complications and adverse outcomes for infants.

These results align with research indicating that young mothers in conflict zones often encounter health challenges due to access to healthcare and educational resources (UNICEF, 2019)[58]. The study's literature review section delves into the health issues experienced by mothers in Northwest Syria, including complications and restricted access to maternal healthcare services.

- Health Risks and Nutritional Deficiencies

The research results show a number of women experiencing moderate acute malnutrition (MAM), affecting 10.2% of the participants. This finding is, in line with the patterns of malnutrition, where deficiencies in nutrients are common among both mothers and young children, according to Bhutta et al. (2013)[60]. An examination implies a link between the availability of supplements and MAM underscoring the need for holistic approaches that go beyond just supplements to improve overall diet quality and healthcare accessibility. This conclusion supports studies suggesting that relying on nutritional supplements is insufficient, and there should be strategies in place to ensure access to nutritious foods as well[60]. The prevalence of iron deficiency anaemia underscores the importance of having iron foods and nutritional supplements, as highlighted by Black et al. (2013)[61].

When we look at these results in comparison to what's been written, it's clear that maternal malnutrition is an issue that is impacted by various factors such as socioeconomic status, environment and healthcare systems[61]. For example, Black and colleagues (2013) highlight how issues like food insecurity, limited dietary options and lack of access to healthcare services contribute significantly to the rates of malnutrition among women in certain countries. In places like Idlib, these challenges are exacerbated by conflicts that disrupt food supply chains and medical facilities. The research also indicates that maternal malnutrition in conflict-affected areas is influenced by factors on a scale. This emphasizes the importance of strategies that combine support with healthcare interventions.

- Impact of Prenatal Care

Regular visits, for checkups have been recognized as important in improving health outcomes. Women who attend these appointments consistently often report signs of health issues showing a negative correlation (Phi = 0.044, $p < 0.001$). This underscores the importance of staying engaged with healthcare services during pregnancy to monitor and address any health concerns. However, the analysis did not find a link between checkups and nutritional status, indicating that while these visits are vital for identifying health risks, they may not directly impact results. This emphasizes the need for care models that blend support services with attention.

Research on a scale reinforces the nature of receiving care. For example, a study by Villar et al. (2001)[62]. supports this notion. Nonetheless, the examination did not uncover an association between checkups and nutritional status, suggesting that while these appointments are crucial for identifying health risks, they might not have a direct influence on nutritional outcomes. This highlights the importance of care models that combine assistance with consistent medical care.

These findings are supported by global studies emphasizing the importance of comprehensive prenatal care. For example, a study by Villar et al. (2001)[62] revealed that regular prenatal checkups can lower the chances of preterm births and low birth weight. However, like our findings, they highlighted that prenatal care, by itself, may not be enough to tackle nutritional deficiencies. This emphasizes the importance of integrated healthcare models incorporating support. The review of existing literature also stresses the role played by care in

reducing health risks during pregnancy, emphasizing the necessity for consistent and integrated healthcare services for pregnant women in conflict areas.

- Displacement and Access to Health Services

The status of displacement significantly impacts access to healthcare and health outcomes. Pregnant women who are internally displaced tend to show health risk indicators compared to those who are not displaced (Phi = 0.052, $p < 0.001$). This aligns with the understanding that displaced populations encounter obstacles in accessing healthcare leading to increased vulnerability, according to WHO (2018)[63]. Women residing in camps are at risk of showing warning signs compared to those living outside the camps, indicating that despite efforts from humanitarian organizations, the healthcare services within camps may still not be sufficient to meet the needs of pregnant women adequately. This could be attributed to factors like overcrowding, limited resources and logistical constraints. This observation aligns with research on displaced populations as highlighted by the World Health Organizations report in 2018.

Displaced persons often encounter health challenges due to living conditions, lack of sanitation and restricted access to healthcare services. Studies have also shown that overcrowded camp conditions contribute to the spread of diseases and increase maternal and child morbidity rates among IDPs. Additionally, research on effects in Northwest Syria reveals that displaced women face obstetric complications and struggle with accessing essential healthcare services.

- Contextualization within Existing Theory and Research

The study's results shed light on the difficulties women in rural Idlib face, contributing valuable insights to our understanding of maternal health issues in conflict zones. The widespread presence of malnutrition and anaemia, in mothers corresponds with the recognized maternal health issues in areas with incomes and affected by conflict (Bhutta et al., 2013)[60]. These results emphasize the importance of combining healthcare interventions to meet the health needs of pregnant women in such environments (Black et al., 2013)[61].

The strong connection between care and decreased indications of health risks underscores the crucial role of ongoing healthcare involvement during pregnancy. This discovery aligns with studies that stress the significance of prenatal care in enhancing outcomes for both mothers and newborns (Villar et al., 2001)[62]. Nevertheless, the absence of a link between care and nutritional status implies that additional approaches are required to tackle nutritional deficiencies in pregnant women, highlighting the intricate nature of maternal health difficulties in conflict regions.

The higher incidence of signs indicating health risks among displaced women emphasizes the compounded vulnerabilities experienced by displaced communities. This finding corresponds with research indicating that displaced individuals encounter obstacles to healthcare access and face increased risks of negative health consequences (WHO, 2018; Spiegel et al., 2010)[63] [64]. The review of existing literature highlights the impact of displacement on the health of women in Northwest Syria. It points out that displaced women often face challenges with pregnancy-related issues and accessing healthcare services.

- Implications of Unexpected Results

In terms of the findings, the study shows that women living in camps have risk factors compared to those outside camps, prompting a need for further investigation. While it is commonly believed that camps provide access to healthcare, this research suggests that the quality and range of services in camps may not fully address the healthcare needs of pregnant women. This emphasizes the importance of improving healthcare provisions in camps, including better resource allocation and addressing issues like overcrowding and logistical barriers (Spiegel et al., 2010)[64].

Furthermore, the limited link between care and nutritional status indicates that regular medical checkups alone may not be sufficient to address deficiencies. This highlights the significance of integrating support with care to ensure health services (Villar et al., 2001)[62]. The literature review echoes this perspective by highlighting the crucial role of integrated healthcare approaches in addressing the health requirements of women in conflict zones.

- Other reasons

Other reasons for the increased occurrence of health warning signs in women in camps could stem from issues like overcrowding, lack of privacy and insufficient sanitation facilities, all of which can worsen health risks. Moreover, depending on self-reported information may introduce biases since participants might downplay or exaggerate behaviors and situations. Moving forward, it would be beneficial for research to incorporate health assessments and adopt longitudinal approaches to gain a deeper insight into the factors that contribute to health risks among pregnant women in camps.

6. CONCLUSION AND RECOMMENDATIONS

6.1. Conclusion

In 2020, a comprehensive study based on valid data was conducted on the health and nutrition status of women in Idlib, Syria. The study focused on the well-being care of women in this conflict-affected area during their childbearing years. According to the findings, factors such as income, food scarcity, and inadequate healthcare contribute to malnutrition among women. They also highlight the conditions in camps that perpetuate cycles of poverty and malnutrition.

The study highlighted several participants, particularly those aged 18 to 25, who emphasized the importance of targeted healthcare interventions for this demographic group. These young women accounted for most of the 5.3% of participants identified as pregnant. The findings underscored the necessity for tailored reproductive health education for this age bracket. The prevalence of acute malnutrition (MAM) among participants was concerning at 10.2% higher than the reported rate from the data, at 8.2%. With MAM and anaemia posing risks to achieving full-term pregnancies and increasing health complications, urgent action is needed to address pathways leading to malnutrition based on these compelling findings. An examination of the makeup of women revealed that the majority, 57.8%, resided outside of camps while half, 42.2%, lived within them. This distribution carries implications for health and nutrition.

In comparison to women living in camps, pregnant women in camps face risks due to challenging living conditions such as overcrowding, lack of privacy and inadequate sanitation facilities, which can lead to more severe health issues. This underscores the importance of implementing targeted interventions for women in both camp and non-camp settings. One noteworthy discovery from the surveys was that a considerable portion of the interviewed women were displaced individuals.

A striking 86.1% of the surveyed women were displaced persons IDPs, with 13.8% being local residents. The high prevalence of IDPs among those surveyed highlights the impact of forced displacement on women's access to essential healthcare and nutrition resources. Urgent attention is needed for this group, who face challenges as IDPs. A study on the status of women in Idlib governorate revealed that 10.2% of those surveyed were experiencing acute

malnutrition (MAM). The majority, totalling 89.8%, had a status. Although the number of women may be small, its impact on the issues we are addressing here is significant. The fact that 10% of women are affected by acute malnutrition (MAM) underscores the importance of addressing malnutrition in women.

Likewise, with 4% of women facing similar challenges, it is crucial to take action to improve their nutritional status. Around 3.6% of women reported experiencing health issues during pregnancy, such as fatigue, difficulty urinating, severe heartburn and intense abdominal pain. The report emphasizes the need for attention to these health concerns as they pose risks to both mothers and their babies. Providing care and closely monitoring pregnant women at risk can have a positive impact on their wellbeing.

An in-depth analysis of supplement intake revealed that a large majority - four-fifths -of women had access to health supplements. However, it was concerning to find that one out of every five women in the study group had no access to any supplements. If people residing in camps, a situation not, to this region alone, had equal access to essential vitamins and basic health supplements like the rest of us, the problem wouldn't appear as significant. However, the lack of access to these supplements by women in the evaluation presents a notable public health concern. The impact of displacement on healthcare was evident, with 30.7% of women in this study group receiving the recommended pre-pregnancy examination.

Displaced persons (IDPs) face challenges in accessing medical services and gathering resources for much-needed stays in obstetric wards. Disparities in healthcare accessibility and quality pose a risk to the communities disrupted by circumstances. The research revealed associations between age, living conditions and nutritional status. Younger individuals and those residing in camps were more likely to experience impacts. The availability of supplements appeared beneficial in reducing acute malnutrition (MAM) rates. However, pre-pregnancy checkups and being classified as an IDP did not independently lead to outcomes. This indicates the importance of implementing healthcare and nutrition interventions to reduce the occurrence of nutritional status.

Research indicates that pregnant migrants who are forced to move face health risks compared to others in terms of their wellbeing. A study by Turay et al. (2018) carried out among Sierra Leonean migrants is one instance. It exposed those problems directly related to their displacement are impacted the health of forced refugee women and their children. Among

these difficulties were the declining nutritional quality of the food that was accessible, which resulted from their displacement and past trauma aggravating mental health issues.

6.2. Recommendations

Based on the findings of our research, we can summarize the recommendations in a few points:

- Enhance Healthcare Facilities: Improve access to healthcare by establishing more health facilities, both permanent and mobile to cover a wider geographic area. Mobile clinics play a role in providing vaccinations, prenatal care and treatment for malnutrition in areas.
- Establish Centers for Nutrition Services: Create centres to address malnutrition issues that arise from conflicts and food shortages. Focus on targeted interventions that increase access to iron foods and essential nutrients.
- Funding: Seek additional financial support from international organizations, governments and NGOs. Establish funds to ensure operations and adaptability to evolving healthcare needs.
- Strengthen Long-term Health Systems: Allocate resources towards developing healthcare infrastructure for improvements beyond immediate relief efforts.
- Empower Local Communities: Engage community members, particularly women in designing and implementing health programs for cultural sensitivity and effectiveness. Train residents as community health workers to enhance service delivery.
- Foster Community Ownership: Encourage community involvement in health initiatives tailored to their needs, for long-term sustainability and relevance.
- Run awareness campaigns to inform people about the health and nutrition services available and to overcome barriers and misinformation. Implement educational programs that focus on nutrition, maternal health and disease prevention to empower individuals, and women to make decisions, about their health. It is essential to provide tailored reproductive health education for women to address the rates of teenage pregnancies and associated risks.
- Strengthen partnerships among local health authorities, international organizations, NGOs and community groups to combine resources knowledge sharing and efforts for

more effective health interventions. Monitor the effectiveness of interventions through ongoing research to evaluate their impact and identify any gaps or emerging needs.

- Conduct targeted research to better understand the specific health challenges faced by different demographic groups within the community in order to guide more customized health interventions. Continuous data collection is crucial for monitoring health outcomes and adjusting interventions as needed.
- Advocate, for policy changes based on research findings and field experiences that target the causes of healthcare services. This involves promoting conflict resolution, infrastructure development, gender equality and social justice.
- Provide a range of health services that address both social needs recognizing the impact of community and environmental factors, on health. This inclusive approach ensures that healthcare interventions are not medically effective but socially and culturally relevant.
- Improve prenatal care services by offering checkups and thorough monitoring to reduce health risks during pregnancy. This necessitates strengthening healthcare facilities and ensuring the availability of staff and resources.
- Foster cooperation, among local communities, healthcare providers and international organizations to create healthcare solutions that are culturally sensitive and accessible overcoming logistical and socio-economic challenges.

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8. APPENDIX

8.1. Appendix 1: Organization Approval – SEMA

SEMA's management

CEO of SEMA

Dr. MHD Hassan Mughrabieh

Dear colleagues in Ankara Yildirim Beyazit University,

On behalf of SEMA senior management, it is our pleasure to inform you that **Basem Shaher with student number (215403119)** has got permission to use the required data to analyze it and use it for educational and scientific purposes.

Currently, Basem is planning to apply an analysis of nutrition project data including the nutrition and health situation of pregnant women in rural Idleb, Norwest of Syria. The project has been achieved in 2020 and the data will be used for his thesis in health policy and global health master's degree.

The title of his thesis proposal is (**The health and nutritional status of pregnant women based in rural Idleb in 2020**).

Yours sincerely,

Dr. **MHD Hassan Mughrabieh**

Date: 24-06-2022

Signature and stamp:

8.2. Appendix 2: Ethical Approval

ANKARA YILDIRIM BEYAZIT ÜNİVERSİTESİ (AYBÜ)
SAĞLIK BİLİMLERİ ETİK KURULU
PROJE ONAY BELGESİ

Ankara Yıldırım Beyazıt Üniversitesi, public health institue, health policy and global health bölümü akademisyenlerinden / öğrencilerinden Basem Shaher'in, The health and nutritional status of pregnant women based in rural Idleb during 2020 adlı araştırması değerlendirilmiştir. (*Bu kısım başvuru sahibi tarafından doldurulmalıdır)*

Proje etik açısından uygun bulunmuştur. [X]
Proje etik açısından geliştirilmesi gerekmektedir. [ ]
Proje etik açısından uygun bulunmamıştır. [ ]

AYBÜ SAĞLIK BİLİMLERİ ETİK KURULU KARARI (Etik Kurul tarafından doldurulacaktır)	
Araştırma kodu (Yıl – Araştırma sıra no)	2022-994
Başvuru formunun Etik Kurula ulaştığı tarih	30.06.2022
Etik Kurul Karar toplantı tarihi ve karar no	07-07-2022-12
Yer	Ankara Yıldırım Beyazıt Üniversitesi, Esenboğa Külliyesi
Katılımcılar	Formda imzası bulunan üyelerimiz toplantıya katılmıştır.

KURUL BAŞKANI VE ÜYELER:

		İMZA
Prof. Dr. Özden YALÇINKAYA ALKAR	Başkan	
Prof. Dr. Tahir Kurtuluş YOLDAŞ	Üye	
Doç. Dr. Oktay GÜRCAN	Üye	
Doç. Dr. Sevil ŞAHİN	Üye	
Doç. Dr. Bahar KÜLÜNKOĞLU	Üye	
Doç. Dr. Metin DİNÇER	Üye	
Doç. Dr. Gözde ALGÜN DOĞU	Üye	
Dr. Öğr. Üyesi Günsel BİNGÖL	Üye	
Dr. Öğr. Üyesi Şule ÇEKİÇ	Üye	
Dr. Öğr. Üyesi Nural ERZURUM ALİM	Üye	
Dr. Öğr. Üyesi Bünyamin ÇILDIR	Üye	
Dr. Öğr. Üyesi Nimetcan Mehmet YAĞMA	Üye	
Dr. Öğr. Üyesi Esra Ceren TATLI	Üye	

8.3. Appendix 3: Questionnaire

UNICEF_SEMA_RRT_template

THIS QUESTIONNAIRE AIMS TO SCREEN PEOPLE IN CONFLICT-AFFECTED AREAS IN NORTHERN SYRIA (IDLIB COUNTRYSIDE), THROUGH SESSIONS IN CAMPS AND COMMUNITIES THAT AIM TO PROVIDE MALNUTRITION SCREENING SERVICES COMBINED WITH INTEGRATED HEALTH, PROTECTION AND HYGIENE SERVICES, AS WELL AS COUNSELING. FOOD SUPPLEMENTS, HYGIENE RATIONS AS WELL AS REFERRAL SERVICES.

O. Passport Information

THE QUESTIONS ASKED TO THE KEY COMMUNITY (CAMP MANAGER, LC, ..) IN DAILY BASIS AT LEAST ONCE.

ESTIMATED NUMBER OF FAMILIES	ESTIMATED NUMBER OF TOTAL POPULATION	ESTIMATED NUMBER OF CHILDREN UNDER FIVE	ESTIMATED NUMBER OF PREGNANT AND LACTATING WOMEN

LOCATION *	COMMUNITY *	IF CAMP TYPE IT HERE OTHERWISE KEEP IT BLAMK
◯ Idlib - Harim - Harim ◯ Idlib - Harim - salqin ◯ Idlib - Jisr-Ash-Shugur - Jisr_shughur ◯ Idlib - Jisr-Ash-Shugur - Badama ◯ Idlib - Jisr-Ash-Shugur - Darkosh ◯ Idlib - Jisr-Ash-Shugur - Janudiyeh ◯ Idlib - Idlib - Maaret Tamsrin ◯ Idlib - Harim - Dana ◯ Aleppo - Al Bab - Al Bab ◯ Aleppo - Azaz - Azaz		

A. General Information

RRT CODE *	PROJECT CODE *	VISIT DATE * yyyy-mm-dd	PLACE OF SERVICE DELIVERY * ◯ Camp or Community ◯ PHC ◯ SHC
IF SERVICE PLACE IN FACILITY PLEASE SPECIFY *	WOMEN ABOVE 18	CHILDREN MALES UNDER 18	CHILDREN FEMALES UNDER 18

MUAC CATEGORY (WOMEN)	BASED ON SCREENING, IS THE BENEFICIARY CASE REFERRED? *	BENEFICIARY REFERRAL PLACE *	HAS THE BENEFICIARY (MAM CASES) BEEN ENROLLED FOR SFP? *
	◯ Yes ◯ No		◯ Yes ◯ No
SFP FOLLOW UP PROCEDURES			
SERVICES IMNCI (U5)			

WOMEN DISABILITY ABOVE 18	PLWS NUMBER	CHILDREN MALES DISABILITY UNDER 18	CHILDREN FEAMLES DISABILITY UNDER 18

B. Beneficiaries' Information

1

BENEFICIARY INFO NUMBER 1

BENEFICIARY NAME (OPTIONAL)	BENEFICIARY CATEGORY *	BENEFICIARY AGE (YEARS) *	BENEFICIARY AGE (MONTHS) *
	◯ Children under 5 ◯ PLW		
BENEFICIARY AGE (DAYS) *	BENEFICIARY GENDER *	BENEFICIARY TYPE *	HAS THE BENEFICIARY REACHED BEFORE? *
	◯ Male ◯ Female	◯ IDP ◯ Host ◯ Returnees	◯ Yes ◯ No
WHAT IS THE RESULT OF THE BENEFICIARY DISCHARGE?	IS THE BENEFICIARES PREGANANT OR LACTATING *	MUAC (CM) *	MUAC CATEGORY (CHILD)
◯ Healing ◯ Defaulter ◯ Medical referral ◯ Lack of response ◯ Death	◯ Pregnant ◯ Lactating ◯ None		

IF YES, MENTION PLEASE *	IN CASE OF IMNCI SIGNS, DID THE CHILD RECEIVED FIRST AID? *	HAS THE BENEFICIARY U5 ANY DISABILITY? *	BASED ON CHILD SITUATION, DOES HE REFERRED? *
☐ 1. Convulsion ☐ 2. Whisper or unconsciousness ☐ 3. Not being able to eat anything ☐ 4. Persistent vomiting ☐ 5. Persistent diarrhea ☐ 6. Blood in the stool ☐ 7. Cyanosis ☐ 8. Rapid breathing and difficulty ☐ 9. Chest loss ☐ 10. Dehydration	◯ Yes ◯ No	◯ Yes ◯ No	◯ Yes ◯ No

IF YES, BENEFICIARY REFERRAL PLACE *

SERVICES EMONC

ANY EDEMA IN CHILDREN *	HAS THE CHILDREN (U5 < 2M) HAS MEDICAL RISKS SIGNS ? *	IF YES, MENTION PLEASE *	HAS THE BENEFICIARY (U5, 2 M TO 59 M) HAS MEDICAL RISKS SIGNS? *
◯ Yes ◯ No	◯ Yes ◯ No	☐ 1. Refused to breastfeed ☐ 2. Convulsions ☐ 3. Hyperthermia ☐ 4. The cold ☐ 5. Persistent vomiting ☐ 6. Persistent diarrhea ☐ 7. Rapid breathing or difficulty ☐ 8. Chest loss ☐ 9. The skin changes color to blue or yellow ☐ 10. Blood or pus coming from the navel ☐ 11. Bulging fontanel ☐ 12. Urine delay 24 hours or stool 48 hours ☐ 13. Dryness of the newborn	◯ Yes ◯ No

IS THE BENEFICIARY(U5/PLW) HAS VISUAL SIGNS (CHILD ABUSE, VIOLENCE CASES..)? *	IF YES, AND BASED ON THESE VISUAL SIGNS, DOES HE/SHE REFERRED ? *	IF REFERRED, WHERE? *	ANY OBSTACLES REACHING THE FACILITY? *
◯ Yes ◯ No	◯ Yes ◯ No		◯ Yes ◯ No

IN CASE OF OBSTACLES, WHAT? *

- ☐ 1. Long Distance
- ☐ 2. Security Situation
- ☐ 3. Transportation Cost

ANY COMMENTS, FEEDBACK, OR SUGGESTION YOU WANT TO SUBMIT?

SESSION RECEIVED COUNSELLING TOPIC *

- ☐ IYCF Conuselling
- ☐ WASH Counselling

NUTRITION SUPPLEMENTATION

IS THERE ANY MATERIALS DISTRIBUTED? *

- ◯ Yes
- ◯ No

HAS THE PREGNANT HAS ANY MEDICAL SIGNS ? *	IF YES, MENTION PLEASE *	BASED ON THESE EMONC COMPLICATIONS OF PREGNANT, IS THE BENEFICIARY CASE REFERRED? *	IF YES, PREGNANT REFERRAL PLACE *
◯ Yes ◯ No	☐ 1. Severe headache or blurred vision ☐ 2. Bleeding (red or black) - bleeding ☐ 3. Severe pain in the lower abdomen ☐ 4. Feeling the movement of the fetus ☐ 5. Swelling of the hands, legs, and face ☐ 6. Persistent vomiting ☐ 7. Fever ☐ 8. Urinary heartburn ☐ 9. paleness ☐ 10. Severe fatigue or dizziness	◯ Yes ◯ No	

IF PREGANANT, DOES SHE VISIT THE FACILTITY FOR REGULAR CHECK? *

- ◯ Yes
- ◯ No

SERVICES PROTECTION

DISTRIBUTED MATERIALS TYPE *	IF OTHER MATERIALS DISTRIBUTED, PLEASE EXPLAIN *	AMOUNT OF PLUMBY NUT (WRAPPER) *
○ plumby nut (wrapper) ○ plumby sup (packet) ○ plumpy doz (wrapper) ○ Nutri Butter (wrapper) ○ plumpy mum (wrapper) ○ plumpy nutri (wrapper) ○ High-energy biscuits (tablet) ○ Vitamin_child (wrapper) ○ Vitamin_preg (wrapper) ○ minerals-folic acid (tablet) ○ Other		

AMOUNT OF PLUMBY SUP (PACKET) *	AMOUNT OF PLUMPY DOZ (WRAPPER) *	AMOUNT OF PLUMPY MUM (WRAPPER) *	AMOUNT OF PLUMPY NUTRI (WRAPPER) *

AMOUNT OF HIGH-ENERGY BISCUITS (TABLET) *	AMOUNT OF VITAMIN_CHILD (WRAPPER) *	AMOUNT OF VITAMIN_PREG (WRAPPER) *	AMOUNT OF NUTRI BUTTER (WRAPPER) *

AMOUNT OF MINERALS-FOLIC ACID (TABLET) *	ANY WATER PURIFICATION TABLET AND SOAP DISTRIBUTED(SAM CASES)? *	IF YES, AMOUNT (TABLET) *
	○ Yes ○ No	

C. Stock Checklist

HAVE YOU VISTIED THE STCK IN THE COMMUNITY? *
○ Yes ○ No

WHAT CURRENT MATERIALS AVAILABLE IN THE STOCK? *

WHEN WAS THE LAST TIME OF RECEIVING MATERIALS? *	IS THE CURRENT AMOUNT IS SUFFICIENT FOR THE NEXT TWO MONTHS? *	PLEASE TAKE A PHOTOS OF THE MATERIALS IN THE STOCK?
yyyy-mm-dd	○ Yes ○ No	

ANY OTHER COMMENTS COULD BE MENTIONED HERE:

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8.4. Appendix 4: Curriculum Vitae

Basem Shaher

Public Health master's degree Student - Bachelor's Degree In Pharmacy

Address Gaziantep, Sehinbey, 27010
Phone +905349310035
E-mail basim.shaher@gmail.com
Residency status: temporary protection kimlik with work permit at SEMA.

LinkedIn https://www.linkedin.com/in/basem-shaher-092b6aaa

Preparing the thesis for the master's degree in public health at Ankara Yildirim Beyazit University. During the last 7 years, I have gained experience in nutrition, health, and protection as an integrated approach by participating in the nutrition and health cluster, the IYCF and FMA technical working groups, and the SCHF proposal review committee for 2 years. Advanced training for IYCF-E and rapid response teams-RRT are in operation.
Grant management, project management, pharmacy management, security management, communication skills, proposal writing, and reporting training and workshops. Project manager for UNICEF, SCHF, Goal, IRC, QRC, NORWAC, MSF, and Kuwait.

Skills

Public Health	Good
Nutrition principles	Very Good
Planning and Coordination	Excellent
Drug inventory management	Very Good
Inventory and restocking	Very Good
Project Management	Excellent
Project planning and development	Excellent
Advanced problem solving	Very Good
Excellent Communication	Excellent
IT software knowledge	Very Good
Risk management skills	Very Good
Payroll and budgeting	Excellent
Policy and procedure modification	Very Good
Instruction writing	Very Good
Cultural Awareness	Excellent
Project lifecycle management	Excellent

Work History

Work History

Feb 26, 2024 - present

Health programs manager at SEMA

I oversee the coordination and administration of all aspects of ongoing Health activities, including planning, organizing, leading staff, and controlling the health portfolio.

- Plan the delivery of the overall Health and nutrition portfolio and its activities in accordance with SEMA's vision and goals, under the supervision and coordination of the CEO.
- Provide guidance and direction to the programs team on achieving agreed targets and long-term strategic objectives.
- Oversee the overall performance of the technical and projects management team.
- Contribute and lead program development efforts by identifying opportunities, working with the partnerships and grants team to draft proposals, and coordinating directly with the grants management team.
- Identify and evaluate the risks and possible threats associated with health programmatic activities and, in coordination with stakeholders inside SEMA, take appropriate action to control and mitigate risks.
- Oversee the preparation and submission of technical and program reports as per grants and donor agreements.

03-2022 – Feb 26th, 2024

Grants Coordinator

- Grants seeking – Donor requirements – Proposal and reports writing – Negotiations - Preparing projects budget – Pre-award, Award, and post-award requirements.

- Coordinating with many national and international donors, especially World Vision International, IRC, HelpAge, MSF, and GOAL.

2021-04 – 02 -2022

Nutrition Coordinator

SEMA, Gaziantep, Emek

- Performed integrated approach (Health, nutrition, and protection). Employer: SEMA organization- Gaziantep office.
- Established and Responsible for the whole nutrition program in SEMA.
- Health: surgical hospital.
- Prepared a variety of different written communications, reports, and documents to ensure smooth operations.
- Adhered to social distancing protocols and wore a mask or face shield.
- Led projects and analyzed data to identify opportunities for improvement.
- Used coordination and planning skills to achieve results according to the schedule.
- Participated in continuous improvement by generating suggestions and engaging in problem-solving activities to support teamwork.
- Improved operations through consistent hard work and dedication

2018-05 - 2021-03

Sr. Program Officer

SEMA, Gaziantep, Emek

- Integral approach (Health, nutrition, and protection) Employer: SEMA organization- Gaziantep office.
- UNICEF RRT, family MUAC technical working group, nutrition cluster member, daily data dashboard technical observer, project manager and nutrition focal point.
- An integral approach as rapid response teams RRTs include Nutrition, CP, GBV and WASH.
- IRC/ECHO project manager, SHC facilities (surgical, RH and GBV services).
- HPF project manager (PHC and nutrition).
- IRC/DAFID ER coordinator.
- MCs in Dara, southern Syria.
- QRC ER coordinator in rural Aleppo.

2017-12 - 2018-04

Program Coordinator

AY-NUR, Gaziantep, Mucehitler

- Ay-Nur organization- Gaziantep office.
- Reports to management each month.
- Coordinate daily schedules and special programs for facility residents in collaboration with another team member.
- Making sure that all the aims of the project are met.
- Making sure the quality standards are met.
- Develop comprehensive reports on ongoing programs and submit summaries.

2016-07 - 2017-05

Health Project Manager

Al Seraj, Gaziantep, Mucehitler

- Al Seraj for healthcare and development- Gaziantep office.
- Representing the organization's interests.
- Making sure that all the aims of the project are met.
- Overseeing the accounting, costing, and billing.

2014-08 - 2015-01

Medical Coordinator

Relief International, Der Ezzor, Syria

- Work as a focal point for reporting communicable diseases and investigating potential outbreaks.
- Designed and introduced leadership development, coaching and team management model, promoting employees to increased levels of responsibility.
- Developed policies and procedures for effective pharmacy management.
- Discussed new medications and technologies specific to patient's conditions

Education

2007-10 - 2012-06

Bachelor's degree: Pharmacy

Syrian Private University - Damascus, Syria

2021-09 - Current

M.D.: Public Health Student

Ankara Yildirim Beyazit University - Ankara, Turkey

Languages

Arabic - mother tongue	Excellent
English - Advanced	Very Good
Turkish - B1	Good

Training

- PMD pro1 – PgMD training on KAYA - Preparing for PMP – Management and leadership - Grants management – BBR - Proposal and report writing.
- Security management – Pharma management - Disaster management.
- Grants seeking – Sphere – IYCF – Epidemiology and others.

8.5. Appendix 5: Photos From NWS Communities



Figure 3: SEMA RRT field visit in Harim district, rural Idlib



Figure 4: SEMA RRT camp visit in M. Elekhwan, rural Idlib



Figure 6: SEMA RRT camp visit in Salqin, rural Idlib



Figure 5: SEMA RRT hand-washing awareness-raising activity, rural Idlib