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MASTERS'S THESIS

Fatma WARSAME



T.C.
ANKARA YILDIRIM BEYAZIT UNIVERSITY
PUBLIC HEALTH INSTITUTE

HEALTH PROMOTION FOR FEMALE GENITAL MUTILATION AMONG MALE AND FEMALE IN SOMALIA: A INVERVENTION STUDY

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APPROVAL OF THESIS

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Master's Thesis

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I certify that this thesis meets all the requirements for a Master's Degree

PLAGIARISM

I declare here that everything in this thesis is my unique work. I have explicitly referenced in accordance with Ankara Yildirim Beyazit University guidelines, academic rules, and ethical conduct, and I accept full legal responsibility for the academic procedure of my thesis.

Fatma WARSAME

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I hereby declare that this thesis is my own original work, and it has never been presented or submitted for the same purpose. Any idea, data or information from other resources are cited and acknowledged. Therefore, this work does not violet any academic or ethical standards related to plagiarism or intellectual property.

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Alhamdulillah, all praise is due to Allah (SWT) for granting me the opportunity, strength, and guidance to complete this work. I pray that it is accepted and made beneficial.

This work is dedicated to all the women and girls of Somalia—may it, even in a small way, contribute to their protection, dignity, and rights.

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ABSTRACT

Master's Thesis

HEALTH PROMOTION FOR FEMALE GENITAL MUTILATION AMONG MALE AND FEMALE IN SOMALIA: A INVERVENTION STUDY

Fatma Warsame

Ankara Yıldırım Beyazıt University
Public Health Institute
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Abstract

Background:
Female genital mutilation (FGM) remains a widespread and deeply rooted practice in Somalia, particularly among internally displaced persons (IDPs), where limited education, cultural beliefs, and social pressure contributed to its continuation. Despite global and national efforts to eliminate FGM, few studies have assessed the impact of health education interventions in humanitarian settings.
Objective:

This study aimed to assess the baseline knowledge, attitudes, and practices (KAP) related to FGM among residents of IDP camps in Garowe, Somalia, and to evaluate the effect of the health education session on participants perceptions and attitudes regarding FGM.
Methods:
A pre-post intervention study was conducted among 363 participants, both men and women living in internally displaced persons (IDP) camps in Garowe, Somalia. Participants were selected using snowball sampling. A structured questionnaire was administered before the intervention and after the health education session on FGM. Quantitative data were analyzed using descriptive statistics, Chi-square, Kruskal-Wallis, and McNemar's tests to assess associations and changes in knowledge and attitudes.
Results:
At baseline, 100% of participants were aware of the existence of FGM, but only 44.9% perceived it as harmful, and 70.2% supported its continuation in the form of Sunni circumcision. Education and employment status were significantly associated with attitudes toward FGM (p=0.001). following the intervention, significant improvements were observed, awareness that FGM causes infections rose from 49% to 85%, and awareness of delivery complications increased from 40% to 81% (p=0.000). willingness to circumcise

daughters dropped from 42% to 19%, Additionally, 75.6% of participants reported a change in attitude, and 70.7% expressed increased confidence in speaking publicly about FGM.

Conclusion:

The findings demonstrate that brief, targeted health education can significantly improve knowledge and shift attitudes toward FGM, even in resource limited and culturally conservative settings. Public health programs in Somalia should incorporate education interventions that engage both women and men, involving religious leaders, and address the sociocultural drivers sustaining FGM.

Key words: FGM, Somalia, IDP camps, health education, public health, behavior change, gender.

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ÖZET

Yüksek Lisans Tezi

SOMALİ'DE YAŞAYAN KADIN VE ERKEKLERDE KADIN SÜNNETİNE YÖNELİK SAĞLIĞIN GELİŞTİRİLMESİ: BİR MÜDAHALE ÇALIŞMASI

Fatma WARSAME

Ankara Yıldırım Beyazıt Üniversitesi
Halk Sağlığı Enstitüsü
Sağlık Politikaları ve Küresel Sağlık Programı

Danışman: Doç. Dr. Egemen UNAL

Arka Plan:

Kadın sünneti (FGM), özellikle eğitim olanaklarının sınırlı olduğu, kültürel inançların ve toplumsal baskıların güçlü olduğu Somali'de, yerinden edilmiş kişiler arasında yaygın ve derinlemesine kökleşmiş bir uygulama olmaya devam etmektedir. FGM'yi ortadan kaldırmaya yönelik küresel ve ulusal çabalara rağmen, insani yardım ortamlarında sağlık eğitimi müdahalelerinin etkisini değerlendiren çalışma sayısı oldukça sınırlıdır.

Amaç:
Bu çalışma, Somali'nin Garowe kentindeki yerinden edilmiş kişiler kamplarında yaşayan bireyler arasında FGM'ye ilişkin mevcut bilgi düzeyini, tutumları ve uygulamaları değerlendirmeyi ve verilen sağlık eğitimi oturumunun katılımcıların FGM ile ilgili algılarına ve tutumlarına etkisini ölçmeyi amaçlamaktadır.

Yöntem:
Garowe'deki yerinden edilmiş kişiler kamplarında yaşayan 363 kadın ve erkek katılımcıyla, müdahale öncesi ve sonrası tasarıma sahip bir çalışma yürütülmüştür. Katılımcılar, kartopu örnekleme yöntemiyle seçilmiştir. Müdahaleden önce ve FGM konulu sağlık eğitimi oturumundan sonra yapılandırılmış bir anket uygulanmıştır. Nicel veriler tanımlayıcı istatistikler, Ki-kare testi, Kruskal-Wallis ve McNemar testleri kullanılarak analiz edilmiş, bilgi ve tutum değişiklikleri değerlendirilmiştir.

Bulgular:
Başlangıçta katılımcıların %100'ü FGM'nin varlığından haberdardı, ancak yalnızca %44,9'u bunu zararlı olarak değerlendirdi ve %70,2'si Sünni tipi sünnetin devam etmesini

destekledi. Eğitim ve meslek durumu, FGM'ye yönelik tutumlarla anlamlı şekilde ilişkiliydi (p=0.001). Müdahale sonrasında önemli iyileşmeler gözlendi; FGM'nin enfeksiyonlara yol açtığını bilenlerin oranı %49'dan %85'e, doğum komplikasyonlarının farkındalığı ise %40'tan %81'e yükseldi (p=0.000). Kız çocuklarını sünnet ettirme isteği %42'den %19'a düştü. Ayrıca, katılımcıların %75,6'sı tutumlarında değişiklik olduğunu, %70,7'si ise FGM hakkında halka açık konuşma konusunda daha fazla özgüven kazandıklarını bildirdi.

Sonuç:
Bulgular, kısa ve hedefe yönelik sağlık eğitiminin, kaynakların sınırlı olduğu ve kültürel olarak muhafazakâr ortamlarda bile FGM'ye ilişkin bilgi düzeyini artırabileceğini ve tutumları olumlu yönde değiştirebileceğini göstermektedir. Somali'deki halk sağlığı programları, kadın ve erkeklerin katılımını sağlayan, dini liderleri sürece dâhil eden ve FGM'yi sürdüren sosyokültürel etkenleri ele alan eğitim müdahalelerini içermelidir.

Anahtar kelimeler: FGM, Somali, yerinden edilmiş kişiler kampları, sağlık eğitimi, halk sağlığı, davranış değişikliği, toplumsal cinsiyet.

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LIST OF ABBREVIATIONS

FGM - Female genital mutilation

FGM/C - Female genital mutilation\cutting

HCW - Healthcare Worker

HIV\AIDS - The combination of Human Immunodeficiency Virus and Acquired Immunodeficiency Syndrome is known as HIV-AIDS.

IDP - Internally displaced persons

IOM - International organization for migration

KAALO - A humanitarian organization operating in Somalia

NGOs - Non-Governmental Organizations

NRC.UNHCR - The Norwegian Refugee Council operates under

PSS - Psychosocial support

SD - Standard deviation

Type 1 - Sunni: Clitoridectomy (partial or total removal of the clitoris)

Type 3- pharaonic: Infibulation (narrowing of the vaginal opening by removing parts or all of the external genital and sewing the vulva closed)

UN - United Nations

UNHCR - United nations high commissioner for refugees

UNOCHA - United Nations Office for the Coordination of Humanitarian Affairs

UNPA -United national peacekeeping and political affairs

WHO - World Health Organization

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1. INTRODUCTION

1.1. Background

Female genital mutilation (FGM) is a deeply rooted practice embedded in the cultural, social, traditional and religious beliefs of the communities that perform it. FGM is commonly found in Africa, the Middle East, and parts of Asia. The world health organization (WHO) classified FGM into four types, which include all the procedures involving partial or total removal of the external female genital or other injuries to the women genitals for non-medical reasons [1]. Globally, more than 200 million women and girls went through female genital mutilation procedure with Somalia having one of the highest prevalence rates at 98% [2]. Although the international community has invested significant effort to end FGM around the world and in Somalia, the practice remains prevalent in Somalia particularly among the vulnerable communities such as internally displaced person (IDP) [3].

The international displaced migration reported that displaced populations in Somalia are at risks related to gender-based violence including FGM due to factors such as lack of livelihood, poverty and civil protection systems [4]. The practice of FGM has a significant impact in Somalia and has been linked with beliefs on marriageability, modesty, and purity [5]. Moreover, misconceptions regarding religious obligations reinforce the idea that it is essential for a girl's social acceptance and transition into adulthood [6]. As a result, the practice continues due to social pressure, fear of exclusion, and lack of awareness about its harmful effects, even within displaced populations [7]

The consequences of FGM include pain from the tissue damage and scaring, chronic track infection, unusual discharge and itchiness, menstrual problems, excessive amounts of scar tissue (keloids), sexual health problems, increased risk of childbirth complications, and psychological problems such as depression and anxiety. FGM can damage the anatomic structures affecting sexual sensitivity and leading to decreased sexual desire and pleasure [8]. Genitourinary tract infections, abscess formation, and septicemia or even the presence of HIV infection have all been related to the practice of FGM particularly type III which is associated with the most severe complications [9]. The practice can also lead to a number of other issues like, dyspareunia, perineal tears and prolonged labor [10]. Re-educating individuals about

female genital mutilation (FGM) presents multifaceted and complex challenges as it involves not only physical health but also cultural identity, economic well-being, legal rights and health experiences. Long-held traditions that see FGM as a necessary step toward full womanhood or an essential part of the marriage process find it hard to give way to new ideas and attitudes about what it means to be female, especially when the new ideas conflict with long-held values and are seen to be pushed by Western cultures that are simultaneously seen as undermining local values [11].

1.2. Problem Statement

Female genital mutilation is a harmful practice affecting over 200 million girls and women worldwide. WHO reported that FGM is not something of the past; it is still being practiced up to today and those who undergo it may suffer lifelong physical, mental, reproductive health complications and even death in some cases. Despite having no health benefits, FGM practice carries on, especially in humanitarian settings where poverty and a community's instability increase communities vulnerability to the harmful practice make them more likely to perform FGM on their daughters [8].

The global effort to end FGM are leaded by organizations like United Nations Population Fund (UNFPA) and WHO, which they focus on providing technical guidance, impressive advocacy, and offering policy development support and aim to eradicate the practice by 2030, these initiatives include training healthcare providers to manage FGM complications and community engaging. However, these efforts face challenges in reaching the most affected populations. In a humanitarian setting like refugee and IDP camps, the continuation of female genital mutilation (FGM) is often due to mis-information regarding its risk and consequences, and deeply rooted cultural practices [12]. A study among Somali refugees in eastern Ethiopia revealed high prevalence of FGM, with significant support for its continuation. This support was attributed to a lack of awareness about the harmful consequences of FGM and the perpetuation of cultural norms within displaced communities [13]. The growing trend of the medicalization of FGM, where healthcare workers perform the act, leads to a false sense of safety around the practice, which complicates the effort to eliminate the practice. This trend undermines health education campaigns aimed at eradicating FGM by legitimizing the act in medical setting reducing the perceived harm [14].

Addressing FGM in humanitarian settings requires comprehensive educational programs that target communities and offer accurate knowledge about why the practice is harmful and what the community can do to make it stop as well as strengthening the local health system to support affected individuals. [15]. Reports indicate that even when awareness exists, support for the practice remains high. For instance, 76.4% believing that FGM should persist despite awareness of its risks, particularly regarding the less severe forms such as Type 1. The lack of knowledge and misinformation about the health implications of FGM among displaced populations significantly impacts the efforts to combat the practice [16]. The ongoing humanitarian crisis not only limits the essential access to medical care but also reinforces cultural resistance to change, making it mandatory for global organizations like UNICEF and UNFPA to increase their advocacy and educational initiatives within this kind of communities [17]. Moreover, Somalia's 2012 provisional constitution prohibits FGM, yet no specific legislation criminalizes it, leaving a legal vacuum. In regions where cultural norms favor FGM, this lack of enforceable protection makes girls especially vulnerable [18], [19].

Beyond physical health, FGM has serious implications for women's rights and psychological wellbeing. It has been associated with decreased sexual and marital satisfaction, lower quality of life and risk of divorce [20] [21]. Researchers have identified links between FGM and increased rates of divorce, particularly among women aged 31-45. Factors such as law income, spousal violence, infidelity and reduced sexual frequency were significantly associated with lower sexual quality of life among circumcised women [22]. A decline in women's sexual quality of life increases the chance of negative consequences such as spouse violence, reduction in the frequency of sexual intercourse and marital infidelity [23].

Despite the ongoing national and international effort to combat FGM, enforcement of laws remains weak and entrenched social norms are slow to change [24]. Existing interventions often focus on raising awareness about the harmful effect of FGM and provides education programs to the communities [25]. However, these efforts may not be sufficient to overcome the complex and deeply embedded challenges that Somalia faces. Notably, many interventions fail to adequately engage men and boys in fight against FGM, despite their importance in shaping attitudes and behaviors related to gender and sexuality[26].

To address these gaps, there is a need for innovative and evidence-based interventions that do work and engage the whole community, include men to promote behavioral change and reduce FGM practices in Somalia and within the IDP population. This approach should combine the health promotion with community dialogue, education and economic empowerment to create supportive environment for women who are at risk of FGM. Addressing the root causes of FGM and empowering both women and men to protect the health and rights of their daughters will contribute to the global effort to eradicate the practice and promote equity and justice for all [26].

1.3. Justification of The Study

Despite the overwhelming demand for health services, global humanitarian health initiatives remain critically underfunded. This is true in Somalia, where the authorities have been trying to eradicate female genital mutilation for more than 30 years.

Although FGM is acknowledged globally as a public health and human rights concern, there is not enough research in Somalia to assess the knowledge attitudes and practice of the population, as well as the effectiveness of the health education to reduce the practice specially in the displaced communities and rural areas. Existing studies report that misinformation, deeply rooted cultural beliefs, and limited access to healthcare services contribute to the continuation of FGM in Somalia.

The general situation in Somalia - characterized by a fragile healthcare infrastructure, service disruption due to financial constraints, high illiteracy, nearly nonexistent reproductive health education, and gender-based violence - further exacerbates the country’s challenges.

Despite the international and national agencies’ effort to eliminate the practice, FGM still faces certain challenges such as lack of standardized health education programs, weak or no legal enforcement and the social need to continue the practice.

Recognizing the primary obstacles to the prevention of FGM and understanding how well-targeted interventions may impact a community's knowledge and attitudes are essential if we are to make any significant progress.

1.4. Objectives

1.4.1. General Objective

To assess the impact of health education interventions on knowledge, attitudes and practices (KAP) regarding the female genital mitilation (FGM) among males and females in Somalia's internally displaced persons (IDP) camps.

1.4.2. Specific Objectives

Before the health education

1. To evaluate the knowledge of males and females regarding the health risks and consequence of FGM.
2. To identify the barrier or the factors which influence the behavior change regarding FGM practice.
3. To assess the misconceptions related to FGM

After health education

1. To measure the changes in knowledge, attitude and practices after implementing the health promotion.
2. To assess whether families are willing to stop practicing FGM after learning about its effect.

1.5. Hypothesis of the Study

- The Somali population maintains harmful misconceptions and limited knowledge regarding female genital mutilation (FGM).
- The knowledge of female genital mutilation (FGM) will be higher among Somali women compared to Somali men.
- There will be a significant association between knowledge and attitudes of FGM.
- Sociodemographic factors, such as age, education level and economic level will be significantly associated with attitudes and knowledge of FGM among Somali women and men.
- The implementation of a comprehensive health promotion intervention will significantly improve FGM-related knowledge among the Somali population.

2. GENERAL INFORMATION

2.1. Introduction

Female Genital Mutilation (FGM) is a major public health and human rights issue, especially for women of reproductive age. It leads to serious complications, including childbirth risks and long-term physical and psychological harm. Despite having no medical benefit, FGM remains widespread in Somalia, a county where it lacks even the basic resources [27]. Continued advocacy, legal reform, and community and gender-based interventions are essential to end the practice and protect vulnerable women and girls [28].

This chapter provides an overview of the key factors surrounding Female Genital Mutilation (FGM) in Somalia, including its social, religious, and health implications. It highlights the geographic and humanitarian context, the impact of conflict on women and girls, the types and consequences of FGM, as well as attitudes among healthcare providers and the general public. It also addresses the role of men, religious beliefs, and the global and regional prevalence of FGM, particularly in displaced and migrant communities.

2.2. Geographic Description of the Area

Somalia

Somalia is located in the horn of Africa, bordering Ethiopia, Djibouti and Kenya. It covers approximately 637,657 square kilometers which makes it geographically diverse. Somalia faces two major environmental problems: arid/semi-arid conditions and seasonal monsoons. The country represents an important coastal position which provides access to the maritime trade routes, making it geopolitically significant. However, Somalia has endured decades of political instability with civil war and conflict devastating both its public health system and essential infrastructure.

Currently, Somalia operates as a federal republic comprising five federal member states together with Mogadishu as its capital. The five states maintain individual governments while sharing power with the Federal Government of Somalia (FGS) through which they seek guidance on national matters including defense operations and foreign policy.

Garowe

Garowe is the capital city of Puntland State in northeastern Somalia. It functions as the political administrative and economic center of the state while it acts as an essential point for carrying out humanitarian operations and development projects because of its strategic geographical position. UNOCHA reported that the region deals with three main issues consisting of water scarcity, food insecurity and population displacement which stem from persistent climate shocks and war events.

Garowe host several IDP camps, which accommodate thousands of displaced families who come from surrounding rural areas affected by conflicts, natural disasters and poverty. These camps act primarily as home for women, children and vulnerable populations who faced health related challenges and security issues.



Figure 1. Map of Somalia showing governorates and boundaries.

Internally Displaced Persons (IDP) Camps in Puntland State, Somalia

All the IDP camps are located on the outskirts of Garowe, the capital of Puntland state in northeastern Somalia which hosts around twenty-five camps.

The residents in these camps face severe challenges in accessing basic services such as health facilities, legal protection for women's rights and proper shelters resulting in many women to go without essential medical care like mental health and reproductive healthcare. These women and girls are vulnerable to harmful practices such as FGM and gender-based violence due to lack legal enforcement. [29]

According to KAALO, the geographically location in Garowe IDP camps prevents the regular distribution of humanitarian assistance both from NGOs and government agencies which worsens the hardship experienced by the displaced people [30].

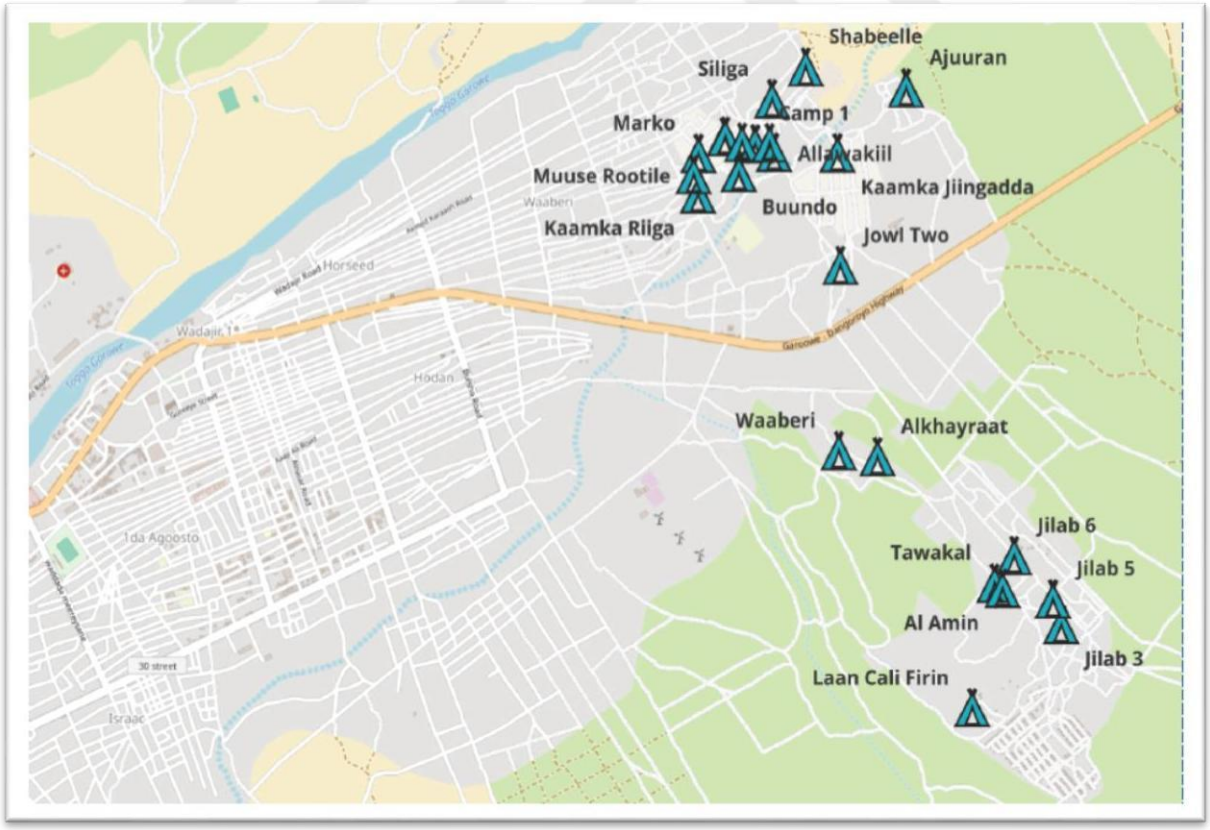


Figure 2 Map of the locations of IDPs in Garowe.

2.3. The Impact of Conflict on Somali Women and Girls

The impact of war and conflict on Somali women is significant and complicated. Women in Somalia have been exposed to sexual and gender-based violence, which has been used as a weapon of war resulting in trauma and displacement [31]. Life for these women is challenging as Somalia ranks the fourth lowest in gender equality globally. Prevalence of early pregnancy, maternal and infant mortality rates are some of the highest worldwide. Somali women across all clans and socio-economic groups have experienced violent events as a result of the conflicts in southern Somalia since 1991 [32].

Moreover, the prevalence of FGM also occurs at the highest rate globally with 98% across all Somali regions specifically affecting most nomadic women. Women in the rural areas undergo this practice slightly more than those in the urban regions [33].

2.4. Religious Aspects of FGM

FGM is often mistakenly linked to religious obligations although no religion mandates the practice. The practice of FGM existed before any of the major religions, before it becomes prevalent in other areas such as Africa, Middle East and south-east Asia which it spared due to cultural migration. Despite this, many practitioners today believe it is a religion requirement, particularly within some Muslim communities who are influenced by Shafi'i school of Islamic jurisprudence. They consider it as obligatory for both male and female [34]. However, this believe is often based on weak and inauthentic Hadiths. Two frequently cited hadiths are classified as weak due to unreliable narrators and chain of transmission. One is Um Atteya's Hadith, which advises against sever cutting, and another weak hadith stated that FGM is an honorable for women but obliged to men. Despite these claims, most of the Islamic schools and fatwas reject the notion that FGM is a religion obligation [35] .

In Christianity, FGM has no biblical basis. Yet, it persists among some Christian communities in Africa, such as Coptic Christians in Egypt and orthodox Christians in Ethiopia. Similarly, Judaism also does not endorse FGM. However, the beta Israel jew community in Ethiopia historically practiced it due to cultural influences[36].

Religious leaders play an important role in shaping societal norms, including perspectives on female genital mutilation FGM. The interpretation of Islamic teachings significantly influences weather communities continue or abandon the practice [37].

2.5. Types of FGM

Female genital mutilation involves partial or total removal of external female genitalia or other injuries to the female genital organs for no medical reasons. In 1997, the WHO classified FGM into 4 types [38].

Type 1 (Clitoridectomy): it involves partial or total removal of the clitoral glands (the external and visible part of the clitoris) and \ or the clitoral hood (the folds of the skin covering the clitoris).

Type 2 (Excision): it includes the removal of the clitoral glans and the labia minora with or without removing the labia majora.

Type3 (Infibulation): this involves narrowing the vaginal opening by creating a seal through cutting and repositioning the labia minora and labia majora, the vaginal sealing is done with or without the removal of clitoral hood and glands 'type 1 FGM'.

Type 4: all other harmful procedure that is done of the female genital without any medical reasons such as: piercing, incising, scraping and cauterization.

The term (De-infibulation) or procedure it refers to the practice of cutting or open the sealed vaginal opening of the women who undergone 'type 3 FGM'. This procedure is usually done to allow sexual intercourse or to ease childbirth and it is often necessary to improve the women's health and wellbeing. However, some women do the narrowing of the vagina opening again after it being opened during childbirth. This is known as re-infibulation and it further exacerbates women's health risks as reported by WHO [38].

In Somalia, the most common type is Pharaonic which refers to Type 3 FGM- infibulation. According to demographic health survey in 2020, approximately 64% of Somali women undergo Pharaonic Type [39] .

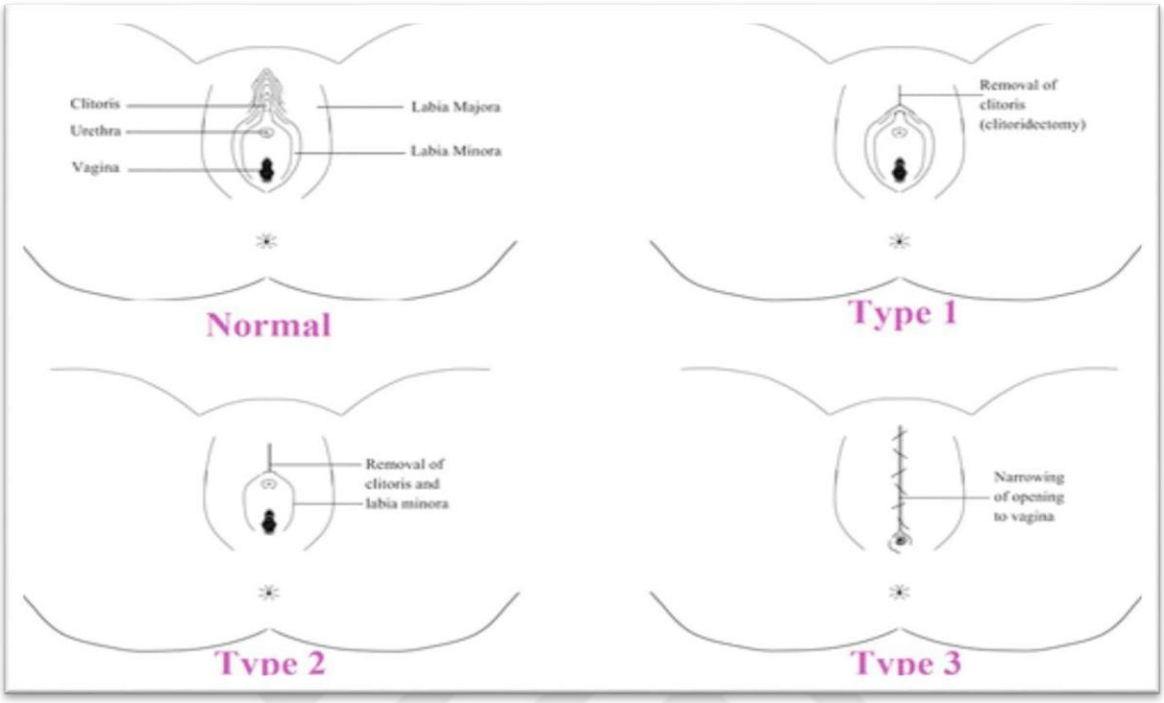


Figure 3 Normal anatomy of vulva, FGM types [40].

2.6. Literature Review

2.6.1. Health Consequences of FGM

All forms of FGM are associated with increased risks of medical complications, with the risk increasing with more severe forms such as Type 3. Immediate health consequences can include severe pain, excessive bleeding, genital swelling, fever, infections such tetanus, difficulty urinating, poor wound healing and even death. In the long term, FGM can result in chronic urinary infections, menstrual difficulties, forming of scar tissues or keloids, sexual difficulties including pain and reduced satisfaction, and serious obstetric complications such as need for cesarean section or even new born death [41]

Despite clear global consensus that all forms of FGM carry health risks, ,many communities particularly in Somalia perceive certain types, such as the Sunni form as harmless or medically acceptable [42].

2.6.2. The public acceptance of a certain type.

In many FGM practicing communities in Somalia, Sudan and parts of the horn of Africa, FGM is commonly categorized locally into two forms: “pharaonic” (Type III or infibulation) and “Sunni”, a milder version that typically involves partial or total removal of the clitoris and\ or the prepuce. While both are medically unnecessary and harmful, the “Sunni” type is increasingly perceived as more acceptable, especially among populations experiencing growing awareness of FGM’s health and legal consequences [45].

In a multi-country analysis, Shell-Duncan et al. (2010) developed a spectrum model of readiness to change, where communities that once strongly supported infibulation often shifted toward supporting Sunni FGM instead of abandoning the practice altogether. This finding was especially prominent in Somalia and Northern Sudan, where partial change was seen as a socially acceptable compromise [46].

An analytic study by J. Abdulkadir reported that even when FGM is perceived as mild, healthcare providers report ongoing difficulties in gynecological examination, pain, and increase fear or avoidance of healthcare among the affected women [44].

2.6.3. Knowledge and Attitudes Toward FGM Among Healthcare Workers and General Public

A study titled “ KAP of female health care services providers on FGM” offered an important insight into the perspectives of the female healthcare workers on FGM-C, conducted in 2019 at Banadir hospital in Mogadishu Somalia, this study randomly selected 144 female doctors and nurses using structured questionnaire assessing their knowledge, attitude and practice toward continuation or eradication of FGM practice. One of the key findings revealed that approximately 60% of the respondents had undergone FGM themselves, highlighting the deep-rooted nature of the practice even among the trained medical professionals. Despite this, majority of the respondents reported FGM as a harmful practice and expressed strong opposition to its medicalization practice which allows healthcare providers to perform FGM in clinical environments under false pretenses of safety. However, cultural beliefs remain

deeply entrenched as 76% of the participants believed that FGM protects against adultery. This reveals a continued tension between medical knowledge and sociocultural norms, giving us a clear picture of how deep entrenched belief can affect their professional awareness of harm [47].

2.6.4. Men's Role Regarding FGM in Africa

A 2015 systematic review of peer-reviewed articles from 15 African countries examined men's role in female genital mutilation (FGM) abandonment. The study discovered that many men want to stop FGM because of its physical and psychosexual consequences yet they encounter social obligations and sexual communication barriers as primary obstacles. The study has also demonstrated that education was the most significant factor which influenced men's support for abandoning FGM [48].

A UNICEF regional report corroborates these findings, indicating that in many countries where FGM is prevalent, men play an active role in deciding whether their daughters undergo circumcision. The report stresses that involving men and boys in health education, improving their knowledge, and fostering communication between men and women are essential steps toward ending the practice. When men are not engaged or lack information, FGM is more likely to persist [49].

Research among Somali and Harari communities found that marriageability is a major reason for FGM, with Somali men often preferring to marry circumcised women, thus perpetuating the practice. However, the research also documents generational change: younger Somali men, especially those with more education or are exposed to anti-FGM messaging, increasingly reject the practice. The study also describes cases where men who were aware of the harms of FGM still saw their daughters subjected to it, often because of lack of communication or differing views within the families [50].

2.6.5. FGM Prevalence Globally and in European Countries

More than 230 million girls and women worldwide have undergone FGM, primarily in 31 countries across Western, Eastern, and North-Eastern Africa, as well as parts of the Middle East and Asia. The practice has also been reported in Europe, Australia, and North America

due to migration. Although there has been a decline in FGM prevalence among younger generation over the past 30 years, progress remains uneven and limited. Given the current trends and population growth, the number of girls and women affected is projected to rise significantly in the next 15 years[51].

FGM is a significant public and human rights concern even in Europe. It primarily affecting women and girls from migrant communities originating from countries where the practice is prevalent. Current estimates suggest that approximately 600,000 women and girls in Europe have undergone FGM, with around 190,000 more at risk across 17 European countries - including Germany (104,000 affected women), Sweden (68,000), Belgium, France, Italy and Netherlands. The risk of FGM increases when girls return to their countries of origin, though the practice is less common among second and third generation migrants in Europe [52].

Most of European countries have specific laws criminalizing FGM, while others prosecute under general criminal or child protection laws. The Istanbul convention remains the most comprehensive legal instrument in Europe against women and domestic violence, which criminalizes FGM as a gender-based violence, mandates preventive measures, specialist support services, and professional training for detection and reporting [53].

An ethnographic and qualitative research conducted in Sweden, found that many Somali immigrants have abandoned FGM after exposure to legal, medical and the social standards of the hosted nation. As a result of the awareness they showed understanding of human right and concerns of their daughters health and wellbeing [54]. Similarly, a study found that the Somali parents living in Norway displayed clear generational shifts, with younger parents rejecting FGM entirely. However, some old migrants still considered it a religious or cultural obligation [52].

In summary, FGM in Europe predominately affects migrant communities, with hundreds of thousands of women and girls living with its consequences or at risk [52]. legal framework is strong and effective but challenges remain in data, awareness, and service provision to effectively prevent and respond to FGM across the continent [54].

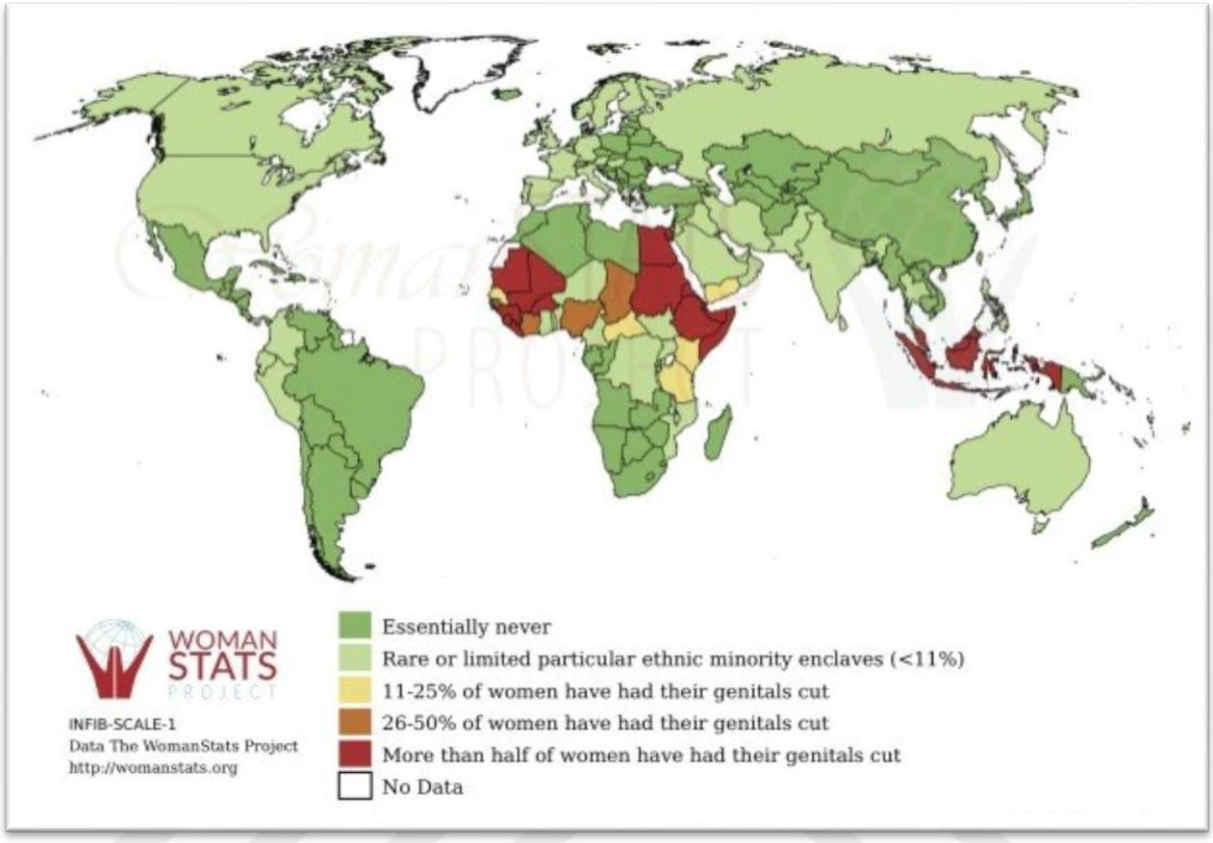


Figure 4: Prevalence of FGM globally [55].

3. MATERIALS AND METHOD

3.1. Study Design

The study was an interventional and cross-sectional study.

3.2. Study Location

The study was conducted in IDP camps located in Garowe **Figure 2** The camp residents originate from various regions of Somalia, representing diverse segments of the Somali population with different cultural believes, practice and knowledge regarding FGM. Additionally, the population in these camps consists of various age groups and genders including young and elderly women and men enabling a comprehensive analysis of FGM perspectives.

Another reason for selecting this study site of Grauwe's IDP camps was the accessibility and willingness of the population to participate in the study. The presence of humanitarian organizations in the area made it a suitable location for research. These institutions actively address FGM as well as gender-based health issues which enhanced the study's overall context.



Figure 5. Picture of the IDPs camps in Garowe, Somali.

3.3. Study Population

The study population consisted of women and men residing in the IDP camps in Garowe during the period from April to July 2024.

3.4. Sample Size Determination

The sample size for this study was determined based on the target population of approximately 5,000 residents in the Jilab 2 IDP camp, Garowe. To ensure statistical reliability, I used 95% confidence level along with 5% for margin. Using standard sample size calculations formulas led to determining the necessary sample size which accounted for the anticipated number of populations with the target characteristic. The research adopted a

final sample of 360, ensuring that the data would be representative and significant to assess the knowledge, attitudes and practices of FGM within the community.

Considering that there might be missing data and individuals who did not agree to participate in the study, it was aimed at reaching at least 380 participants.

3.5. Sampling Techniques

The researchers employed purposive sampling to obtain participants from Jilab 2 IDP camp. Participants were selected using snow ball sampling during the study period by identifying initial participants who meet the study's inclusion criteria and then ask them to refer others who also met the criteria. This approach is particularly useful in dealing with a sensitive topic like FGM and in reaching individuals who are hard to reach within the community.

3.6. Inclusion and Exclusion Criteria

3.6.1. Inclusion Criteria

- Men and women residing in Jilab 2 IDP camp, Garowe during the study period (April- June 2024)
- Aged 18 years and above
- Able to communicate in Somali or English to ensure understanding of the questionnaire and the health education.

3.6.2. Exclusion Criteria

- Visitors, temporary workers or individuals not considered permanent members of the camp, to maintain the integrity of the sample representing the target community.
- Participants who had previously attended similar health education sessions related to FGM within the last 12 months, to reduce bias due to prior knowledge or exposure.

3.7. Data Collection Tool

Pre- Health Education questionnaire:

A structured questionnaire was used for data collection. The questionnaire consisted of four sections.

1. Demographic information: this section included questions on age, gender, education level, employment status and economic status.
2. Knowledge assessment: participants were asked about their awareness of FGM, its impact on sexual pleasure and the transmission on communicable disease, and FGM related complications during childbirth.
3. Attitudes toward FGM: this section examined the participants' beliefs about FGM, if they thought it protects virginity or if it should continue. It also assessed their willingness to circumcise their daughters and the role of social and religious pressure in shaping their views.
4. Consequences of FGM: participants answered questions about their understanding of mental health, infections, long term complications and social consequences of FGM.

Post-health education questionnaire:

After the health education intervention, a structured questionnaire was used to assess changes in the participants' knowledge, attitudes and perceptions of FGM. The questionnaire had four components:

1. Demographic information: age, gender, marital status and FGM status.
2. Knowledge assessment: participants were asked to rate their knowledge before and after the education session as well as questions to assess their understanding of FGM as a traditional human rights violation, religious requirement and health risks.
3. Attitudes toward FGM: their view whether FGM should stop or continue.
4. Behavioral intentions: they were also asked if they felt more confident discussing FGM in their community.

3.8. Variables

3.8.1. Independent Variables

- Age
- Gender
- Marital status
- Education level
- Employment status
- Income level
- Place of residence
- Circumcision status
- Exposure to health education

3.8.2. Dependent Variables

- Knowledge, attitudes, and perceptions toward FGM: including knowledge of FGM types, health risks, legal status, effects on sexual health and FGM complications.
- Attitudes toward FGM: Beliefs about its necessity, continuation, impact on virginity and hygiene.
- willingness to practice or support FGM.
- Social and religious factors.
- Change in knowledge and attitudes after health education.
- Willingness to discourage FGM in the community.

3.9. Data Collection Method

First Stage:

The study data were collected between April- June 2024 through a Google forms questionnaire distributed to the entire targeted population within the IDP camp. Before starting data collection, two female data collectors were recruited and trained to assist

participants who needs in completing the questionnaire. Both had previous experience working under humanitarian NGOs, held doctoral degrees, and were well known within the community, which facilitated trust and engagement.

The training took place over two consecutive days in a meeting room, with sessions lasting approximately 3 hours each day. The training covered:

- An overview of the study's objectives and ethical principles.
- A detailed, item-by-item review of the questionnaire to ensure full comprehension of each question's intent.
- In-depth discussion of the Somali-language wording to ensure clarity, correct meaning, and accessibility for people with varying literacy levels.
- Demonstrations and role-play exercises to standardize delivery and ensure neutral, non-leading assistance.

The participants with limited proficiency in reading English or Somali received assistance while completing the questionnaire to ensure clarity in their responses. The participants were allowed to ask the researchers to explain the questions clearly without receiving opinion-based hints.

Informed consent was obtained from all participants before they began the study. Participants' personal information was securely stored and used exclusively for research purposes to ensure confidentiality. The initial questionnaire aimed at assessing their knowledge, attitudes and practices regarding FGM; based on the responses, a subset of participants was selected for the next phase of the study.

Second Stage: Health Education and Follow – up Questionnaire

Following the initial questionnaire, a health education session was conducted for 10% of participants who demonstrated poor knowledge of FGM. These participants were selected based on their responses to the question "Does FGM cause delivery complications?" those who answered "no" to this question were considered to have limited knowledge and were invited to attend the health education session. In addition, five more participants were included based on the researcher's assessment that they demonstrated low knowledge across

multiple questionnaire items, even if they did not meet the primary selection criterion. This adjustment was made to ensure that individuals most in need of the health education as indicated by their overall response which they could benefit from the intervention. While this represented a minor deviation from the original selection plan, it was considered a pragmatic decision to maximize the intervention's relevance and community impact.

The health education session lasted around 20 minutes, and it was presented by the researcher and trusted male/female community members, who assisted in facilitating the session. The session focused on raising awareness about the health risks and consequences of FGM, and the final 5 minutes were dedicated to addressing any questions participants had. After the session, the same group of participants was given a follow-up questionnaire, which included similar questions to the initial one, but with a focus on assessing changes in knowledge after the education intervention. The follow-up questionnaires were administered between 7 and 10 days after the session, depending on the time at which each participant could be reached.

The initial questionnaire, follow-up questionnaires and the health education presentation were translated into Somali. The translation was verified by a bilingual expert to ensure accuracy and cultural relevance. Data were securely stored in the researcher's Google forms account and access was restricted to the researcher to ensure confidentiality.

3.10. Statistical Analysis

Data analysis was done using the statistical program IBM SPSS Statistics Version 26. Results were described in terms of frequencies, using descriptive statistics. The conformity of the data to normal distribution was checked with Kolmogorov Smirnov and Shapiro Wilk tests. Since the data did not show a normal distribution Chi-square, Mcnemar and Kruskal Wallis tests were used to identify relationships between independent/dependent variables. Statistical significance was determined as <0.05.

3.11. Ethical Consideration

Ethical clearance for this study was obtained from the Ankara Yildirim, Beyazit University (AYBU) health science ethics committee, with the registration number (14.06.2023\313).

Additional permission to conduct the research was granted by Puntland state's ministry of health (office director-General) to conduct the research within the IDP camps in Garowe, Somalia.

Before the data collection process began, the purpose of the study was explained to all participants. Written informed consent was obtained, and participants were informed of their right to withdraw at any time without consequences. Community sensitization ensured that the participants understood the research posed no risk to them individually or to the community. The study was carried out on a voluntary basis; no fees were requested from or paid to participants. To ensure confidentiality, all personal information was securely stored, accessible only to the principal researcher, and anonymized during analysis. The data were used solely for academic purposes, and ethical protocols were strictly followed to protect participants' dignity, privacy and well-being.

4 RESULTS

4.1. Introduction to Results

This chapter presents the key findings from the data analysis, addressing the research hypothesis. The study explores participants' understanding of Female Genital Mutilation (FGM) and their perspectives and how health promotion initiatives influenced these beliefs.

4.1.1. Socioeconomic and Demographic Features of the Participants

The data were analyzed to identify demographic and socioeconomic characteristics of the Somali men and women regarding female genital mutilation (Table 1). The study included a total of 363 participants who fully completed the survey, resulting in a 100% response rate. The research data showed that participants averaged 28.08 years in age with a standard deviation of 8.48 years. The study participants ranged in age from 18- 63 years. The study participants consisted of 63.9% female respondents alongside 36.1% male participants.

All 363 participants in this research participated voluntarily and finished the survey. According to the data presented in table 4.1, the mean age of the participants was 28.08 years (SD=8.48) with the youngest participant being 14 years old while the oldest was 63 years old. Female participants accounted for the majority, representing 63.9% of the total study population, while the remaining 36.1% were male.

Regarding educational background, 38.3% of the participants completed university level education while 23.1% had basic reading and writing skills. A further 14.0% of respondents indicated they were unable to read or write and 11.0% had achieved grade 9 education or higher. In terms of employment status, 33.3% of the participants indicated they were students, followed by 30.0% who were unskilled workers. While 14.9% of the skilled workers and 13.2% housewives and 7.7% reported working in the healthcare sector.

In terms of the income status, income levels among IDPs in Somalia are extremely low, with many households subsisting on less than $30 per month annually, reported by the community head of the IDPs Garowe. In the study most respondents (77.1%) received yearly earnings

below $350 while 12.1% earned between $350 and $500 and 10.2% earned above $500 with a mean of 2.00 (SD = 1.15).

Table 1 Socioeconomic and demographic traits of the all Participants.

Variable	Category	Frequency (n)	Percentage (%)
Gender	Female	232	63.9
	Male	131	36.1
Education Level	Cannot read and write	51	14.0
	Can read and write (basics)	84	23.1
	Can read and write without education	31	8.5
	Completed primary education	18	5.0
	Completed grade 9 and above	40	11.0
	University level	139	38.3
Employment Status	Skilled worker	54	14.9
	Unskilled worker	109	30.0
	Student	121	33.3
	Not working – Housewife	51	14
	Healthcare worker	28	7.7
Income Status	Less than $350/month	280	77.1
	More than $350/month	46	12.7
	More than $500/month	37	10.2

4.1.2. Knowledge About Female Genital Mutilations (Pre-education)

Table 2 table presents the participants knowledge regarding female genital mutilation. All the responses 100% were aware that FGM is divided into two types, indicating universal basic knowledge of the practice. Regarding the effects of FGM on sexual pleasure, 67% believed that the Pharaonic type reduced sexual pleasure, while a smaller proportion of 14.3% thought both types affect it, and 17.6 believed neither type effect the sexual health. In terms of health risks, 56.5% reported that FGM could facilitate the transmission of HIV\AIDS, and a majority of 90.6% recognize that FGM could lead to complications during childbirth. Furthermore, when asked about scar formation, 73.0% associated it primarily with the Pharaonic type, while 13.2% believed both types could cause scarring.

Table 2 Knowledge about female genital mutilation.

Variable	Response category	Frequency (n)	Percent (%)
FGM is divided into two types?	Yes	363	100
Affects sexual pleasure	Pharaonic only	246	67.8
	Sunni only	1	0.3
	Both types	52	14.3
	Neither	64	17.6
Can transmit HIV/AIDS	Yes	205	56.5
	No	158	43.5
Causes delivery complications	Yes	329	90.6
	No	34	9.4
Causes scar formation	Pharaonic only	265	73.0
	Sunni only	7	1.9
	Both types	48	13.2
	None	43	11.8

4.1.3. Attitudes Toward Female Genital Mutilation (Pre-education)

Table 3 summarizes participant's attitudes toward FGM. Only 44.9% of respondents considered FGM to be a harmful traditional practice, while 39.4% believed that its harmfulness depends on the type. Regarding the legal status 43.0% believed that Pharaonic is forbidden by law, whereas 33.9% were unsure, which demonstrated gaps in legal awareness. More than half of the participants, 58.4%, rejected the idea that FGM protects virginity. Views on uncircumcised girls were divided, with 52.1% indicating that they are not a considered as a "good girl" while 47.9%, thought otherwise. Concerning sexual feelings, 65.0% believed that uncircumcised female experience greater sexual sensation. Although 78.2% reported that they would circumcise their daughters, most supported only the Sunni type. Similarly, 66.4% believed FGM should continue in the form of Sunni circumcision, and 70.2% agreed with its continuation in the future. Notably, 56.5% admitted that social pressure influenced their views, and 75.2% that religious leaders could affect their opinion.

Table 3 Attitudes toward female genital mutilation.

Variable	Response category	Frequency (n)	Percent (%)
FGM is harmful	Yes	163	44.9
	No	57	15.7
	Depends on type	143	39.4
FGM forbidden by law	Pharaonic only	156	43.0
	Sunni only	3	0.8
	Both types	81	22.3
	I don't know	123	33.9
FGM protects virginity	Sunni only	43	11.8
	Pharaonic only	23	6.3
	Both types	85	23.4
	No	212	58.4
Uncircumcised girls are good	Yes	174	47.9
	No	189	52.1
Uncircumcised feel more	Yes	236	65.0
	No	127	35.0
Circumcise daughter	Yes, Sunni	284	78.2
	Yes, Pharaonic	9	2.5
	No	70	19.3
FGM should continue	Only Pharaonic	8	2.2
	Only Sunni	241	66.4
	Both types	3	0.8
	Neither	111	30.6
FGM under age 5	Yes	112	30.9
	No	251	69.1
Social pressure affects decision	Yes	205	56.5
	No	158	43.5
Religious leaders can influence	Yes	273	75.2
	No	89	24.5
Agree with FGM in future	Yes, Sunni	255	70.2
	Yes, Pharaonic	21	5.8
	No	87	24.0

4.1.4. Perceived Consequences and Practices Related to FGM (Pre-education)

Table 4 reports the perceived consequences and practices related to FGM. A significant proportion 54.8% believed that mental health problems are primarily associated with victims of the pharaonic type, while 34.4% thought there were no mental health consequences. Similarly, 37.2% linked the risk of tetanus to the pharaonic type. 31.1% believed that both Pharaonic and Sunni could cause tetanus infection. In terms of marriageability, 57.3% of the participants indicated that undergoing FGM lowers the chance of marriage, challenging traditional justifications for the practice. When asked about long-term health complications, 57.6% believed that only pharaonic causes such issues, while 29.2% denied any long-term complications altogether. These results reveal that while there is a recognition of certain health risks associated with FGM, particularly with the more severe forms, misconceptions and gaps in understanding persist among the population.

Table 4 Perceived Consequences and Practices Related to FGM (Pre-education)

Variable	Response category	Frequency (n)	Percent (%)
Mental health problems	Only Pharaonic	199	54.8
	Only Sunni	8	2.2
	Both types	31	8.5
	No	125	34.4
FGM causes tetanus	Only Pharaonic	135	37.2
	Only Sunni	12	3.3
	Both types	113	31.1
	No	103	28.4
FGM increases marriage chance	High chance	155	42.7
	Low chance	208	57.3
FGM causes long-term complications	Only Pharaonic	209	57.6
	Only Sunni	13	3.6
	Both types	35	9.6
	No	106	29.2

4.1.5. Socioeconomic and Demographic Features of the Participants (post education group)

This table presents the demographic characteristics of the controlled group who took part in the FGM educational session.

The majority of the participants were female (80.5%), primarily because most of the study population consisted of women. Additionally, after selecting 10% of participants with low knowledge levels, women were still more prevalent in this group and demonstrated greater willingness to participate in the study Most respondents were single (78.0%), followed by smaller proportions of divorced, married, and widowed individuals. Almost half of the female participants reported undergoing Sunni-type circumcision (48.8%), while 31.7% reported Pharaonic. The remaining of the respondents were male 19.5%, contributing valuable perspectives, as the study aim to explore gender-based differences in knowledge and attitudes toward FGM. These findings highlight the varied personal experiences of participants and the relevance of targeting diverse groups in awareness-raising interventions (Table 5).

Table 5 Demographic of the Participants After the Health Education – Controlled Group

Variable	Category	Frequency (n)	Percent (%)
Gender	Male	8	19.5
	Female	33	80.5
Marital Status	Single	32	78.0
	Married	2	4.9
	Divorced	5	12.2
	Widow	2	4.9
Female Circumcision Status	Yes (Sunni)	20	48.8
	Yes (Pharaonic)	13	31.7
	I am male	8	19.5

4.1.6 Perception and Beliefs of the Participants After Health Education

The table explores participants' beliefs and perceptions, highlighting both cultural and health related dimensions. A strong majority (82.9%) considered FGM to be merely a tradition, yet

95.1% believed it has no health benefits, and 85.4% recognized it as a human rights violation. While views were mixed on the religious necessity of FGM (51.2% said yes, 48.8 said no), nearly all participants acknowledge the practice's health risks, such as infection and complications during childbirth. All the participants (100%) agrees that FGM is still common in Somalia and illegal in many countries **(Table 6).**

Table 6. Perception and Beliefs of the FGM - After Health Education.

Question	Response	Frequency	Percent (%)
Do you think FGM is just a tradition?	Yes	34	82.9
	No	7	17.1
Do you think FGM has health benefits?	Yes	2	95.1
	No	39	4.9
Do you think FGM goes against human rights?	Yes	35	85.4
	No	6	14.6
Do you think FGM is required by religion?	Yes	21	51.2
	No	20	48.8
Do you think FGM can affect sexual health?	Yes	38	92.7
	No	3	7.3
Do you think FGM is common in Somalia?	Yes	41	100.0
Do you think FGM can cause serious health problems?	Yes	39	95.1
	No	2	4.9
Do you think FGM makes childbirth harder?	Yes	40	97.6
	No	1	2.4
Do you think FGM is illegal in many countries?	Yes	41	100.0
Do you think FGM contributes to infections/diseases?	Yes	40	97.6
	No	1	2.4

4.1.7 Self-reported Knowledge and Attitudes Before and After Health Education

This table assesses shifts in attitudes following the health education session. Over half of the participants (51.2%) expressed that FGM should stop completely, while 22.0% supported some modification or reduction of the practice. Interestingly, 26.8% still considered the Sunni type. Moreover, 75.6% reported a change in their attitude and now oppose the practice, and

most respondents (70.7%) felt more confident discussing FGM publicly, and 65.9% stated they would take action to discourage the practice in their communities **(Table 7).**

Table 7 Self-Reported Knowledge, Attitude Before and After Health Education.

Question	Response	Frequency	Percent (%)
Did the session change how you feel about FGM?	Should stop completely	21	51.2
	Should be reduced or changed	9	22.0
	Sunni type is acceptable	11	26.8
Should FGM stop in your community?	Yes	38	92.7
	No	3	7.3
Has your attitude toward FGM changed?	Yes, now I oppose it	31	75.6
	No, still the same	1	2.4
	Still undecided	9	22.0
Do you feel more confident to talk about FGM?	Yes	29	70.7
	No	12	29.3
Will you take steps to discourage FGM in your community?	Yes	27	65.9
	No	14	34.1
After the session, do you now believe FGM should stop in your community?	Yes	38	92.7
	No	3	7.3
Has your attitude toward FGM changed?	Yes	31	75.6
	No	1	2.4
	I am still undecided	9	22
Do you feel more confident to talk about FGM in your community now?	Yes	29	70.7
	No	12	29.3
Will you take steps to discourage FGM in your community?	Yes	27	65.9
	No	14	34.1

4.2. Analysis Test of the Demographic Characteristics of Respondents

4.2.1. Relationships Between Gender and Attitude

A chi-square test of independence was conducted to examine the relationship between gender and participants' attitude toward FGM. As shown in **Table 8**, 44.0% of females and 46.6%

of males considered FGM a harmful traditional practice. Additionally, 16.4% of the females and 14.5% of males viewed it as not harmful, while 39.7% of the females and 38.9% of males believed the harmfulness depends on the type. The association between gender and attitudes toward FGM did not vary significantly $\chi 2$ (2, N=363) = 0.325, p= 0.850, indicating that attitudes toward FGM did not significantly differ between males and females.

Table 8 Relationship between gender and attitude toward FGM.

Gender	FGM is Harmful	Not Harmful	Depends on Type	Total	P value
Female	102 (44.0%)	38 (16.4%)	92 (39.7%)	232 (100%)	0,850
Male	61 (46.6%)	19 (14.5%)	51 (38.9%)	131 (100%)	
Total	163 (44.9%)	57 (15.7%)	143 (39.4%)	363 (100%)	

4.2.2. Relationships Between Education Level and Attitudes

This chi-square test was used to assess the relationship between education level and attitude toward FGM. As presented in Table 9, 52.8% of those with sufficient education considered FGM harmful, compared to only 35.5% of the participants with low education. In contrast, 25.3% of the low educated group reported that FGM is not harmful, while only 7.6% of the sufficiently educated had the same view. The association between education and attitude was statistically significant, $X2(2,363) = 23.922$, $P \leq 0.001$. Participants with higher education levels were significantly more likely to consider FGM as a harmful practice.

Table 9 Relationships education and attitude toward FGM.

Education level	FGM is harmful	Not harmful	Depends on type	Total	P value
Low Educated	59 (35.5%)	42 (25.3%)	65 (39.2%)	166 (100%)	**<0,001**
Sufficiently Educated	104 (52.8%)	15 (7.6%)	78 (39.6%)	197 (100%)	
Total	163 (44.9%)	57 (15.7%)	143 (39.4%)	363 (100%)	

4.2.3. Relationships Between Employment Status and Perception of FGM as harmful

In **(Table 10)** it shows that 67.9% of the healthcare workers and 57.4 of the skilled workers sees FGM as harmful, compared to only 4.2% among housewives. In contrast, 68.8% of housewives believed the harmfulness depends on the type. Chi-square test examined the relationship between employment status and attitudes which was statistically significant, $X2(10, N= 363) = 60.552$, $p < 0.001$. These findings indicate that attitudes toward FGM varied significantly by the employment category.

Table 10 Relationships between employment status and attitude toward FGM.

Employment status	**FGM is harmful**	**Not harmful**	**Depends on type**	**Total**	**P value**
Skilled Worker	31 (57.4%)	2 (3.7%)	21 (38.9%)	54 (100%)	**<0,001**
Unskilled Worker	59 (54.1%)	22 (20.2%)	28 (25.7%)	109 (100%)	
Student	52 (43.0%)	20 (16.5%)	49 (40.5%)	121 (100%)	
Not Working – Housewife	2 (4.2%)	13 (27.1%)	33 (68.8%)	48 (100%)	
Healthcare Worker	19 (67.9%)	0 (0.0%)	9 (32.1%)	28 (100%)	
Other	0 (0.0%)	0 (0.0%)	3 (100%)	3 (100%)	
Total	163 (44.9%)	57 (15.7%)	143 (39.4%)	363 (100%)	

4.2.4. Age Differences by Attitude Toward FGM

A Kruskal – Wallis H test was conducted to determine if there were statistically significant differences in age based on participants' attitudes toward FGM (harmful, not harmful, no depends on type). The distribution of age was not significantly different across the three attitude groups, $H(2)= 3.422$, $P= 0.181$. Therefore, participants' attitudes toward FGM were not associated with significant difference in age (Table 11).

Table 11. Age differences by attitude toward FGM.

Attitude Toward FGM	N	Mean Age	Standard Deviation	KW and p value
FGM is harmful	163	27.60	7.32	3.422; 0.181
FGM is not harmful	57	30.75	10.77	
Depends on the type	143	27.56	8.55	
Total	363	28.08	8.48	

4.3 Descriptive Analysis of Attitude Changes Before and After Health Education

This section presents changes in participants' attitudes regarding female genital mutilation (FGM) before and after the health education intervention, using percentage comparisons. Prior to the intervention, only 55% of the participants believed that FGM is a harmful practice. This increased to 84% after the health intervention. Similarly, the participants who believed FGM is required by religion decreased from 45% to 18% after the health education.

The attitude toward the practice improved: the participants who said they would circumcise their daughters dropped from 42% before the education to 19% after. Awareness of health complications related to FGM also increased as only 40% of the participants were aware of the childbirth complications before the education session, compared to 81% after **(Table 12).**

Table 12 Key changes percentages on knowledge and attitudes observed before and after the intervention

Question	Before 'yes' (%)	After (%)
Would circumcise daughter	42	19
Aware FGM causes childbirth complications	40	81
FGM can cause infection or diseases	49	85
FGM is illegal in many countries	38	79

4.3.1 Changes in Knowledge Regarding FGM Following the Health Education Session

This section presents the results of McNemar's test, used to evaluate whether changes in participants' responses before and after the health education intervention were statistically significant. McNemar's test is appropriate for comparing paired nominal (yes\no) data from the same individuals at two time points.

In this research, two knowledge-based variables were analyzed using McNemar's test. These questions assessed whether participants believed FGM could cause infection, and whether it could lead to delivery-related complications. The analysis revealed statistically significant improvements in both knowledge related questions, after the intervention: The proportion of the participants who believe FGM can cause infection increased significantly P= 0.000. In the other hand, awareness that FGM can lead to delivery complications also improved, P= 0.000 **(Table13)**.

Table 13 Changes in Knowledge Regarding FGM".

Question tested	Pre "Yes"	Post "Yes"	McNemar P-value
FGM can cause infection	1\41	22\41	**<0.001**
FGM can cause delivery complications	1\41	38\41	**<0.001**

4.3.4. Focus on Male Participants

This chi-square test was conducted to explore gender-based differences in attitudes and knowledge toward FGM. The result showed that male and female participants did not differ significantly in whether they considered FGM as harmful (p=.850). A significant association was observed between gender and the belief that FGM affects women's sexual pleasure (p= .001), with female more likely acknowledge the negative impact, meanly with the type 3 FGM. Differences in perceptions regarding FGM influence on marriageability were also statistically significant (p= .048), with more males believing that circumcision improves a girl's chance of marriage.

Interestingly, while analyzing for the willingness to circumcise their daughters was not significant (p=.064), the likelihood ratio was (p=.015), indicating the importance of the further exploration of the gender differences **(Table14).**

Table 14 Gender based differences in FGM knowledge and attitudes.

Variable Compared	**Significant Difference**	**P-value**
Belief that FGM is harmful	No	0.850
Willingness to circumcise daughter	No	0.064 (Pearson), 0.015 (LR)
Belief that FGM affects sexual pleasure	Yes	**0.001**
Belief that FGM improves marriage chances	Yes	**0.048**

5. DISCUSSION

The findings of the study contribute essential insights into the knowledge, attitudes and practices related to female genital mutilation (FGM) in IDP camps in Garowe, Somalia - a setting where strong cultural beliefs and limited access to accurate information sustains the practice. This study is among the first of its kind to explore changes in FGM perceptions following a focused health education session in this vulnerable community especially within post conflict country characterized by systemic gaps in public health infrastructure.

This study aimed to explore both baseline understanding and potential shifts in the knowledge, attitudes, and practices related to female genital mutilation among men and women in the camp, while evaluating sociodemographic factors influencing these beliefs. The pre intervention findings revealed that although basic awareness of the FGM types was universal, deeper understanding of health complications and legal frameworks was limited and support for the continuation particularly for the "Sunni" type remained widespread. Post-intervention results showed significant improvements in knowledge and a measurable shift in attitudes. The following section discusses these findings and their implications.

Only 44.9% of the participants considered FGM a harmful traditional practice, while 39.4% believed its harmfulness depended on the type. This dual perception is comparable to findings of a community-based cross-sectional study conducted in Ethiopia Oromia region. It found that while FGM was widespread, many women were unaware of its health risks, and some less severe forms of FGM were more socially accepted for them due to cultural and religious beliefs [56]. In the current study, 66.4% of participants supported the continuation of FGM in its Sunni form. This aligns with a study in Sudan where support for "milder" forms persisted due to religious interpretations and social acceptance [57]. Similarly, 70.2% agreed with the continuation of FGM in the future, reinforcing findings from Nigeria where intergenerational transmission of beliefs continued even among educated families. Another qualitative study conducted among Ethiopian communities in Nairobi highlighted that FGM is often justified as a way to control female sexuality and maintain social acceptance. It also noted that some milder form of FGM are tolerated because they are perceived as religiously or culturally sanctioned, which mirrors the dual perception of harm depending on the type of FGM [58]. However, a study conducted in 2021 in Kenya found that despite health education,

misconceptions persist about the safety of milder forms of FGM, with some communities still accepting these practices due to deep-rooted cultural beliefs and social pressure, leading to continued FGM even after awareness programs [59].

Education played a crucial role in shaping participants' views. The study found a significant relationship between educational level and attitudes toward FGM. Participants with university education were more likely to recognize FGM as harmful (p= 0.001). Similarly, a report titled "The power of education to end FGM 2022" by UNICEF supported the link between increased education and opposition to FGM. The report highlighted that opposition to FGM is highest among girls and women with more education, and that this opposition increased substantially as the educational level rose [60]. Employment status also influenced attitude. Healthcare workers (67.9%) and skilled workers (57.4%) were significantly more likely to view FGM as harmful compared to housewives (4.2%) and unskilled workers. These findings support the notion that access to formal training and health information empowers individuals to question and resist harmful traditional practices. The current study revealed that skilled and healthcare workers were more opposed to FGM, with 67.9% of the healthcare workers reporting it as harmful. This confirms previous research from Egypt [61], where healthcare professionals demonstrated greater awareness of FGM related health risks but still showed complex attitudes influenced by cultural and social factors . In contrast, no significant differences were observed between male and female participants in terms of whether they believed FGM is harmful (p= 0.850), although females were more likely to recognize the impact on sexual health (p=0.001). This aligns with literature indicating that women, as direct subjects of FGM, may have greater awareness of its physiological effects but still may support the practice due to social pressure [1]. The educational session had a significant impact on participants' knowledge and attitudes. McNemar test showed a significant increase in awareness that FGM can lead to infections (rising from 49% to 85%) and awareness of delivery complications (increasing from 40% to 81%), with both changes reaching statistically significant. These findings align with the results of a community-based intervention in Kenya that showed health education doubled awareness of FGM's health consequences within weeks. Post- education, 75.6% of the participants reported a change in attitudes and now opposed the practice. Additionally, 65.9% said they will take action to discourage FGM, and 70.7% felt more confident speaking about the issue.

These results are in line with similar intervention in Sierra Leone where post – session confidence in discussing FGM increased from 52% to 78%. Moreover, support for circumcising daughters decreased from 42% to 19%. This is consistent with behavior change observed in a study in Burkina Faso, where attitude shifts were recorded months after an educational campaign. While willingness to circumcise daughters decreased from 42% to 19%, a gendered analysis revealed that males were more likely to believe FGM improves a girl's marriageability a perception less commonly held by females. This supports findings from patriarchal societies where men's opinion significantly influences the decision to perform FGM, despite often being less informed about it is health consequences [62]. Moreover, a genuine proportion of participants, 56.5% acknowledged that social pressure influenced their decisions regarding FGM, and 75.2% recognized the role of religious leaders in shaping community opinions. These results underscore the critical importance of involving religious leaders and community influencers in anti-FGM interventions to effectively shift social norms[63].

6. STRENGTHS AND LIMITATIONS

6.1. Strengths

This research examines the public health issues of female genital mutilation among internally displaced persons in Garowe, Somalia. It aims to explore the knowledge, attitudes, and practice of FGM, as well as evaluating the effectiveness of the health education intervention. The findings are meant to contribute as evidence to support the policymakers, health practitioners, and community leaders in designing culturally sensitive strategies to reduce and eliminate the practice.

One of the main strengths of this research is its originality and contextual relevance. FGM remains widespread in Somalia, yet there is a lack of data specific to displaced communities, who are often overlooked in health statistics. The study was also successful because of its strong community engagement approach. Many participants had low literacy, so the researcher conducted the surveys one-on-one to ensure the participants understood all the

questions. This not only improved the accuracy of the data collected but also built the participants' trust and comfort when discussing this highly sensitive topic.

Moreover, the study used a pre- and post-intervention design, comparing pre-intervention and post-intervention groups. This allowed the researcher to measure the impact of the health education sessions on the knowledge and attitude of the participants. The study was captured the short-term effect of community-based health promotion, including its potential to shift deeply rooted beliefs. The inclusion of male participants – who often play a key role in FGM-related decision making - further strengthened the scope and relevance of the study.

6.2. Limitations and Challenges

Lack of financial support was a major limitation in this study. The research was entirely self-funded, which restricted access to necessary resources such as transportation, venue rentals for the presentation, and logistical support. This placed a financial burden on the researcher and limited the scale of the study.

Personal safety risks also affected the research process. Conducting fieldwork in IDP camps within a fragile security context exposed the researcher to significant dangers. Travel to some areas was delayed or canceled due to safety concerns, which impacted on the timeline and consistency of data collection.

Snowball sampling was used instead of random sampling, which limits the representativeness of the sample. While this approach was necessary due to the sensitive nature of FGM and the difficulty of accessing participants in the camps, it may have led to selection bias, as participants referred others with similar backgrounds or beliefs.

Community resistance and expectations posed additional challenges. Some individuals were reluctant to participate in the study due to the cultural sensitivity of the topic. Others expected material compensation in return for their participation, and many declined to give consent or withdrew before completing the questionnaire, which made reaching the target sample size more difficult.

Gender restrictions affected data collection logistics. Due to cultural norms in the study area, the data collection team had to consist exclusively of female interviewers. This limited the availability of trained personnel and caused delays in organizing and conducting interviews.

Recall bias was present in participant responses. Some participants struggled to remember past experiences or provide accurate information, particularly regarding family history or prior knowledge of FGM. This may have affected the reliability of certain data.

Social desirability bias may have influenced participants' answers, especially after the health education session. Participants might have provided responses they believed were acceptable or expected rather than sharing their genuine beliefs or intentions.

Short-term impact assessment is another limitation. The study measured changes in knowledge and attitudes immediately after the intervention but did not assess long-term behavioral changes or whether participants eventually abandoned the practice of FGM.

Despite these challenges, the study was successfully conducted and provides valuable insights into FGM practices and the potential of health education in humanitarian settings. The limitations highlighted here also offer guidance for improving future research in similar contexts.

7. CONCLUSION AND RECOMMENDATIONS

7.1. Conclusion

Conclusion

This study examined the knowledge, attitudes, and self-reported practices related to FGM, among residents of IDP camps in Garowe, Somalia - a population deeply affected by displacement, limited access to education and healthcare, rooted cultural traditions. FGM remains an ongoing health and human rights concern with widespread misconceptions and support rooted in social, religious, and gender dynamics. Through a targeted, culturally sensitive health education intervention, the study demonstrated that community-based awarenesses can influence the people’s perceptions of FGM. The participants showed improvement in recognizing the health risks associated with the practice, including childbirth

complication and infections along with other shifts toward opposing the practice. These outcomes reflect the potential of educational efforts to eliminate harmful norms and empower individuals. One of the important insights from the study is the role of education and occupation in shaping attitudes. Participants with higher education levels and those working in healthcare or skilled sector were more likely to reject the practice of FGM and acknowledge it as harmful. This finding highlights the importance of including FGM education in general literacy, job training, and professional development programs for the whole population.

The research also revealed critical gender differences in knowledge and belief systems. While overall attitudes did not significantly differ between men and women, women were more aware of FGM's impact on sexual health, whereas men were more likely to view it as linked to social expectations such as marriageability. These findings suggest the importance of designing gender sensitive approaches that engage both men and women in open discussions, particularly to correct false beliefs that link FGM to culture or religion.

Despite the intervention's success in increasing knowledge and decreasing support for FGM, some participants remained supportive of continuing the practice in less severe forms. This highlights the deep cultural attachment to FGM and underscores the need for ongoing educational efforts rather than one-time sessions.

Legal awareness also emerged as a concern, with many participants uncertain about the legality of FGM or unaware that laws prohibit it elsewhere. This underscores the necessity of improving law enforcement and integrating legal education into health programs as this helps raise awareness that FGM is a serious global issue, not just a local tradition.

While limited by non-random sampling and a localized focus on IDP camps, the study provides valuable insights into the effectiveness of education-based interventions and the complex socio-cultural factors that sustain the practice. The positive changes observed in knowledge, confidence, and willingness to act against FGM demonstrate that progress is possible even in high prevalence settings.

This study highlights the importance of health education as a transformative tool in the fight against FGM. To accelerate progress, future effort should focus on inclusive, community-led approaches involving religious leaders, elders, youth, and men supported by strong laws, policies, and healthcare systems.

7.2. Recommendations

1. Health education interventions should be scaled up across IDP camps and other high-prevalence communities in Somalia. These sessions should be regular, culturally sensitive, and tailored to the needs of different demographic groups, especially women, youth, and those with limited education.
2. Educational campaigns should involve trained local health workers and community educators, who can deliver consistent and trusted information about the physical, psychological, and social harm of FGM, challenges and misconceptions.
3. Religious and community leaders should be engaged in awareness efforts, and those who hold inaccurate beliefs about FGM should be provided with targeted education and support to ensure their messaging aligns with health and human rights principles. Their involvement is essential to shifting community norms.
4. Men and boys should be included in education programs, as they play a significant role in family decision-making and in reinforcing or challenging social norms related to FGM.
5. Anti-FGM education should be integrated into school curricula, youth programs, and reproductive health services, to ensure early and sustained exposure to accurate information among both girls and boys.
6. Follow-up and refresher educational sessions should be implemented to reinforce initial learning and sustain attitude change, as a single session may not be sufficient to shift deeply rooted beliefs and practices and monitor the changes.
7. Educational content should include legal literacy, informing communities that FGM is illegal in many countries and emphasizing the legal consequences and human rights violations involved.
8. Law enforcement mechanisms need to be strengthened to ensure compliance with existing FGM legislation and to reinforce the legal and protective framework against the practice.
9. Support should be provided for FGM survivors, Psychosocial support and post FGM care services should be expanded to address the long-term physical and emotional consequences of the practice for affected women and girls.
10. Further studies are needed to explore the long-term impact of repeated health education on actual behavior change, and to adapt intervention models to diverse cultural and geographic contexts within Somalia.

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9. APPENDIXES

Appendix 1. Consent Form

Informed Consent Form

Title of Study: HEALTH PROMOTION FOR FEMALE GENITAL MUTILATION AMONG MALE AND FEMALE IN SOMALIA: A INVERVENTION STUDY

Researcher: Fatma Warsame
Contact Information: warsamafatma@gmail.com

Introduction:
You are being invited to participate in a research study that aims to assess knowledge and attitudes towards Female Genital Mutilation (FGM) and the impact of health education on these factors. Before deciding whether or not to participate, it is important for you to understand the purpose of the study, the procedures involved, potential risks and benefits, and your rights as a participant. Please take the time to carefully read the following information.

Purpose of the Study:
The purpose of this study is to evaluate the effectiveness of health education in improving knowledge and attitudes towards FGM. By collecting data on participants' pre- and post-education knowledge and attitudes, we aim to assess the impact of the health education intervention.

Procedures:
If you agree to participate in this study, you will be asked to:

Provide demographic information such as your age, gender, education level, and any background or experience with FGM.
Complete a pre-education questionnaire that assesses your current knowledge and attitudes towards FGM.
Attend a health education presentation on FGM, which will last approximately 30 minutes.
After a period of time, complete a post-education questionnaire to assess any changes in your knowledge and attitudes towards FGM as a result of the health education intervention.

Confidentiality:
All information collected during this study will be kept strictly confidential. Your personal identifying information will be separated from the data and stored in a secure location. Only the research team will have access to this information. The data collected will be analyzed and reported in aggregate form, ensuring that individual participants cannot be identified.

Voluntary Participation and Right to Withdraw:
Participation in this study is entirely voluntary. You have the right to withdraw from the study at any time, without providing a reason, and without any negative consequences.

Your decision to participate or withdraw will not affect any current or future relationship with the research team or the organization they are affiliated with.

Benefits:

By participating in this study, you contribute to the understanding of the impact of health education on knowledge and attitudes towards FGM. The findings may help improve future educational interventions and efforts to combat FGM.

Consent:

I have read and understood the information provided above. I voluntarily agree to participate in this study. I understand that my participation involves completing questionnaires and attending a health education presentation. I am aware that I have the right to withdraw from the study at any time without penalty or consequence. I understand that my personal information will be kept confidential and that the data collected will be used for research purposes only.

Participant's Signature: _____
Date: _____

Researcher's Signature: _____
Date: _____

Appendix 2. questionnaire before the health education

BEFORE HEALTH EDUCATION QUESTIONNAIRE

Baaritaanka ka hor kulanka wacyigelinta caafimaadka

---

1. Consent and Demographic Profile

1. Oggolaansho iyo Xogta Demografikada

1. Do you agree to participate in this study?
Ma ogolaatay inaad ka qayb qaadato daraasaddan?

- Yes → Haa
- No → Maya

2. Phone number
Nambarka taleefanka

3. Age
Da'daada

4. Gender
Jinsiyaddaada

- Female → Dhedig
- Male → Lab

5. Education level
Heerka waxbarasho

- Cannot read and write → Ma aqrin karo ama ma qori karo
- Can read and write (basics) → Wax yar baan aqriyaa/qoraa
- Can read and write without formal education → Aqriyaa/qoraa la'aanteed waxbarasho
- Completed primary education → Dugsiga hoose oo dhameeyay

- Completed grade 9 and above → Fasalka 9aad iyo wixii ka sareeya
- University level → Jaamacad

6. Employment Status

Xaaladda shaqada

- Skilled worker → Shaqaale xirfad leh
- Unskilled worker → Shaqaale aan xirfad lahayn
- Student → Arday
- Not working / Housewife → Guri-joog / Hooyo
- Healthcare worker → Shaqaale caafimaad

7. Income status

Dakhliga bil kasta

- Less than 350 dollars → Ka yar $350
- More than 350 dollars → Ka badan $350
- More than 500 dollars → Ka badan $500

---

2. Knowledge of FGM

2. Aqoonta ku saabsan Gudniinka Fircooniga ah (FGM)

8. Do you know that FGM is divided into two types: Sunni and Pharaonic?

Ma ogtahay in FGM uu leeyahay laba nooc: Sunni iyo Pharaonic?

- Yes → Haa
- No → Maya

9. Do you think FGM affects women's sexual pleasure?

Ma rumeysan tahay in gudniinka uu saameeyo dareenka galmada ee dumarka?

- Yes, Pharaonic does → Haa, Pharaonic baa yareeya
- Yes, Sunni does → Haa, Sunni baa yareeya

- Both types do → Labaduba way yareeyaan
- Neither type does → Midkoodna ma yareeyo
- Other → Jawaab kale

10. Do you know that FGM can contribute to HIV/AIDS transmission?
Ma ogtahay in FGM uu sababi karo gudbinta HIV/AIDS?

- Yes → Haa
- No → Maya

11. Are you aware that FGM may cause delivery complications?
Ma ogtahay in FGM uu sababi karo dhibaatooyin dhalmada ah?

- Yes → Haa
- No → Maya

12. Which type of FGM causes scar formation?
Nooca gudniinka keena nabaro daa'in ah?

- Only Pharaonic → Kaliya Pharaonic
- Only Sunni → Kaliya Sunni
- Both → Labaduba
- None → Midkoodna

13. Do you know FGM is a harmful traditional practice?
Ma ogtahay in FGM uu yahay dhaqan waxyeello leh?

- Yes → Haa
- No → Maya

14. Do you know FGM is forbidden in most countries?
Ma ogtahay in FGM uu ka mamnuuc yahay inta badan wadamada?

- Yes → Haa
- No → Maya

3. Attitudes Toward FGM

3. Aragtiyada ku saabsan FGM

15. Do you think FGM protects virginity?

Ma rumeysan tahay in FGM uu ilaalinayo bikranimada?

- Yes, only Sunni → Haa, kaliya Sunni
- Yes, only Pharaonic → Haa, kaliya Pharaonic
- Yes, both → Haa, labaduba
- No → Maya

16. Do you think uncircumcised girls are faithful or clean?

Ma rumeysan tahay in hablaha aan la gudin ay nadiif yihiin ama daacad yihiin?

- Yes → Haa
- No → Maya

17. Do you think uncircumcised girls have stronger sexual desire?

Ma rumeysan tahay in hablaha aan la gudin ay leeyihiin dareen galmo badan?

- Yes → Haa
- No → Maya

18. Will you circumcise your daughter?

Haddii aad leedahay gabar, ma gudin lahayd?

- Yes, I would choose Sunni → Haa, Sunni baan dooran lahaa
- Yes, I would choose Pharaonic → Haa, Pharaonic baan dooran lahaa
- No → Maya

19. Should FGM continue in your community?

Ma aaminsan tahay in FGM uu sii socdo bulshadaada?

- Yes, only Pharaonic → Haa, kaliya Pharaonic

- Yes, only Sunni → Haa, kaliya Sunni
- Yes, both → Haa, labaduba
- No → Maya

---

4. Consequences of FGM

4. Cawaaqibta FGM

20. Has your under-5 daughter been circumcised?

Ma gudday gabadhaada ka yar 5 sano?

- Yes → Haa
- No → Maya

21. Does social pressure influence your decision on FGM?

Ma saameeyaa cadaadiska bulshada go'aankaaga ku saabsan FGM?

- Yes → Haa
- No → Maya

22. Can religious leaders influence your opinion on FGM?

Ma aaminsantahay in culimada diintu ay beddeli karaan fikradaada ku saabsan FGM?

- Yes → Haa
- No → Maya

23. Do you agree with FGM continuation in the future?

Ma taageersan tahay in FGM la sii wado mustaqbalka?

- Yes, Sunni only → Haa, kaliya Sunni
- Yes, Pharaonic only → Haa, kaliya Pharaonic
- No → Maya

24. Does FGM affect victims' mental health?

Ma ogtahay in FGM uu saameeyo caafimaadka maskaxda dhibbanayaasha?

- Only Pharaonic victims → Kaliya Pharaonic
- Only Sunni victims → Kaliya Sunni
- Both → Labaduba
- No → Maya

25. Can FGM cause infections (e.g., tetanus)?

Ma ogtahay in FGM uu keeni karo caabuq sida teetanaska?

- Pharaonic only → Kaliya Pharaonic
- Sunni only → Kaliya Sunni
- Both → Labaduba
- No → Maya

26. Do you think uncircumcised girls will face marriage problems?

Ma rumeysan tahay in gabdhaha aan la gudin ay guur ku dhibtoon doonaan?

- High chance → Fursad sare
- Low chance → Fursad hoose

27. Can FGM cause long-term health complications?

Ma ogtahay in FGM uu keeni karo dhibaatooyin caafimaad oo waqti dheer ah?

- Only Pharaonic victims → Kaliya Pharaonic
- Only Sunni victims → Kaliya Sunni
- Both → Labaduba
- No → Maya

Appendix 3. Questionnaire after the health education

AFTER HEALTH EDUCATION QUESTIONNAIRE

Baaritaanka ka dib kulanka wacyigelinta caafimaadka

---

1. Demographic Information

1. Xogta Demografikada

1. Age
Da'daada

2. Gender
Jinsigaaga

- Male → Lab
- Female → Dhedig

3. Marital status
Xaaladda guurka

- Single → Keligiis
- Married → Guursaday
- Divorced → La furay
- Widowed → Gaboobay

4. Are you circumcised? (Answer if you are a female)
Ma lagugu guday? (Ku jawaab haddii aad tahay dhedig)

- Yes → Haa
- No → Maya

---

2. Knowledge and Understanding

2. Aqoonta iyo Fahamka

5. Before the session, how much did you know about FGM?
Intii ka horreysay kulanka, intee ayaad ka ogayd FGM?

- Not at all → Maba aqoon
- Too little → Wax yar baa iga ogaa

- A lot → Si fiican baan u ogaa

6. After the session, how much do you feel you know about FGM?
Ka dib kulanka, intee ayaad dareentay inaad ka taqaanid FGM?

- I fully understand → Waan fahmay
- I'm not sure yet → Wali ma hubo
- I understand a little more → Waxaan wax yar ka fahmay

---

3. Attitudes Toward FGM

3. Aragtiyada ku saabsan FGM

7. Do you think FGM is just a tradition?
Ma rumeysan tahay in FGM ay tahay dhaqan keliya?

- Yes → Haa
- No → Maya

8. Do you think FGM has no health benefits?
Ma rumeysan tahay in FGM aysan lahayn wax faa'iido caafimaad ah?

- Yes → Haa
- No → Maya

9. Do you think FGM goes against human rights?
Ma rumeysan tahay in FGM ay lid ku tahay xuquuqda aadanaha?

- Yes → Haa
- No → Maya

10. Do you think FGM is required by religion?
Ma rumeysan tahay in FGM ay diintu farayso?

- Yes → Haa
- No → Maya

11. Do you think FGM can affect sexual health?
Ma rumeysan tahay in FGM ay saameyn ku leedahay caafimaadka galmada?

- Yes → Haa
- No → Maya

12. Do you think FGM is common in Somalia?
Ma rumeysan tahay in FGM ay caadi ka tahay Soomaaliya?

- Yes → Haa
- No → Maya

13. Do you think FGM can cause serious health problems?
Ma rumeysan tahay in FGM ay keento dhibaatooyin caafimaad oo daran?

- Yes → Haa
- No → Maya

14. Do you think FGM can make childbirth harder?
Ma rumeysan tahay in FGM ay adkeyso dhalmada?

- Yes → Haa
- No → Maya

15. Do you think FGM is illegal in many countries?
Ma ogtahay in FGM ay sharci darro ka tahay dalal badan?

- Yes → Haa
- No → Maya

16. Do you think FGM can contribute to infection or communicable diseases?
Ma ogtahay in FGM ay keeni karto cudurro faafa ama infekshanno?

- Yes → Haa
- No → Maya

---

4. Impact of the Session

4. Saameynta Kulanka Wacyigelinta

17. Did this session change how you feel about FGM?
Kulankaan ma beddelay dareenkaaga ku aaddan FGM?

- I think FGM should stop completely → Waxaan rabaa in la joojiyo gebi ahaan
- I think FGM should be reduced or changed → Waxaan rabaa in la beddelo ama la yareeyo
- My opinion has not changed → Fikradaydu ma is beddelin
- I think the “Sunni” type is acceptable → Nooca "Sunni" waan aqbalayaa

18. After the session, do you now believe FGM should stop in your community?
Ka dib kulanka, ma aaminsan tahay in FGM laga joojiyo bulshadaada hadda?

- Yes → Haa
- No → Maya

19. Has your attitude toward FGM changed?
Ma beddeshay fikraddaadii hore ee FGM?

- Yes, my opinion is opposite now → Haa, waxaan qabaa fikir ka duwan hadda
- No, my opinion is the same → Maya, weli waxaan qabaa isla fikirkii
- I am still undecided → Wali ma go'aansan

20. Do you feel more confident to talk about FGM in your community now?
Ma dareentay kalsooni dheeraad ah inaad kaga hadasho FGM bulshadaada?

- Yes → Haa
- No → Maya

21. Will you take steps to discourage FGM in your community?
Ma qorsheynaysaa inaad tallaabo qaaddo si aad uga hortagto FGM bulshadaada?

- Yes → Haa
- No → Maya

Information of the researcher:

Appendix 4. Ethical Approval of Ankara Yildirim Beyazit University

ANKARA YILDIRIM BEYAZIT UNIVERSITY (AYBU)
HEATH SCIENCE ETHICS COMMITTEE
RESEARCH PROJECT APPROVAL DOCUMENT

Halk Sağ.

Ankara Yıldırım Beyazıt University Faculty/Institute__Public Health___Department global health and public policy acadimotion/student _Fatma Mohamed Kulmie Warsame_ research titled HEALTH PROMOTION FOR FEMALE GENITAL MUTILATION AMONG MALE AND FEMALE IN SOMALIA: A INVERVENTION STUDY was reviwed (*This section must be filled by the applicant)*

Approved. [X]

To be resubmitted. [ ]

Rejected. [ ]

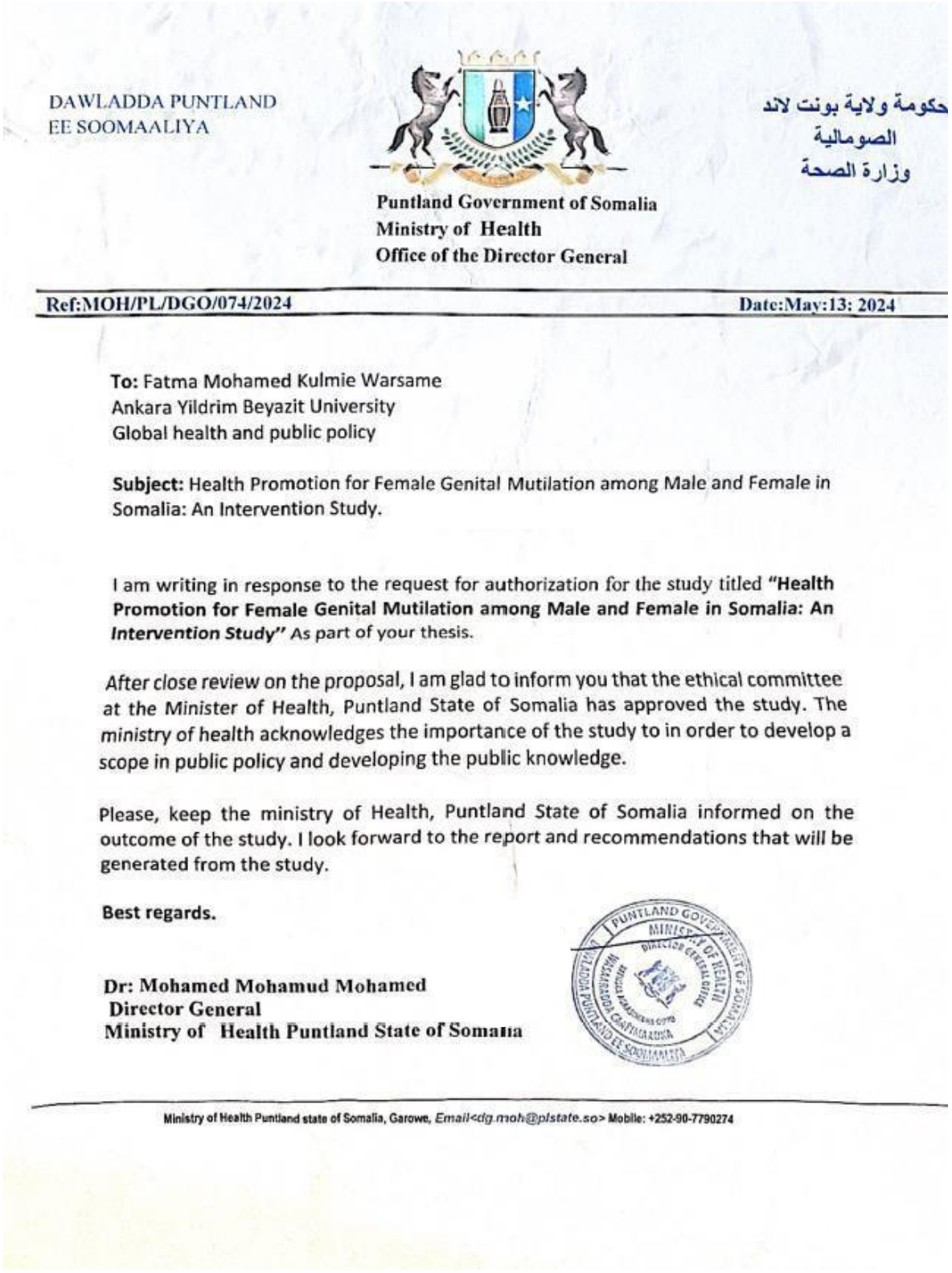
AYBU HEALTH SCIENCE ETHICS COMMITTEE DECISION (This section will be filled by the committee)	
Research code (Year – Research order number)	2023-313
The date the application reached to the Ethics Committee	09.06.2023
Ethics Committee decision meeting date and decision number	14.06.2023/06-313
Place	Ankara Yildirim Beyazit University, Esenboga Kulliyesi, Ankara-Turkey
Participants	Members who signed the form attended the meeting.

THE CHAIRMAN AND THE MEMBERS OF THE COMMITTEE:

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

9

Appendix 5. Permissions From the ministry of health somalia



DAWLADDA PUNTLAND
EE SOOMAALIYA

حكومة ولاية بونت لاند
الصومالية
وزارة الصحة

Puntland Government of Somalia
Ministry of Health
Office of the Director General

Ref:MOH/PL/DGO/074/2024 **Date:May:13: 2024**

To: Fatma Mohamed Kulmie Warsame
Ankara Yildrim Beyazit University
Global health and public policy

Subject: Health Promotion for Female Genital Mutilation among Male and Female in Somalia: An Intervention Study.

I am writing in response to the request for authorization for the study titled **"Health Promotion for Female Genital Mutilation among Male and Female in Somalia: An *Intervention Study"*** As part of your thesis.

After close review on the proposal, I am glad to inform you that the ethical committee at the Minister of Health, Puntland State of Somalia has approved the study. The ministry of health acknowledges the importance of the study to in order to develop a scope in public policy and developing the public knowledge.

Please, keep the ministry of Health, Puntland State of Somalia informed on the outcome of the study. I look forward to the report and recommendations that will be generated from the study.

Best regards.

Dr: Mohamed Mohamud Mohamed
Director General
Ministry of Health Puntland State of Somalia

Ministry of Health Puntland state of Somalia, Garowe, *Email<dg.moh@plstate.so>* Mobile: +252-90-7790274

Permission to conduct the study in the IDP's in Garowe city, Somalia.

CURRICULUM VITAE

REGISTERED NURSE

Name: Fatma Warsame

Nationality: Somalia.

Place of birth:

Date of birth:

Marital status: Married.

Residential address: Turkey, Ankara

Fluent languages:

Email:

EDUCATION

-Yildirim Beyazit University, Turkey.

Master student of global health and public policies. 2022 – candidate.

-MAHSA University, Malaysia.

Bachelor science (Horns) in **Nursing** 2015 Oct to 2019 Nov.

EXPERIENCE

2020-2021

Malab Health Insurance [**Administrative coordinator**] Arlington, TX.
Online Part time

2021-2023

Hamidiye international schools [School Nurse] Ankara, Turkey.

LICENCES AND CERTIFICATES

- ✓ **Saudi commission for health specialties registration certificate**

  April 2023**.** (Active).

- ✓ **Saudi commission for health specialties.**
- ✓ **Licensed practical Nurse, Nursing Board of Malaysia.** (Active).
- ✓ **Registration certificate licensing, The ministry of health and human resources,** Somalia. (Active).
- ✓ **IELTS** – International English Language Testing System certificate.
- ✓ **Basic occupational First aider license**, CPR.
- ✓ "Academy of Safety and Emergency Care SDN BHD"
- ✓ **Health Informatics Specialization**- Johns Hopkins University.
- ✓ **Copping therapy** – Taj health awareness.

PUBLICATIONS

Book Chapters:

- Understanding of Female Genital Mutilation. Yaz Yayınevi, Akademik Perspektiften Halk Sağlığı [Academic Perspective on Public Health] 2025.

Conference Presentations:

- Knowledge, Attitudes and Practices Regarding Antimicrobial Resistance and prescribing Among Physicians in Hospitals in Garowe, Somalia: Cultural and Public Health Perspectives. Presented at the Uluslararası Yaşam Kalitesi Konferansı (International Quality of Life Conference), published by Holistence Publications 2024.