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Fowzio Jama

“A true doctor? That does not exist.” Implications of War on the Physical and Mental Health of Somali Elders in Mogadishu, Somalia: A Mixed Methods Study

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2022

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An abstract of
A thesis submitted to the Faculty of the
Rollins School of Public Health of Emory University
in partial fulfillment of the requirements for the degree of
Master of Public Health
in Global Health
2022

Abstract

"A true doctor? That does not exist." Implications of War on the Physical and Mental Health of Somali Elders in Mogadishu, Somalia: A Mixed Methods Study

By Fowzio S. Jama

Background:

The rising number of elderly populations in low-middle income countries and humanitarian settings is partly due to the growing number of aging populations globally. In humanitarian settings, this population faces mobility limitations and threats to their safety and security. There is limited information on the health-related challenges experienced by the elderly during humanitarian crises. This research specifically seeks to understand the health-related challenges faced by the elderly in Mogadishu, Somalia, where internal conflict has existed since the collapse of government in 1991. Participants reported the implications of civil war on their physical and mental health, conditions that are exacerbated by the lack of accessible and affordable healthcare services.

Methods:

This is a mixed-methods cross-sectional study design. A survey was distributed to adults aged 50+ in the Abdulaziz district between January 9th – January 12, 2021. Descriptive statistics were used to document prevalence of disease, socio-demographic factors, and social support. In-depth interviews were conducted with 16 of the survey respondents during the months of June and July of 2021.

Findings:

Survey study participants reported a high burden of disease with 84% having at least one chronic condition. Health conditions reported include hypertension (24%), gastritis (23%), diabetes (17%), and enteric infections (12%). Almost one-fourth (53%) of participants lacked functional and emotional support. Emergent themes from qualitative results indicted challenges of managing conditions due to limited proficiency in medical knowledge and beliefs embedded in cultural traditions, such as the assumption that antibiotics treat every illness, and that sickness is a form of atonement. Participants shared how the war led to chronic grief, social isolation, and poor sleep and appetites. Participants also reported feelings of anxiety related to the inability to afford medications and scarcity of affordable quality care. Coping mechanisms include accessing more affordable pharmacy-based care and reliance on strangers instead of family in crisis situations.

Interpretation:

The elderly population in Somalia suffers from a high prevalence of non-communicable disease and poor mental health. The elderly population has significant unmet healthcare needs and limited access to social support. This work highlights the gap in the care of elderly in a conflict setting.

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Acknowledgements

If people come together, they can even mend a crack in the sky.
Somali Proverb

All thanks to the Almighty. I want to also thank my incredible thesis chair Dr. Bethany Caruso and Hagarla Institute. I graciously thank my family and loved ones; this would not be possible without you all. Lastly, I want to honor and thank my Somali elders who sought and understood the importance of liberation and taught me that to be without knowledge is to be without light. This work is dedicated to you all.

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Chapter 1: Introduction

1.1 Background

This introduction will provide the pertinent context necessary to understand the mental health condition of Somali elders in Mogadishu, Somalia. To comprehend the effects of conflict on the mental health of elders, it is critical to review the political, social, religious, and economic conditions of Somalia. Somalia is located in East Africa and can be referred to as the Horn of Africa[1]. Somalis are unified by language, culture and are predominantly Sunni Muslims[2]. Nearly 16 million Somalis live in the nation and 85% of the population consists of ethnic Somalis[3]. The World Bank estimates that the elder population accounts for 2.9% of the overall population[4]. Current reports estimate that 19% of the total population live in displacement camps[5]. Factors contributing to displacement include environmental challenges due to climate change, poor resource distribution, political instability, and tribalism[6].

The ongoing 30-year civil war has impaired progress towards improving mental health in Somalia. In response, the United States utilized its military force to ensure access to humanitarian aid but failed its mission to maintain peace in December 1992[7]. The collapse of the Somali state includes the disintegration of the national healthcare system. The nation's healthcare system is still ill-equipped, severely underfunded, and unregulated as seen in its poor response to the COVID-19 pandemic[8].

Political

In 1991, former dictator Siad Barre absconded, and the nation fell into chaos and active civil war[9]. Following the breakdown of the federal government, many civilians

were displaced and competing factions of warlords blocked access to humanitarian aid [7]. The current President Mohamed Abdullahi Mohamed "Farmajo" was elected in 2017 and announced a 2-year extension to his original 4-year presidential term and maintains his power[10]. The political crisis in Somalia is further compounded by the conflict with the extremist group Al-Shabab, an Al-Qaeda-affiliate[10]. As a result of the government's instability, healthcare laws and regulations are not given priority. Access to primary care and mental health services are compromised and largely controlled by the private sector[11].

Social

The social framework in Somalia is guided by clan structure. Clans hold both social and political power and socio-political identity is based on paternal lineage[2]. There are four major clans: Darod, Hawiye, Dir, and Rahanweyn, these clans dominate politically, socially, and economically. Somalis rely on their clan for functional and emotional support and political alliance. Despite the support and protection afforded by the clan system, it is an unfamiliar concept to Somalis to discuss mental health concerns outside the clan [12]. Somalis may also be denied treatment based on clan affiliation and healthcare workers must avoid discussions about clan identities to maintain neutrality[6].

Religious Context

Within the Somali context, religion plays a comprehensive role in everyday life. Daily activities such as school and work are scheduled around the five daily Islamic prayers. Although there is no formal clergy in Somalia, *wadaads* are men that serve as religious authorities and provide services throughout the country[13]. A common belief is that mental health disorders can be treated through the use of religious text and God's

will[14]. While others believe that the source of mental health illness can be attributed to witchcraft and unholy forces[2].

1.2 Problem Statement

The history of Somalia is compounded by the onset of a civil war that has afflicted trauma to this population. According to the World Health Organization[15], "Somalia has the distinction of having the highest prevalence of mental illness in the world."[14]. Yet, there is no comprehensive epidemiological data on the status of mental health disorders in Somalia due to limited research capacity and poor collection of routine data in health centers[6]. Further, there is little to no data on the mental health status of older persons in the country. Cultural and language boundaries make it difficult to obtain accurate prevalence rates of the psychological condition of indigenous Somalis.

1.3 Purpose

The purpose of this research is to document health conditions among female and male Somali elders aged 50+ residing in the Abdulaziz district in Mogadishu, Somalia. This study also seeks to understand the effect of conflict on the mental health of Somali elders in Mogadishu, Somalia.

Significance

In order to improve the mental health of Somali elders, it is necessary to evaluate their current mental health status and their perceptions, attitudes, and beliefs towards their health as well as healthcare services. Findings from this research may assist with providing data on the mental health conditions of Somali elders in Mogadishu, Somalia. This research can guide development of public health interventions for elder-specific care in the future.

The lack of access to healthcare services is an important barrier to seeking out healthcare for mental health disorders. However, there are additional barriers older persons experience when deciding to utilize health services. Barriers can include perception of health quality, affordability, and accessibility. It is critical to assess the effect of ongoing conflict on the mental health conditions which may affect elders' health-seeking behavior.

Chapter 2: Literature Review

2.1 Introduction

The literature review will summarize existing literature on the discussion of aging in the global context and aging in conflict settings within lower and middle-income countries (LMICS). This review will also address the effects of conflict on mental health, with a focus on Somalis. Some articles included are from the nineties and early 2000s due to limited research conducted on the Somali population. The literature review also consists of quantitative and qualitative data to support the aims and objectives of this research study.

2.2 Definition of Aging

The physiological basis of aging is understood "as the accumulation of diverse deleterious changes occurring in cells and tissues with advancing age that are responsible for the increased risk of disease and death"[16]. Through a multi-country effort, the World Health Organization defines the term "elderly" or "older persons" as individuals aged 65 and older[17]. While the United Nations categorizes elderly age into three distinct categories: Young-old 60 – 74 years, old-old, 75 – 84, and oldest-old>85 years of age[18]. Arguably, these categories and definitions of the term "elderly" are arbitrary and often connected to notions of retirement and pensions. These concepts are rooted in the western understanding of age and fail to provide a global perspective on the term.

2.3 Global Aging

The number of elderly persons is expected to reach 2.1 billion by 2050 due to the increase in life expectancies and decline in fertility rates[19]. The increased life expectancies are a result of improved sanitation and hygiene, which assist in the prevention, treatment, and control of infectious diseases [20]. Advancements in medicine

and technology have also worked to increase life expectancies [21]. Additionally, agriculture production and food transportation have improved nutrition [20]. Modern advancements have led to a demographic transition that has shifted the fertility and mortality rates on a global scale.

The European continent was the first region to experience the demographic transition, which shifted to lower rates of fertility and longer lifespans followed by the United States[18]. The demographic transition in Asia, Latin America, and the Caribbean occurred later, while the African continent is still in the early stages of the shift[18].

It is also important to note that the increase in life expectancy do not equate to an increase in the quality of life for elderly populations. The increase in life expectancies has led to the increase in the prevalence of chronic non-communicable diseases such as diabetes, hypertension, cardiovascular diseases, and cancers [22]. Roughly 23% of the global burden of death and illness affects individuals aged 60 and older[19]. The long-term disease burden may also affect the quality of life for elders. Chronic non-communicable diseases can lead to disabilities that may reduce the individuals' capacity to care for themselves. Individuals with disabilities also have a greater risk of developing chronic diseases than non-disabled individuals, which may be attributable to poverty, poor overall health, and psychosocial distress related to disability status[23]. Globally, 14% of elders require some form of assistance with activities of daily living (ADLs) such as personal hygiene, mobility, and meal preparation[24]. Furthermore, with the world's aging population, there are numerous societal and economic implications. Some

implications include an increase in healthcare costs, a substantial burden on family structures and government systems[25].

2.4 Mental Health and Older Populations

Older populations have higher rates of disability when compared to the general population[19] Loss of functionality may lead to an increase in dependency and a higher risk of experiencing discrimination and violence[26]. Furthermore, older persons with disabilities tend to be excluded in not only social groups but also by humanitarian agencies, further adding to their vulnerability[27]. According to the WHO, 20% of adults aged 60 and over suffer from some form of mental or neurological disorders[28]. Common mental health disorders include dementia, depression, anxiety, and substance abuse[28].

2.5 Challenges of Older Populations in LMICS

According to the United Nations, two-thirds of the world's elderly live in low-middle income countries (LMICs)[18]. This presents a unique challenge because older populations generally make little to no economic contribution while also requiring greater needs than younger populations[25]. The small contribution by older persons can be due to functional limitations and their need for assistance with daily tasks[29]. Limited functionality may also prevent older persons from maintaining employment. Therefore, the burden of care and costs of elders' needs shifts to governmental agencies, civil societies, families, and communities[30].

The overall burden of caring for an aging population in high-income countries (HICs) is met by programs including social security and government pensions. Unfortunately, in LMCIs, the aggregate levels of income and wealth are lower[25].

Generally, LMICs do not have the resources or national infrastructure to meet the financial demands of caring for an aging population. LMICs must also contend with competing obligations and often struggle to balance the response to the existing burden of infectious diseases and the growing prevalence of chronic diseases[31].

2.6 Challenges of Older Populations in Conflict Settings

Older populations in conflict settings face particular threats that are often neglected by emergency response. HelpAge International, a non-governmental organization focused on the wellbeing and inclusion of older populations reports that during an internal or external conflict, communities may flee and leave many older individuals behind without any functional support [32]. Elders may not be able to escape or migrate due to a lack of mobility or physical health. Older populations with chronic conditions with little to no assistance can experience difficulties with obtaining food and water [33]. Since older persons are more likely to have chronic health conditions, their needs might go beyond the capacity of emergency health services during conflict [34]. Additionally, during periods of violence, elders are vulnerable to malnutrition, as many non-governmental organizations prioritize children and women and neglect elders[32].

Inadequate diet and nutrition can compromise overall health and lead to malnutrition. During conflicts or emergencies, food vulnerabilities are increased by inaccessibility of food distribution centers, difficulty with food preparations, and elder tendency to share food rations with other family members [27]. For example, in 2005, HelpAge International found that 29% of older persons in West Darfur, Sudan were not targeted for food assistance and more than 60% could not access aid due to mobility challenges [35].

Older populations are more likely to experience exclusion and abuse during a humanitarian crisis. As a result of conflict, older persons may experience loss of family members, displacement, poor health, and become socially excluded from communities due to their health needs which can exacerbate psychological distress[33].

2.7 Effects of Conflict on Mental Health

Ongoing conflict can negatively impact economic development which may lead to increased anxiety regarding financial security[36]. The effect of conflict on the mental health of older persons is connected to the length of exposure to war trauma. Prolonged exposure to violence can lead to the development of depression, anxiety, and insomnia[28]. Furthermore, decades of conflict can also contribute to a lack of infrastructure, technology, and improved health systems.

Studies conducted in conflict settings have found that there is a high prevalence of mental health disorders such as post-traumatic stress disorder, anxiety, and depression among adults [36]. For example, a study conducted in Afghanistan following the 2001 conflict found that 48% of participants experienced PTSD and 68% of the sample reported depression symptoms [36]. According to the UN, at least one in five people residing in conflict areas experience a mental health disorder [37]. The conflict in the Balkans also found that Bosnian individuals exposed to the violence were more likely to develop psychiatric disorders including depression and PTSD [38]. The Balkans conflict resulted in an increase in poor mental health status among individuals aged 65 years and older [38]. Finally, in the case of Somalia, a UNICEF study found evidence of mental health consequences as a result of prolonged exposure to violence [39], which is further exacerbated by the lack of mental health services.

Older persons are more vulnerable to mental distress during armed conflict. A study conducted among older persons in Ukraine found high levels of psychological stress among older persons exposed to conflict in comparison to older persons in low-conflict areas [26]. The study used the Kessler K6 Psychological Distress Scale, a tool used to assess risk for serious mental health illness in a target population [40]. A study conducted in Israel found that adults 65 years and older who had experienced missile attacks reported higher rates of severe stress in comparison to those who were not exposed [41]. Although older persons are at risk for developing mental health disorders after exposure to trauma, some studies found that older persons have demonstrated resilience after exposure to violence [42]. Unfortunately, there is little data on the mental health of older persons in conflict situations [26].

2.8 Mental Health Conditions among Somalis

Since the collapse of the Somali government in 1991, the people of Somalia have been subjected to severe levels of armed conflict and displacement for nearly three decades. According to the UN Refugee Agency, 1.1 million Somalis are living as internally displaced persons (IDPs) within Somalia's borders, specifically in the Banaadir region [6]. Additionally, environmental challenges due to prolonged droughts and flooding in conjunction with social discrimination based on tribal differences have exacerbated health conditions for Somali elders. Concerning mental health, there is minimal data regarding services available in Somalia. The Habeeb Mental Health Foundation is the only Somali-run public provider for mental health services in Mogadishu[37]. Additionally, there is only one trained psychiatrist per five million Somalis [43]. One in three Somalis experience at least one form of a mental health illness[14]. The overall lack

of security, repeated exposure to violence, and displacement work to create a sense of communal distress, which increases the risk of mental health disorders [15].

Due to the lack of treatment and limited mental health services, there is an increase in cruelty and discrimination towards individuals with mental health disorders. Inhumane practices such as chaining a mental health patient are considered medically and socially acceptable in Somalia [14]. Mumin and Rhodes also report that in the case of Somaliland, family members will utilize the prison system to immobilize their kin who are unable to receive mental health services [43]. A study in 2014 at the Borama Prison in Somalia found that 72% of inmates were mental health patients with no criminal records [44]. In 2010, the WHO found that at least 90% of mental health had experienced chaining at least once in their lifetime[15].

In addition to the mental health trauma associated with chaining, patients may also suffer from physical trauma to their feet and legs [15]. The WHO also reports that patients are subjected to chaining during acute and chronic mental health crises [15]. Some of the reasons for this phenomenon include ensuring protection from the afflicted individual, keeping the person indoors, and ensuring the person does not harm themselves [15].

The mental health conditions of Somali elders within the country have not been documented. As a result of security concerns, challenging political systems, and natural disasters, research projects have not been of interest to the unstable Somali government. There are no national or local agencies for research, therefore, much of the research is produced by foreign agencies and international non-governmental organizations [15]. The

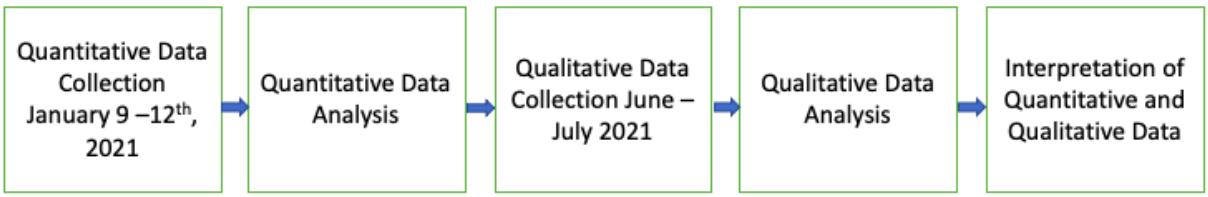
current literature does not address the mental and physical health of Somali elders in Mogadishu, Somalia. This research hopes to bridge this gap in the literature by focusing on the mental health status of Somali elders in conflict-ridden Somalia.

Chapter 3: Methods

3.1 Study Design

The primary purpose of this cross-sectional explanatory mixed-methods study was to analyze the health conditions and needs of Somali elders in displacement camps in Mogadishu, Somalia. The study also addresses barriers to quality geriatric care in the Abdulaziz district in Mogadishu, Somalia. Specifically, this study employed quantitative data collection in the form of surveys and clinical fieldwork conducted during a district-wide health fair on January 9-12th, 2021 to measure the elder residents' health status, health behaviors, and the current health and social needs. The quantitative data informed the subsequent collection of qualitative data that took place during June and July of 2021. The qualitative data was collected through individual in-depth interviews to understand the elders' experience with accessing healthcare services and their perception of health and illness.

Figure 1. Explanatory Sequential Mixed-Methods Design



3.2 Setting

This research took place in Somalia, located in east Africa, which is characterized by its coastline that borders the Red Sea and the Indian Ocean. The current population is estimated to be 16 million and over half of the population is under the age of 25 [45]. Somalia is a homogenous nation, indigenous Somalis share one language, religion, and

culture that is traced to one ancestor [46]. The Republic of Somalia was formed in 1960 after declaring independence from Italy[46].

In 1991, Somali President Siad Barre was forced into exile and overthrown by the military regime [47]. A fragile government formed in the East African nation as the struggle for control continues between political groups, terrorist organizations, and foreign forces. Tribalism and inter-clan violence further exacerbate the unstable political landscape. The lack of state protection, food insecurities, and humanitarian crisis has devasted this population [48]. Vulnerable populations such as women, children, and the elderly are subject to clan violence [48]. Additionally, the Human Rights Watch reports that armed forces demolished informal settlements and infrastructure created by humanitarian agencies [49]. Somalia also experiences reoccurring climate-related disasters that increase food insecurity, access to clean water, and economic loss [50]. Unfortunately, most of the violence within the country takes place in the capital city of Mogadishu. It is difficult for humanitarian agencies to provide social and health services as a result of targeted attacks on aid workers[48].

This research took place in the Abdulaziz district, specifically at a health fair run by Hagarla Institute. The Abdulaziz district is in the southeastern region of Mogadishu[51]. Due to its proximity to Old Town Mogadishu, the district is neglected by humanitarian agencies. Mogadishu is a geopolitical warzone that is often under attack by internal forces and foreign military interventions. Residents of the Abdulaziz district are unable to access medical services due to financial constraints and limited government investment in healthcare infrastructure [52]. Therefore, Hagarla Institute, a Somali-run

organization that serves communities located in conflict areas, conducted a four-day health fair to provide clinical services to elderly residents between January 9th and 12th. The institute feared that this community was suffering from research fatigue and wanted to offer clinical services in exchange for completing the survey. Elders were split into two groups (male, female) and were seen by volunteer healthcare professionals such as doctors and nurses who conducted health checks in the private rooms at Hagarla Institute. The health check consisted of blood pressure readings, A1C tests for diabetic elders, skin, dental, and vision checks. After completing the health checks, participants were instructed to return to the main room to begin working on the surveys.

3.3 Population and Sample

The primary participants in this study were Somali elders, aged 50+, residing within the Abdulaziz district in Mogadishu, Somalia at the time of the study. Participants residing outside of the Abdulaziz district were excluded from the survey, adults aged 50+ who were unable to consent, prisoners, pregnant women, and cognitively impaired individuals were excluded from the survey as well. Survey and clinical data came from both male and female participants that attended the health fair hosted by the Hagarla Institute.

All adults 50 years and older who completed the health checks and spoke Somali or English were eligible to participate. Out of the 300 health fair attendees, 233 participants filled out the survey. Out of the 233 participants, 227 participants submitted completed surveys, and 20 elders were invited to participate and complete qualitative interviews ranging from 10 - 30 minutes.

3.4 Quantitative Procedures

Surveys

The purpose of the survey was to measure the elder residents' health status, health behaviors, and current health and social needs. The surveys gathered information on respondents' demographic data such as name, age, gender, neighborhood, marital status, the prevalence of disease, socioeconomic factors, and status of social support. Survey questions were developed by senior Hagarla staff members Dr. Deqo Mohamed and Dr. Awale Abdullahi. Surveys were designed to gather information quickly on a large number of participants at a rare event. Due to the instability of the country, locals are discouraged from gathering in large numbers due to the threat of terrorism.

After obtaining informed oral consent, the community health volunteers distributed the surveys. The surveys were administered in both Somali and English, literate individuals filled out the survey without any assistance from Hagarla staff. Illiterate participants were assisted by Hagarla's community health volunteers that worked as readers and documented participants' multiple choice and fill-in answers. Participants preferred to answer survey questions in Somali, which were translated into English and back into Somali to ensure proper understanding and analysis. After completing the surveys, participants were provided a copy of their medical tests and were given instructions for follow-ups with local clinics and hospitals as needed. At the conclusion of the health fair, senior Hagarla staff imported the raw numerical and text data collected into an Excel spreadsheet and shared the file with the research team at Emory University.

Data Management and Quantitative Analysis

Survey data was imported into Excel and shared via Google Drive among the research team. Emory researchers cleaned the data using SAS Analytic Software and conducted the descriptive statistics to summarize the data collected.

3.5 Qualitative Procedures

In-depth interviews

Following the data analysis of the quantitative data, the study determined the need for in-depth interviews to further understand the burden of mental health disorders among this population and the effects of chronic exposure to trauma. The study used snowball sampling to recruit research participants due to the sensitive nature of the interview subject matter. One participant was asked to identify another, and this method led to a total of 16 participants were interviewed, (50% male, 50% female) for 10-30 minutes. The length of interviews was dependent on the health condition of each participant and what they wanted to share.

In-depth interviews provide adequate privacy and confidentiality while also allowing PI Fowzio Jama to collect data on diverse personal experiences and health conditions. The PI created an interview guide to orient questions throughout the interview session. The guide started with a broad set of questions that were more open-ended and moved towards more specific questions. Due to the COVID-19 pandemic, the interviews were conducted over WhatsApp video, Zoom, and audio. The PI began the interviews by introducing themselves and the two-team members from Hagarla Institute, Dr. Zakarie Mohamud and Nurse Jamila Moalim. The interviews took place in a private room rented by Hagarla Institute which is located in the Abdulaziz District. The room provided the necessary privacy to discuss sensitive and confidential topics.

To begin the interview, the PI described the purpose of the study as an in-depth health needs assessment, with an emphasis on mental health concerns. The PI also informed participants that they may exit the interview at any time. Once oral consent was obtained, the PI began the interview, and the audio was recorded on the PI's computer via Zoom.

The interview questions worked to build rapport between the PI and participants. Questions covered four themes in addition to probes to facilitate further discussion. The themes explored are healthcare experiences, current health needs, mental health status, and recommendations for improving healthcare in the country.

Data Management and Qualitative Analysis

In-depth interview recordings were transcribed, translated verbatim, and de-identified for confidentiality. Audio from the qualitative interviews was downloaded to a password-protected laptop and PI at Emory University transcribed each recording verbatim and then translated the transcript from each interview from Somali into English. After initial translation, each de-identified transcript was sent to each team member. Team members re-listened to audio and checked transcripts for content accuracy.

The PI Fowzio Jama at Emory University and the Hagarla team members conducted thematic analysis of the data to identify common themes and patterns through data coding. From the interviews, the team identified common themes, and the PI developed codes and definitions based on the data. The codebook was created through a collaborative effort between the research teams at Hagarla Institute and Emory University. During the coding process, the PI, Nurse Jamila Moalim, and Dr. Saria Hassan created memos identifying patterns and themes. Once the codebook was solidified, each

of the 16 transcripts were coded line by line by at least three team members to ensure a consensus.

The research team utilized the comment function to highlight and code sections of the transcripts. Microsoft Word automatically uses different colors for each coder. The project chose to use Microsoft Office to ensure accessibility to all team members in Somalia. Data was stored on the Emory University OneDrive.

3.6 Ethics

The quantitative surveys were administered by Hagarla Institute with the approval of Simad University. The study submitted a protocol to Emory University's Institutional Review Board before the qualitative portion of the study, which involved Emory PI Fowzio Jama. On May 19th, 2021, the eIRB reviewed the submission and determined that the proposed activity is not research as defined by DHHS and FDA regulations. Instead, the project was categorized as a public health practice, which is understood "as the collection and analysis of identifiable health data by a public health authority for the purpose of protecting the health of a particular community."[53]. However, the study received local IRB approval from Simad University on May 21st, 2019, in Mogadishu, Somalia.

Participant Compensation

Participants did not receive economic compensation for their participation in the study and this was disclosed to all participants before their enrollment in the study. The participants received clinical services in exchange for completing the survey. Informants did not receive any form of compensation for participating in the in-depth interviews.

Chapter 4: Results

The results section is structured into two parts. The first section describes the quantitative data such as the demographic characteristics of survey participants. The second section also describes qualitative results from in-depth interviews to illustrate the impact of war on mental and physical health outcomes. This section will also examine participants experience with healthcare providers in the clinical setting and current coping mechanisms such as religious care.

Quantitative Results

Study Population

A total of 233 surveys were filled out by study participants, however, only 227 (97.4%) individuals submitted complete surveys. Table 1 describes participant demographic information from the health fair conducted by Hagarla Institute in January 2021. There were six surveys excluded from the results in table 1, due to incomplete data. The completely filled survey results illustrated in table 1 show that over half of the participants identified as female (62.6%) and the rest of the sample identified as male (37.4%). In this sample, 88 participants (38.8%) indicated living in internal displacement camps (IDPs). In terms of marital status, 196 (86.3%) participants reported being married and only 28 (12.3%) participants indicated that they were divorced at the time of the Hagarla health fair.

Table 1. Health Fair Survey Participant Demographic Information

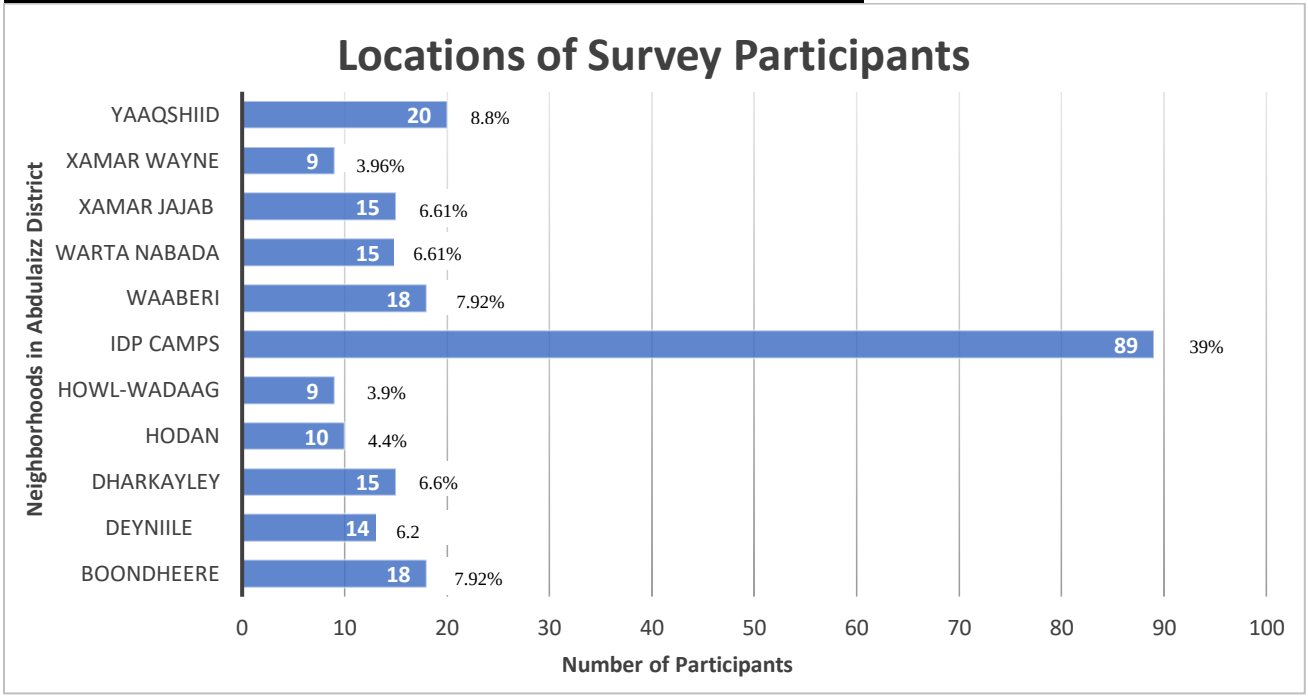
Survey Item	Level	Total N(%) = 227 (100)	Study Cohorts	
			Neighborhoods N(%) = 139 (61.2)	Displacement Camps N(%) = 88 (38.8)
Gender	Male	85 (37.4)	45 (32.4)	40 (45.5)
	Female	142 (62.6)	94 (67.6)	48 (54.5)
Marital Status	Married	196 (86.3)	114 (82.0)	82 (93.2)

Survey Item	Level	Total N(%) = 227 (100)	Study Cohorts	
			Neighborhoods N(%) = 139 (61.2)	Displacement Camps N(%) = 88 (38.8)
	Divorced	28 (12.3)	23 (16.5)	5 (5.7)
	Single	3 (1.3)	2 (1.4)	1 (1.1)
Age	Mean	65.32	66.68	63.14

Table 1. Survey participants demographic information collected during Hagarla health fair include gender selection, age, and marital status. Out of the 233 surveys received, only 227 contained complete data and the remaining 6 surveys are excluded from the table.

Within the district, there are eleven neighborhoods that are reflected in figure 2. Out of the eleven districts, Yaaqshiid (20, 8.8%), Waaberi (18, 7.9%), and Boondheere (18, 7.9%) are the most common indicated neighborhoods among the survey participants following the internal displacement camps (89, 39%).

Figure 2. Distribution of participants' residence in the eleven neighborhoods located within the Abdulaiziz district within the Mogadishu city limit (N=227)



The survey participants reported health status related to any medical concerns. The participants indicated health difficulties such as hypertension (55, 24%), gastritis (52, 23%), frequent headaches (39, 17%), diabetes (36, 16%), enteric infections (27, 12%), and joint pain (18, 8%) as reflected in figure 3.

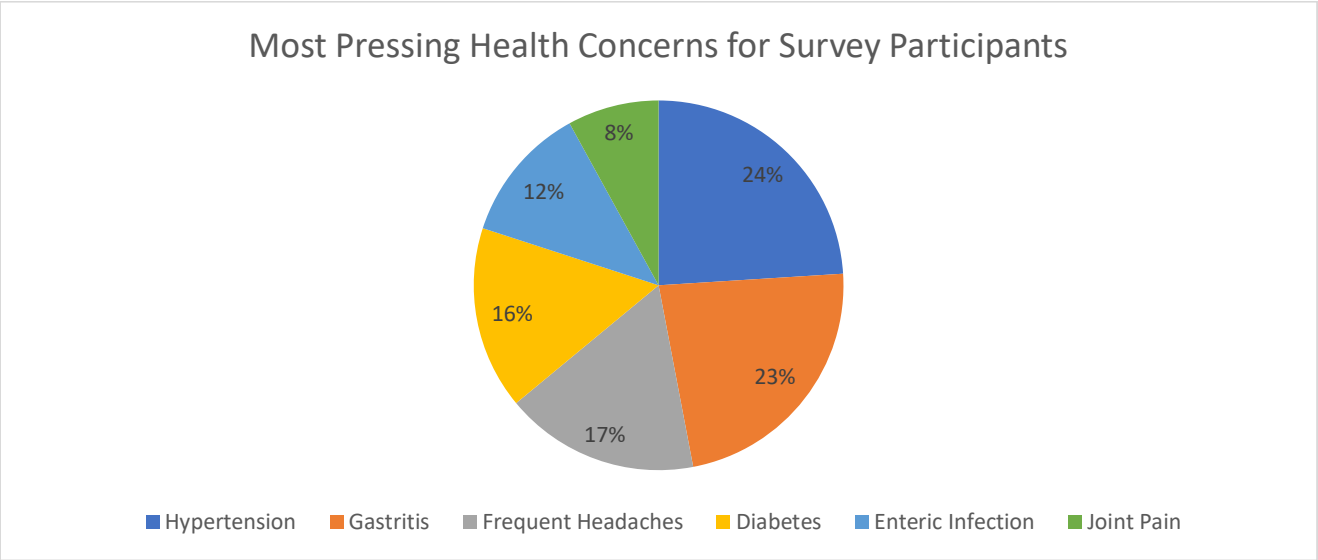


Figure 3. This graph illustrates the most pressing health concerns identified by survey participants as of January 2021 (N=227).

Additional health concerns reported by the survey participants include lack of access to a healthcare provider (127; 55.9%), memory loss (129; 56.8%), and concerns related to dental health (86; 37.9%). Unfortunately, survey results do not specify the types of memory loss or dental concerns reported by participants. The questions stated in table 2 are directly from the survey and were only given yes/no answers as possible responses.

Table 2. Additional Health Concerns Reported by Survey Participants

Survey Item	Level	**Total** N(%) = 227 (100)
Access to Healthcare Provider	Yes	100 (44.1)
	No	127 (55.9)
Experience with Memory Loss	Yes	129 (56.8)
	No	98 (43.2)
Dental Concerns	Yes	86 (37.9)
	No	141 (62.1)

Table 2. Additional health concerns reported by survey participant in a closed questions format that only allowed participants to select either yes or no.

Participants selected and ranked their greatest needs, revealing needs for healthcare (162, 71.3%), healthcare needs include primary care, specialty care, and access to prescription medication. Following healthcare, financial assistance was the second-highest need by 55 (24%) participants. Survey participants did not indicate if financial needs were associated with healthcare services or activities of daily living. The third selected need is medical devices (4, 0.02%), this includes wheelchairs, canes, and commodes. The two additional needs are listed as access to clean water and nutrition

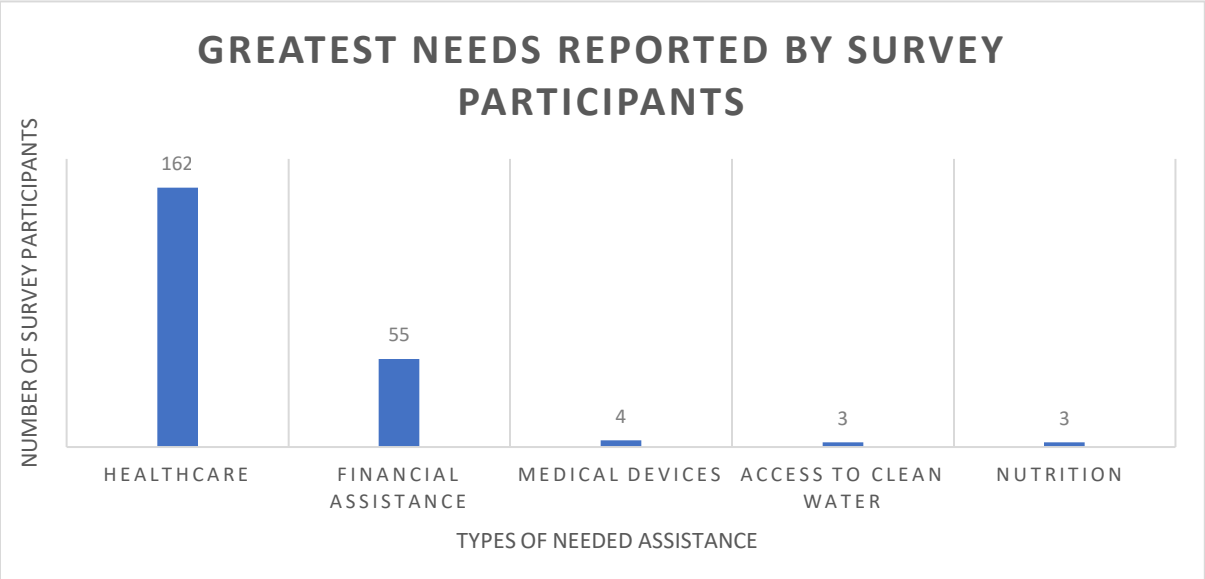


Figure 4. Bar graph presenting the primary needs reported by survey participants (N=227).

Qualitative Results

The in-depth interviews gained information from 16 total participants (8 female and 8 male). Participants represented various occupations, family dynamics, and educational levels. The majority of participants are internally displaced persons and revealed chronic exposure to violence, poverty, and poor health. Out of the 16 interviewees, 13 (81.2%) participants indicated living in displacement camps within the Abdulaiziz district, while only 3 (18.7%) indicated living in formal neighborhoods. This section examines the consequences of living in conflict and its impact on mental health.

Consequences of Conflict

The data reveal evidence of mental health issues and concerns among the participants. Participants attributed their current mental health status to the 30-year internal conflict in Somalia. All participants interviewed experienced adversity such as family member loss, economic hardship, and poor-quality care. This section illustrates the experiences participants shared from their memories of the initial conflict in 1991 when the government collapsed, as well as their experiences during governmental transitions over the last three decades.

Loss of Family Members

Participants reported the loss of family members due to the armed conflict, the absence of state protection, and the lack of healthcare infrastructure, specifically emergency services. One female participant reported that she lost her husband to the

conflict a few years after the miscarriage of her twins. When asked about her feelings towards that loss she said, "*he died…we were married for a long time but that is God's will."* Another female participant reported the loss of her husband who was killed in the first few months of the conflict in 1991, "*he died almost 30 years ago, I raised the kids fatherless"* (Elder 7, F). Two more female participants shared that they also lost their husbands to the conflict within the first 1-2 years.

Apart from spousal loss, interview participants shared the loss of their children during times of conflict. One participant recounted the loss of her child to gunfire between rival militia, *"our boy was killed by 5 shots"* (Elder 2, F) and became visibly overwhelmed with emotion as she reflected on the loss of her child. The killing of her son received no justice, and despite the decades that have passed since his death, the loss was still fresh. Some participants reported loss of children due to the indirect costs of war. For example, one participant lost all eight of her children saying, *"they all died young"* (Elder 11, F) and attributing the loss of her children to the war and the wave of poverty and economic instability it produced. Without financial assistance, she was unable to provide adequate food and clean water for her children. She believes each of her children died due to malnutrition. Finally, a participant shared her loss and fears, "*there is mental pain, my daughter's four-year old girl died, and I think of her. I worry about the kids I have now, how will I provide for them when I don't have anything?"* (Elder 6, F).

Additional loss of family members was reported due to migration, either nearby to countries such as Ethiopia or Kenya, or countries in Europe. One participant shared a story of their loved ones who attempted to migrate to Europe, specifically by utilizing a

small fishing boat that was not built to withstand the ocean currents. The participant continued to describe the extreme measures the family took due to the war, "*my son migrated and was killed along the way*" (Elder 16, M) this occurred 2 years and 10 months after the main breadwinner of the family suffered the same fate.

Economic Hardship

Another consequence of the war reported by participants was severe economic hardship that further exacerbated the dire situation. During the collapse of the government in 1991, participants reported being in their prime years, many graduating from higher education and entering the workforce for the first time. Unfortunately, participants suffered job loss due to the impact of the internal conflict. For example, one participant reported working as a fisherman along the Mogadishu coastline and had his right to work restricted by Islamic militia; he believes he was set up by Islamic extremists and was labeled a terrorist, sharing "*they imprisoned me for four years, they confused me with Al-Shabab"* (Elder 4, M). During the four years of his imprisonment, his family suffered tremendous economic hardship, and his oldest son became a fisherman at the age of 16. Another participant reported that he worked as a salesman for the government's auto shops: *"I used to work, pay for my own things. But now I can't"* (Elder 3, M). He expressed pride in being financially independent, however, adding "*I have not worked in over 31 years,"* and this inability to provide for himself impacts his mental health and self-confidence which is rooted in his ability to provide. Similarly, another participant lost his job as a server in the capital once the fighting broke out. The inability to provide for his family encouraged him to migrate to Saudi Arabia and find work as a house manager: "*I*

went to Saudi with borrowed money. I wanted to go and work for my children. There was war in this country" (Elder 16, M). He continued by describing the harsh environment in Saudi Arabia, *"It was not an easy job. You start work early* [in the] *morning at 9 AM and you take a break only when eating, once you finish work. If you are seen sitting, you will be asked why you are sitting, and you will be ordered to move."* He remained in the position for 11 years to provide for the family despite the abusive nature of his supervisors. When asked what caused him to stop working, he simply replied "*old age,"* with tears in his eyes (Elder 16, M).

All participants reported mental health concerns due to the failed economy that focused on fueling the war. Specifically, one participant stated, *"what brings those feelings is economic insecurity, anxiety comes from not having enough. When your oldest is missing, you have to provide"* (Elder 4, M), *indicating* that the ongoing conflict does not allow for participants to entertain notions of retirement or state-sponsored programs such as social security or Medicare. Additionally, another participant shared that the lack of financial support contributed to her anxiety, "*the children worry me the most. I am alone in raising them and I don't know how much longer I can provide for them. The pain is a lot and I fight through it but I am getting older"* (Elder 8, F).

Mental Health among Selected Population

Terminology

In the Somali culture, the concept of anxiety is often described as a fire as stated by one participant who said, "*I worry, and my brain feels like it is on fire and feverish."* (Elder 7, F). She continued by saying, "*I have bad dreams, I get nervous. I feel tired and my*

whole brain feels tangled." Additionally, the term *shock* is also used to describe episodes of anxiety. Similarly, the Somali culture uses the term *noise* to describe episodes of frenzied emotions. When asked about barriers to sleep and overall calmness, one participant said, *"that noise, I swear to God it is that noise*," (Elder 1, M) that prevents him from being calm.

Experiences of Anxiety

Participants also reported poor sleep due to anxious behavior. As seen in the case of one participant who said, "*sometimes I will experience shock at night. I live in a rental property; I will hear shouting noises and ask who is in the house? Who has come now?"* (Elder 5, F). One participant was asked to name what disturbs her sleep and she said, "*I worry about cash and providing for the kids"* (Elder 10, F). Worrying for the sake of the children in their care was a common theme among the participants. One participant said, "*I worry about them all the time. When are they going to eat? What is going to happen tomorrow? It is all in God's hands, but I still worry. Where will their next meal come from?"* (Elder 8, F). This sense of anxiety towards the future of the children was also expressed by another, "*I stress 24/7, about the government. I also stress about my son who just finished his primary education. Where will he go now for university?"* (Elder 15, M)

Experiences of Heightened Emotions

Study participants continued to use the term *shock* to describe episodes of uncontrollable emotions. When asked about barriers to sleep and overall calmness, one participant said, *"that noise, I swear to God it is that noise*," (Elder 1, M) that prevents him from being calm. He further describes his recurring symptoms of heightened negative emotions, "*your head begins to spin. It returns to me constantly. For days sometimes, I*

remember them. I remember my family, the house collapsed due to a bomb. I had to get their bodies. I took them out with my hands." Another participant also reported "*I realize I sometimes talk to myself*" (Elder 14, M). When asked what he believed to be the source of his condition, he said, "*the pain,"* while pointing to his head but did not elaborate further. Throughout the interview, he was extremely reluctant to answer questions regarding mental health status. Loss of family members also contributes to experiences of shock, as stated by one participant "*it is painful when you lose someone, a brother, or someone you know loses their brother and loved one. You experience shock. When you see something like that, it makes you remember a day of bombings. When your loved ones are dead. Your brother is dead. What is left?"* (Elder 1, M).

Participants Beliefs about Mental Health

Interview participants shared the impacts that mental health has on their daily activities. They discuss how heightened emotions, paranoia, and stress effect their overall wellbeing. For example, one participant described how his poor mental health status affects his appetite, "*this morning I did not eat because of the mental pain"* (Elder 1, M). Interviewers probed and asked if the lack of appetite could also be related to financial constraints, to which he answered, "*I wouldn't eat because of that pain."* While another participant believes that his untreated physical condition will result in a coma and that fuels his anxiety, *"I fear that my blood pressure will get so high that I will enter a coma."* (Elder 4, M)

Participants also reflected on the emotional toll of living with poor mental health. One participant discussed his marital history during the interview, having married twice,

he views both marriages as his failures. "*I married two women, but after this mental pain became a lot"* (Eder 1, M). He reported to be unmarried and indicated a sense of hopelessness in seeking out another spouse. Another participant expressed the emotional stress of living with her son who has an untreated case of mental health issues, "*in the house at night we have to lock him up or he will get violent with us"* (Elder 9, F). During the interview she became emotional as she showed the pole and chains used to restrict her son, her only viable option due to her financial constraints.

Barriers to Seeking Care

Untreated Health Conditions

Participants of the study report numerous barriers to seeking care within Somalia. The national government does not provide social services that cover medical costs. Almost all of the participants had at least one untreated health condition due to financial stress and poor quality of care. Improper treatment and the absence of routine care have rendered many participants physically unable to reach hospitals and rural clinics. One participant explained the need for an in-community health system that accounts for disabilities, *"we are elders, we go and walk and get tired. I wish we didn't have to travel for care"* (Elder 15, M).

Perception of Health Systems

Participants reported medical distrust of the public and private hospitals in Somalia. When asked about the accuracy of medical doctors in Somalia, one participant said, "*their errors are substantial…the medicine they provide, I don't know if it is good or bad"* (Elder 3, M). This sentiment relates to the perception that the quality of healthcare

is equated to fate, as expressed by another participant *"it is all by chance"* (Elder 4, M). In terms of distrust, one participant described the cause for his hesitancy about the health system: "*some barriers are definitely the inconsistency of work"* (Elder 15, M). Even in the pharmaceutical industry, he explained *"no two pharmacies will give you the same medication for the same symptoms."* Another participant argued that trust is irrelevant when seeking care, *"it is not about trusting them, it is the pain, the pain forces you too"* (Elder 2, F). Unfortunately, many participants agreed that the pain of their unmet health needs narrowed their choices for care. They have learned to view trust as a privilege born out of luxury not afforded to them. Distrust in the system stems from personal experiences of receiving expired medicine and foods at the hands of non-profit organizations and the national government. A participant who was asked to help distribute food that was donated said, *"about 24 months ago, they brought food that had expired. They put it in a machine that grinded the food, washed it, and changed the date on the container. I saw it with my own eyes, I will even testify on the Day of Judgment about what I saw…they bring food that is expired and try to say it is not. So how are we supposed to get health from that?"* (Elder 15, M)

Distrust in the medical system is further fueled by the lack of government regulation and the economic burden of healthcare. The perception that medical care providers prioritize financial gain over the delivery of healthcare was a common theme among participants. A participant claimed that Somali doctors *"are not professionals, they are buyers and sellers. They just care about the market."* (Elder 15, M). Another shared, "*when you go to the doctor, all he is going to do is write some medicine on a paper and tell*

you to go get it, he just writes down some random medication, it is a business for them." (Elder 11, F) This belief of the medical system is shared by all 16 participants and highlights the gaps in the Somali healthcare infrastructure.

Participants also stated that low expectation of quality care is a common perception. Furthermore, participants noted that the absence of a referral system is another barrier to accessing care. Quality of care among this population is determined by the accessibility to prescriptions. Elders believe that a doctor's visit is incomplete or poor without a prescription for medication. Interviewers probed and asked a participant, "*do you think you need to get something in order to feel better?"* To which the participant replied, *"yes, that is what healthcare is"* (Elder 8, F). Specifically, participants have a strong preference for antibiotics, which are known as '*dryers*'. Antibiotics are readily accessible at the pharmacies and are provided without prescriptions, "*yes, you just tell them it hurts here and there, and they give you the dryers"* (Elder 8, F). Even in the case where antibiotics are not appropriate, this population believes that drug therapy is a critical aspect of quality care.

Experience with the Pharmacy

In the absence of accessible healthcare systems such as private and public hospitals, participants rely on the many pharmacies that surround the Abdulaziz district. These pharmacies are unlicensed, and no government agencies are regulating Somalia's pharmaceutical industry. For example, one participant said, "*from where we live, the pharmacy is the only source of affordable and accessible care. The pharmacy is right here in the neighborhood"* (Elder 15, M). Some elders also state that the pharmacies do not require

recent prescriptions and will provide medication based on old doctor notes. When asked why participants prefer the pharmacy over the clinical setting the answer was generally, *"because the hospital wants a lot"* (Elder 2, F). The pharmacy is also perceived to be simpler than a hospital. Pharmacies are affordable in comparison to hospitals and do not require extensive paperwork. As one participant stated, it *"is easier for me; the doctor wants a lot of money."* For comparison, one participant explained that it can cost her up to $150 US dollars to check her blood pressure at the hospital, while she can go to the pharmacy and "*pay my $1 and check it there"* (Elder 7, F).

Elders have also expressed frustrations with paying diagnostic fees that result in not receiving any medications and instead "*when I feel sick, I go to the pharmacy they check me out and give me medicine and I move on"* (Elder 4, M). The convenience and affordability of the pharmacies in the district have grown in popularity and have expanded in response to the high prices of clinical services. However, participants have shared stories of purchasing expired medication that has increased their pain and poor health conditions. This industry relies on counterfeit medications and was defined by one participant as, "*oppressive sometimes, he* [pharmacist] *just gives you something to make a profit, it is not for your wellness"* (Elder 15, M).

Competing Obligations

Another barrier to care is the existence of competing obligations faced by this population. Many of the female participants are now the primary caregivers for their families. One participant discussed how her obligations prevented her from caring for herself, *"I usually buy the medical cream for $1-$2 and use it from the pharmacy, it is hard to*

get because of the money and I raise fatherless children" (Elder 8, F). Another also experienced similar competing obligations, *"I am busy raising kids without their father, I can't afford those medicines and doctor visits. Too expensive"* (Elder 6, F). This sense of obligation was primarily observed among female participants who had adopted orphans or became guardians for their grandchildren, as seen in the case of another, who shared *"I lost two daughters and now I am responsible for their children, one girl left behind six children and the other left behind four."* Due to the scarcity of resources, participants tend to choose the needs of those in their care. This practice was evident during an interview where one participant said, *"I eat whatever is cooked at the house for the kids. I cannot afford to cook something for myself. If they make pasta or rice that is what I eat,"* (Elder 9, F) despite her type II diabetes diagnosis. It is often understood as an honorable sacrifice to forgo self-care for the chance to prolong the life of those in the elder's care. Many of the elders expressed purpose in caring for their remaining family and friends.

Coping Mechanisms

Functional Support

The inability of the country to provide services or support mechanisms for the elders forces them to depend on their extended families, families abroad, and the local community. One participant who lives with his brother said, *"my brother's kids help me, my brother's kids will help buy my prescriptions"* (Elder 1, M). Three participants depend on their eldest daughters to provide an income. It is common for the eldest daughter to become the breadwinner in the absence of a father or older brother. One participant receives most of her support from the greater community around her. Community

support is depicted as a point of pride for many elders. Forms of support are not restricted to families and local community members. One participant described how a call for help on the internet saved him thousands of dollars: *"they put it on Facebook to get you help,"* (Elder 3, M) and within a few weeks, he received enough donations to get surgery on his hip.

Religion as Coping Mechanism

Religion plays a profound role in the resilience and strength of this population. Participants utilize the Islamic holy text of the Quran as medicine in the absence of healthcare, or as a response to the failure of clinical services. For example, one participant said, *"if anything I will get someone to read the Quran on us for treatment and I usually feel better. I pray about it, I get the prayer beads"* (Elder 11, F). Other participants found peace in religion, saying, *"at the end of the day, I have a lot of problems. These are things God has written for me"* (Elder 12, M). Religion works to help elders accept their predicament as divine decree; some even believe that their pain is a form of atonement for their earthly sins. Religion allows participants to cope with their physical, emotional, and mental health by providing a framework to understand traumatic experiences such as the war and its effects on their daily lives.

Chapter 5: Discussion

This study aimed to understand the effects of ongoing conflict on the lives and health of the elderly Somali participants residing in a conflict setting. This study utilized an explanatory sequential mixed methods approach to examine the physical and mental health conditions of Somali elders aged 50+ that reside within the Abdulaziz district in Mogadishu, Somalia. The quantitative data collected from the health fair surveys worked to inform the development of the qualitative interview guide. Study participants reported experiencing a wide range of health conditions and concerns that demonstrate the implications of the civil war on their mental health. The effects of conflict on participants' physical and mental health are further exacerbated by inaccessibility to healthcare services and additional barriers to care. Study participants also shared religious coping mechanisms as a direct response to the healthcare failure of the national government.

Implications of War on Health

As a result of the war, study participants reported excessive worrying, anxious behavior, and experiences with mania. Each participant from the qualitative sample shared at least one mental health concern, which is similar to other reported studies. Specifically, participants attributed their poor mental health to chronic exposure to violence, poverty, and economic hardship. Similarly, a 2022 research study found that populations in the Tigray region of Ethiopia experienced mental health issues due to the long-term armed conflicts and financial instability in the region[54]. Additionally, Tigrayan participants reported a high burden of mental health disorders because of forced migration and internal displacement[54]. The findings of this study also align with a 2017

research project, which found high levels of poor mental health among displaced Rohingya in refugee camps[55]. However, these studies do not specifically focus on the experiences of older persons in war-torn settings as this one has.

Study participants also reported feelings of anxiety regarding the safety of their person and families in informal structures, homes, and rental properties, which has also been reported in a 2015 study in Kenya. The study found that Kenyan IDPs experienced psychological distress due to the inability to ensure their physical safety in the camps, noting that older IDPs were less equipped to handle the burden of living in informal structures[56]. Additionally, Riley and Varner (2017) found that Rohingya adults residing in camps experienced high levels of mental health distress because of the lack of security[55]. The lack of healthcare infrastructure and social services also increased levels of anxiety among this population. As seen in a 2015 qualitative study that found the burden on mental health to be highest among older IDPs in conflict settings, which was further exacerbated by poor healthcare infrastructure and the absence of government support[56].

Living in unstable home environments also contributes to excessive worrying regarding the future of the children in the care of study participants. Somali Elders also shared their fears for the future and how their grandchildren and adopted children may not survive. These concerns regarding the future of their families were also found in a 2006 study conducted in Lebanon, where older populations expressed feelings of anxiety for the displaced children in their care[33]. Stressful family dynamics can work to increase experiences of excessive worrying and anxiety.

Accessibility Concerns

Quantitative analysis from the health fair survey found the greatest need among this population to be access to healthcare services and financial assistance. The ongoing war disrupts the availability of the limited health services in Mogadishu, Somalia. The location of the Abdulaziz district is a frequent target for violence, which amplifies health consequences and decreases access to public services. The government of Somalia does not provide social programs to address medical and financial vulnerabilities related to the humanitarian crisis, participants are then pressured to depend on the private sector. Current services available to this vulnerable population include private pharmacies located within the Abdulaziz district. Interview participants utilize the pharmacy because of its accessibility and affordability. Participant dependency on pharmacies is because of the absence of quality healthcare. Furthermore, there are no state-led initiatives to address the needs of those already living with long-term healthcare needs. Similarly in Yemen, researchers Qirbi and Ismail found that the weak government system in Yemen and the lack of social programs forced populations to rely on the private sector for their healthcare needs[57]. Despite Qirbi and Ismail's findings, this research does not discuss the experience of older persons. However, the research does utilize maternal and child health as health outcome indicators[57]. The absence of health outcome indicators for older persons here reflects the greater neglect of their needs in the field of public health.

Disability as a Barrier to Care

The breakdown of healthcare as a result of war dramatically affects those with physical injuries or disabilities, particularly those that limit mobility. Participants

engaged in the qualitative research reported joint pain due to untreated gunshot wounds or side effects from surviving bomb blasts. The untreated injuries transformed into chronic disabilities that limited mobility, a challenge further compounded by the lack of state transportation, which created additional barriers to care. Mobility concerns among older persons were also reported in a Kenya study which found that older IDPs experienced greater anxiety while living in camps because of poor mobility[56]. Furthermore, HelpAge International reports that during times of war, older persons may not be able to escape due to mobility concerns and are often left behind[35].

Aging populations have significant healthcare needs that are neglected by humanitarian response. The needs of older persons in emergency settings are generally addressed in broader adult health programs[33]. Unfortunately, this approach fails to account for the specific health needs of aging populations, especially those with disability. Older persons are more likely to sustain serious injury and illness during war because of reduced mobility[33]. For example, vision and hearing disabilities may make it difficult for older populations to see and understand emergency warnings or guidelines[27]. In the case of Yemen, chronic malnutrition has been identified as the cause of many disabilities among this population, however, nutrition-related interventions in this region have only targeted children[57]. Additionally, there are few emergency response professionals with specific training to address the needs of older populations such as knowledge of assistive medical devices and drug-related concerns concerning dosage and age-related physiological changes[58].

Coping Mechanisms

The lack of access to healthcare services and social programs forced study participants to find alternative coping mechanisms. In addition to utilizing the pharmacy in lieu of primary care, study participants reported relying on religion and spiritual care practices for treatment. Spiritual care practices include the use of the Islamic text as a topical medicine. For example, participants reported having the Quran read on their bodies to alleviate chronic pain or reduce fevers. Elders also shared the use of prayer beads to help calm their anxiety and build resilience. Qualitative researchers Hasan and Mitschke (2018) found that Syrian refugees also utilized religion as a coping mechanism to develop resilience and hope during displacement and migration[59]. These religious coping mechanisms have also been found in a Ugandan study where displaced populations stated that their faith and hope in God is what helped them persevere[60]. Comparably, Parsitau (2011) found that faith in God helped build a sense of community among Kenyans in the displacement camps[61]. Furthermore, the concept of destiny was a reoccurring theme among Somali participants. Elders determined that the current state of their health and financial status was the divine will of God. Some elders alluded to the notion that their suffering was a form of atonement for their previous sins, while others viewed their circumstances as a test from the divine.

Strengths and Limitations

This pilot study collected data regarding the physical and mental health of indigenous Somali elders located within the nation. This population has not been discussed previously; current literature focuses on the health of Somalis in the diaspora. As a pilot study, the sample population is relatively small, however, based on security

concerns and hard-to-reach populations, we were unable to expand the number of study participants and despite the small sample size, we were able to record participants describing their mental health in their cultural terms outside of western terminology. Furthermore, the cross-sectional design of this study did not allow us to analyze trends over time, but this research provides data for future work on elders in war settings.

Conclusion

Implications for Public Health

This research provides new insights about older persons affected by complex humanitarian emergencies, particularly those residing in Somalia. Findings include an overview of the physical health status of Somali elders, an immediate needs assessment, and documents effects of chronic violence on the mental health of participants. This research found participants to have a heavy dependency on private pharmacies for care in the absence of primary healthcare. Unfortunately, war is not restricted to the borders of Somalia, the implications of war are complex and require additional research on older populations that generally require long-term care beyond emergency care.

As a public health emergency, there are several studies that have documented the immediate and long-term public health consequences of war[39], [62],[63]. However, these studies generally focus on women and children under the age of five[64],[65],[66],[67].

For example, a recent publication from the Lancet addresses the physical and psychological implications of war on children, specifically concerning the current war in Ukraine[68]. Researchers highlight the detrimental effects of war on children's mental

health while also discussing the scarce availability of health services[68]. Additional articles discuss the substantial morbidity and mortality among women and children in war settings and fail to mention older persons. Furthermore, the Lancet has an entire series dedicated to examining the effects of war on the health of women and children[64]. Another publication addresses the cost of combat on healthcare facilities and the consequences of interrupted care for chronic conditions[69]. Researchers Alessi and Yankiv (2022) argue that military conflict has the potential to affect care for chronic conditions such as diabetes[69]. This study illustrates how war leads to food shortages, access to clean water, and life-saving medication which further exacerbate the vulnerability of individuals with chronic conditions such as hypertension and diabetes[69]. The descriptions utilized in this study reflect the experiences of the Somali elders that suffer from untreated diabetes, food shortages, and lack of access to medication.

Closing Remarks

The impact of war on health has devasting consequences, and this study illuminates impacts on elderly populations in Somalia. The disruption of food and water supply in conjunction with poor health services has the potential to worsen chronic conditions and lead to poor emotional and mental outcomes[57]. However, existing literature, both in Somalia and beyond, primarily focuses on the experiences of women and children and largely neglects the health of older persons. The impact of war on health is long and intergenerational, therefore it is unethical to solely focus on the health of women and children under the age of 5. The insufficient research on older persons in

emergency settings renders this population expendable. Ageism is a public health emergency, one that cannot be ignored any longer. This is the first study to examine the mental and physical health of indigenous Somali elders in Mogadishu, contributing to the limited available information regarding this specific and vulnerable population. Further research is needed to document the prevalence of mental health disorders among this population.

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Appendix A: In-Depth Interview Guide in Somali

Taariikh:_____

Magaca Wareysiga_____

Waqtigu wuxuu bilaabmay: _____ Waqtiga dhamaadka:_____

Hordhac

Waad ku mahadsantahay waqtiga aad ku deeqday inaad kaga qaybqaadato daraasaddan maanta.

Magacaygu waa ----------. Aniga waxaan ahay cilmibaare -----. Waxaan rabnaa inaan wax ka barano khibradaada ku saabsan raadinta iyo helitaanka adeegyada daryeelka caafimaadka ee Soomaaliya.

Su'aalaha aan maanta ku weydiineyno waxay diiradda saari doonaan caafimaadkaaga. Waxan isku dayeynaa inaan fahanno baahiyahaaga caafimaad. Waxaan sidoo kale ku weydiin doonaa inaad sharraxdo wixii kale ee caafimaad quseeya ee aad la kulantay, oo ay ku jiraan caqabadaha caafimaadka maskaxda ama dhimirka.

Kahor intaanan bilaabin, waxaan rabaa inaan kuu xaqiijiyo in kaqeybgalka wareysigaani uu yahay mid ikhtiyaari ah, mana aha inaad ka jawaabto wixii su'aalo ah ee aadan ku qanacsanyan ama aad weydiiso inaad joojiso wareysiga waqti kasta. Hadalkeennu maanta waa mid gebi ahaanba qarsoodi ah, qof kasta oo aan ku xirnayn mashruuca cilmi barista ma maqli doono duubista ama ma ogaan doono waxa aan maanta ka wada hadalnay. Waxaan runtii rabnaa inaad sax ah uhadasho oo aad la wadaagto wixii fikir iyo dareen ah ee aad qabto.

Waxaan jeclaan lahayn inaan duubno wada hadalkeena si aan u hubino inaysa naseegin mid ka mid ah faallooyinkaaga. Ma haystaa ogolaanshahaaga inaan duubo? [PRESS RECORD]

Wax su'aalo ah ma qabta? [allow for questions]. Haddi aysan jirin su'aalo kale, aan bilowno!

A. Hordhac /Dib u eegid (5 daqiiqo)

Qaybta hore ee su'aalahan, waxaan jeclaaan lahaa inaan wax ku quseeya kuweydiiyo.

1. Caafimaadkaagu sidee yahay?
   A. Maxaa dhib caafimaad, hadduuba jiro, ayaad qabtaa?
   B. Sii dabagal: Maxay yihiin calaamadaha xanuunkaagu?

C. Sii dabagal: Xaggee xanuunku kaa hayaa?
D. Sii dabagal: Goormuu kugu billowday?
E. Sii dabagal: Maxa uga dara xanuunkaaga?
F. Sii dabagal: Ma kuu suura gashay inaa is xannaaneyso? Haddii jawaabtu haa tahay, xannaano nuucee ah ayaa kuu suuragashay? Hadday maya tahay, maxaadan u helin?
G. Sii dabagal: Sidee isu xannaaneysay?

B. Adeegga caafimaad ee aad heshay/Baahidaada caafimaad

Qaybtan soo socota ee su'aalaha ah waxaan jeclaan lahayn inaan kahadalno wixii kusoo maray si aan wax uga ogaanno una helno adeegga caafimaad ee aad heshay.

1. Ma ii sheegi kartaa sida aad ku hesho adeeg caafimaad?
   A. Sii dabagal: Intee in la eg ayaad dhaqtar la kulantaa?
   B. Sii dabagal: Sidee ku tagtaa bukaan eegtada dhaqtarkaaga?
   C. Sii dabagal: Maxaa caqabado ah oo kaahor istaaga inaad dhaqtar la lakulanto?
   D. Sii dabagal: Fadlan sharraxaad kabixi wixii isbaddel aan fiicnayn ee kusoo maray xagga caafimaadkaga sannadkii lasoo dhaafay?

2. Maxay yihiin welwelka caafimaad ee kuugu daran marka aad booqaneyso dhaqtar?
   A. Sii dabagal: Dhaqtarku si waafi ah ma uga falceliyaa arrimaha ugu muhiimsan ee aad doonaysid in la dulmaro?
   B. Sii dabagal: Dhaqtarku ma kaa kaafiyaa baahiyahaaga caafimaad? Faallo ka bixi haddii sababo dheeri ahi jiraan ama aysan jirin?
   C. Sii dabagal: Sideed u aragtaa inay ugu fiican tahay in dhaqtarku markaan wax kuugu qabto?

3. Masahlan tahay ama ma adag tahay inaad daawo u hesho dhibaatadaada caafimaad ee ku ragaadiyey haddiiba uu jiro?
   A. Sii dabagal: Waxkaa hortaagan majiraan inaad daawada qaadato?

4. Kawarran qibradda aad kala kulantay marka aad dhaqtar kala hadlayso xaaladdaada caafimaad?
   A. Sii dabagal: Muhiimad intee la eg ayey kuu leedahay in dhaqtarku yahay qof aad isku jinsi tihiin (Yacni lab ama dheddig isla tihiin)?
   B. Sii dabagal: Maxaa kuu sahla inaad ka hadasho dhibaatada caafimaad ee

kusoo food saarta?

C. Sii dabagal: Maxaa adkeyn kara inaad ka hadasho dhibaatada caafimaad eeku soo food saarta?
D. Sii dabagal: Noo sheeg jirroyinka caafimaad oo aad u aragto inay adag tahay inaad kala hadasho qofka qaabilsan caafimaadkaaga?

C. Caafimaadka dhimirka/Welweliyeyaal (10 daqiiqo)

Waxaan garowsannahay in xaaladda dalku ku jiro iyo cudurka faafa ee Covid-19 inay keeneen ciriiri badan. Waxaan doonaynaa inaan waxka ogaanno intee in la eg iyo haddii ay kusaameeyeen arrimaahaasi. Waxaan kaloo jeclaan laheyn inaan ogaanno haddii aad kaalmo raadsatay wixii welwel ah oo arrinkaa keenay sida welwel xagga maskaxda iyo waxa aad kula talineyso si loo caawiyo dadka kale ee waayeelka ah rag iyo dumarba.

1. Fadlan sharrax sida aad dareemeysey illaa bilowgii sannadka?
   A. Sii dabagal: Maxaa aad kuu welwel geliyey?
   B. Sii dabagal: Sharrax wixii dareen ah ee kusoo maray oo ku murjiyey?
   C. Sii dabagal: Sharrax wixii dareen ah ee kusoo maray oo ku niyad kiciyey?

2. Sidee u mareeyneysaa dareenkaaga?
   A. Sii dabagal: Mala hadashey ehelkaaga?
   B. Sii dabagal: Saaxiibadana?
   C. Sii dabagal: Dhaqaatiirtana?
   D. Sii dabagal: Gargaareyaasha caafimaadka dhimirkana?
   E. Sii dabagal: Farsamo nuucee ah ayaad hadda isticmaashaa si aad u maareyso dhibka ku haysta?
   F. Sii dabagal: Maxaad u maleyneysaa inay ku caawin karaan markii aad welwesho?

3. Sidee u aragtaa inaad dad kale la wadaagto dareenkaaga ku aaddan dhibka kaa haysta dhinaca caafimaadka dhimirka?
   A. Sii dabagal: Inaad la wadaagto dhaqaatiirtana?
   B. PROBE: Inaad lawadaagto ehelkana?
   C. Sii dabagal: Inaad lawadaagto saaxiibkaa/taa/xaaskaaga ama odaygaaga?

D. Soojeedin talooyin (5-10 daqiiqo)

Aad ayaad ugu mahadsan tahay dhammaan warbixintaada muhuumka ah. Wareysigan waxaan kusoo afmeereynaa dhowr fikir iyo soojeedin kusaabsan waxa aad fikir ahaan u aragtid in loo bahan yahay in lasameeyo si daryeelka waayeelka ee Soomaaliya loo horumariyo ama loo wanaajiyo.

1. Maxaad isleedahay waad ubaahnaan lahayd xagga taabayaasha?

2. Maxaad talo ahaan soo jeedineysaa si adeegga caafimaad ee dadka waayeelka ah ee Soomaaliyeed loo hagaajiyo?

Aaad yaad ugu mahadsantahay waqtiga aad nasiisay manta. Jawaabahaagu waxay ahaayeen kuwo waxku ool ah. (END RECORDING).

Appendix B: In-depth Interview Guide in English

Date:

Name of Interviewer:

Time Started: _____ Time Ended: _____

Introduction

Thank you for taking the time to participate in this study today.

My name is ---------. I am a researcher at -----. The main focus of the interview will be to learn about your experience in seeking and receiving health care services in Somalia.

The questions we ask you today will focus on your physical health. We are trying to understand your health needs. We will also ask you to describe any other health concerns you have experienced, including emotional or mental health challenges.

Before we get started, I want to assure you that your participation in this interview is completely voluntary, and you are not obligated to answer any question you don't feel comfortable with or ask to stop the interview at any time. Our discussion today is completely confidential, and anyone not associated with the research project will not hear the recording or know of anything we have discussed today. We really want you to speak freely and share any thoughts and feelings you have.

We would like to record our discussion to make sure we don't miss any of your comments. Every comment or concern you have is important to us and don't want to miss any important points. Do I have your permission to record? [PRESS RECORD]

Do you have any questions? [allow for questions]. Ok, great if there are no (other) questions, let's begin!

A. Introduction/Background (5 minutes)

For this first set of questions, I would like to ask you a little bit about yourself.

1. How has your health been?
    0. What health problem, if any, do you have?
    1. PROBE: What are your current symptoms?
    2. PROBE: Where is the pain located?
    3. PROBE: When did it start?
    4. PROBE: Does anything make the pain worse?

5. PROBE: Have you been able to get care for yourself? If yes, what kind of care? If no, why not?
6. PROBE: How do you take care of yourself?

B. Healthcare Experience / Health Needs

In this next set of questions, we would like to discuss your experience in seeking and obtaining healthcare services.

1. Can you tell me how you get healthcare?
    0. PROBE: How often do you see a doctor?
    1. PROBE: How do you get to your doctor's clinic?
    2. PROBE: What barriers prevent you from accessing a doctor?
    3. PROBE: Please describe any negative changes you have experienced with your care in the last year?

1. What are your most pressing health concerns when visiting a doctor?
    A. PROBE: Does the doctor adequately address the main issues you want to cover?
    B. PROBE: Has your doctor met your healthcare needs? Explain why or why not?
    C. PROBE: How do you believe your doctor can best support you at this time?

1. How easy or difficult is it for you to obtain medication for your chronic condition (if you have any)?
    A. PROBE: What challenges have you had in accessing your medication?

1. What is your experienced discussing your health conditions with a doctor?
    0. PROBE: How important is it that your doctor is of the same gender?
    1. PROBE: What makes it easier to discuss your health problems?
    2. PROBE: What makes it harder to discuss your health problems?
    3. PROBE: What health concerns do you find are difficult to discuss with your health provider?

C. Mental Health/Stressors (10 minutes)

We recognize that the condition of the country and the recent COVID – 19 pandemic has been challenging. We want to learn more about how or if this has affected you. We would also like to know if you have sought help for stress or mental health concerns and what your recommendations are for helping other elderly men and women.

1. Please describe how you have been feeling since the start of the year?

A. PROBE: What has been stressful?
B. PROBE: Describe any feelings you have had that make you sad?
C. PROBE: Describe any feelings you have had that make you anxious?

1. How are you dealing with your feelings?
    A. PROBE: Have you talked with family,
    B. PROBE: friends,
    C. PROBE: doctors?
    D. PROBE: mental health provider?
    E. PROBE: What coping strategies do you currently utilize?
    F. PROBE: What do you think would help you with your feelings of stress?

1. How comfortable do you feel sharing your mental health concerns with others?
    0. PROBE: With doctors?
    1. PROBE: With family?
    2. PROBE: With partner/spouse?

D. Recommendations (5-10 minutes)

Thank you so much for your all of your great information. We'll finish the interview with just some final thoughts and suggestions about what you think is needed to make elderly care experiences better in Somalia.

1. What are some resources that you wish were available for you to access?

1. What recommendations do you have for making elderly healthcare better in Somalia?

Thank you so much for your time today. Your answers were very helpful. [END RECORDING]