IMPROVING POPULATION HEALTH BY ADDRESSING SOCIAL DETERMINANTS OF MENTAL HEALTH

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Abstract

This study examined the social determinants of mental health as influential factors on health outcomes. Three research studies comprised the dissertation. The first study was a systematic review that identified factors linking common mental disorders to the incidence of the four most prevalent non-communicable diseases (NCDs). Interventions to prevent poor health should target smokers, the elderly, women, and individuals with fewer than 12 years of schooling, according to findings. The second mixed-method study found that the pandemic and its control measures negatively impacted social determinants of mental health and health outcomes, with women, children and informal workers in Gaza being most affected. Some of the strategies deployed by the United Nations for the Relief and Works Agency in the Near East (UNRWA), such as the use of telemedicine, warrant further investigation for efficiency and acceptability. The third study assessed UNRWA's mental health and psychosocial support (MHPSS) response addressing the social determinants of mental health during the COVID-19 pandemic. During Group Model Building (GMB) workshops, participants shared their perspectives on what UNRWA did and how it addressed the vulnerabilities of Palestine refugees in Gaza during the health crisis. Findings suggested improving community wellbeing and enhancing staff support for better future pandemic preparedness. The PhD concludes that addressing social determinants of mental health is a joint responsibility between state and non-state actors and that it is necessary to reduce health inequities to lessen the global burden of disease. In addition to rigorous testing and contact tracing, addressing these determinants during crises, for example by distributing financial aid to poor families and strengthening social services, should be bolstered. This is especially important because evidence suggests that enhancing the socioeconomic status of individuals reduces health inequities and improves health outcomes.

Keywords: Mental health, social determinants, non-communicable diseases, MHPSS, health equity, COVID-19, pandemic, refugees, Occupied Palestinian territory, Gaza, UNRWA, mixed methods research, pragmatism, systematic review, participatory approach, group model building.

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Abbreviations

AFFSS	Arab Family Food Security Scale
CHD	coronary heart disease
CLD	casual loop diagrams
CVD	Cardiovascular disease
CMHP	Community Mental Health Programme
COPD	Chronic Obstructive Pulmonary Disease
DM	Diabetes Mellitus
DSM	Diagnostic and Statistical Manual
EMR	Eastern Mediterranean Region
EMRO	EMR Office
GBV	gender-based violence
GDP	Gross Domestic Product
GDPR	General Data Protection Regulation
GMB	Group Model Building
HPA	hypothalamic-pituitary-adrenal
HR	Human Resource
IASC	Inter-Agency Standing Committee
ICD	International Classification of Disease
IPC	Infection prevention and control
MeSH	Medical Subject Headings
MH	mental health
mhGAP	Mental Health Gap Action Programme
MHPAF	mental health preparedness and action framework
MHPSS	mental health and psychosocial support
NCDs	non-communicable diseases
NGOs	non-governmental organisations
OCHA	Office for the Coordination of Humanitarian Affairs
OECD	Organization for Economic Cooperation and Development
oPt	occupied Palestinian territory
PFA	psychosocial first aid
PHEIC	Public Health Emergency of International Concern
PMA	Palestinian Monetary Authority
PPE	personal protective equipment
PRs	Palestine refugees
PTSD	Post-Traumatic Stress Disorder
QMU	Queen Margaret University
RC&CE	Risk-Communication and Community Engagement
RSSP	Relief and Social Services programme

SDGs   Sustainable Development Goals
SDMH   Social determinants of mental health
UN   United Nations
UNESCO   The United Nations Educational, Scientific and Cultural Organization
UNHCR   United Nations High Commissioner for Refugees
           United Nations Relief and Works Agency for Palestine refugees in the Near
UNRWA   East
WHO   World Health Organization
WHO-5   World Health Organization Wellbeing Index

Chapter 1

Introduction

1.1 Rationale of the study:

1.1.1 The call for action to address mental health in the EMR

The Eastern Mediterranean Region (EMR) is a World Health Organisation (WHO)-defined group of countries that includes: Afghanistan, Bahrain, Djibouti, Egypt, Islamic Republic of Iran, Iraq, Jordan, Kuwait, Lebanon, Libya, Morocco, occupied Palestinian territory, Oman, Pakistan, Qatar, Saudi Arabia, Somalia, Sudan, Syrian Arab Republic, Tunisia, United Arab Emirates and Yemen. This region includes a mosaic of countries that are dissimilar in terms of their sociodemographic profiles, gross domestic products (GDPs), the capacities of their health systems, and health service coverage (Mandil et al., 2013). Mental disorders (explained in detail in the next chapter) are disabling and very common worldwide. In 2019, the Institute of Health Metrics and Evaluation estimates that 970 million people, equivalent to 1 in every 8 individuals worldwide, live with a mental health disorder (Institute of Health Metrics and Evaluation, 2019). Despite the gaps in the identification and recording of mental health disorders in the EMR (Gater et al., 2015), the reported rate of mental health disorders in this Region is higher than global figures, with women showing worse mental health outcomes compared to men (Mokdad et al., 2018; Zuberi et al., 2021). As is the case globally, depression and anxiety disorders are the most frequent diagnoses (WHO Commission on the Social Determinants of Health in the Eastern Mediterranean Region, 2021; Zuberi et al., 2021).

For decades, many of the world's conflicts took place in countries of the EMR (Asi Y, 2022). Wars, and occupation, in addition to economic and political unrest, place the majority of the population living there in a complex emergency situation (Ghosh et al., 2004). According to the World Bank Harmonized List of Fragile Situations in 2019, 10 out of the 36 fragile and conflict-affected countries worldwide lie within the EMR (World Bank, 2019). Strong evidence links conflict-affected situations with a higher burden of mental disorders; mainly of depression, anxiety, and post-traumatic stress disorder

(PTSD) (Ghosh et al., 2004). Therefore, it is not surprising to witness a high prevalence of mental illnesses in the Region (Asi Y, 2022). The WHO estimates that one in five people (22.1%) in conflict and post-conflict settings has depression, anxiety disorder, PTSD, bipolar disorder, or schizophrenia (Charlson et al., 2019). According to the Office for the Coordination of Humanitarian Affairs (OCHA), more than 250,000 individuals require essential MHPSS interventions in the occupied Palestinian territory (oPt) alone (OCHA, 2020).

Despite the frequent humanitarian crises and the ensuing disadvantages experienced in the conditions where people are born, grow, live, work and age (WHO Commission on the Social Determinants of Health in the Eastern Mediterranean Region, 2021) resulting in high mental health needs, the majority of people in the EMR receive little or no treatment. In 2010, the WHO estimated the median-treated prevalence of mental disorders in the EMR to be 0.31% (WHO, 2010). At the system level, this huge treatment gap reflects a situation of poor available resources, and inefficient and inequitable allocation of resources (Alwan & Saeed, 2015). Compared to low-income and middle-income countries where $3-$4 per capita and 7-9 per capita, respectively, are needed for a selective package of cost-effective interventions on mental health, countries of the Region spend on average $0.51 per capita on mental health; equivalent to less than 2% of the health budget (Gater & Saeed, 2015). Although there is a growing recognition of the mental health problem, gaps in mental health policies, legislations and services to prevent and treat mental disorders in the EMR exist (Gater et al., 2015). At the societal level, cultural beliefs and stigma are strong barriers for people to seek professional help (Rayan & Jaradat, 2016). Interestingly, a study by Karam et al found that low perceived need to seek professional help is a stronger barrier than stigma (Karam et al., 2019). This is due to low levels of mental health awareness, the presence of internalized stigmas to acknowledge having a mental illness, and the perception that treating mental illnesses is a luxury compared to physical health care (Asi Y, 2022).

Research on mental health in the EMR is scant, even in the wealthiest Gulf Countries of the Region (Asi Y, 2022). Between 2009- 2019, research productivity in the Arab region,

in particular, has increased by 160% compared to 57% globally yet, the number of peer-reviewed journal articles on mental health accounts for only 1% of the total research output produced on mental health globally (Maalouf et al., 2019). In a context where humanitarian crises are frequent, mental health needs are high and gaps in addressing mental health in countries of the Region exist, the priority should be raised to conduct research on mental health. The WHO EMR Office (EMRO) recommends prioritizing Region-specific mental health research, and supporting implementation research that informs service development and policy making (Regan et al., 2015).

1.1.2 Addressing social determinants of mental health improves health overall

Social determinants of mental health (as explored in detail in the next chapter) influence the onset and prognosis of mental health illnesses (WHO and Calouste Gulbenkian Foundation, 2014). In the context of humanitarian crises and fragility, these determinants are negatively impacted thereby increasing mental health needs (WHO EMRO, 2008). Evidence suggests the need for a public health approach targeting social determinants of health in order to reduce the burden of mental disorders at a population level (Rose-Clarke et al., 2020). Evidence from the EMR suggests that action on the social determinants of health should be prioritized to prevent mental disorders and promote mental health (WHO and Calouste Gulbenkian Foundation, 2014).

In the EMR, non-communicable diseases (NCDs) are also very common and the average mortality from NCDs is higher than the global average (WHO Commission on the Social Determinants of Health in the Eastern Mediterranean Region, 2021). NCDs are all driven by modifiable behaviours, namely: unhealthy diets, physical inactivity, tobacco smoking and harmful use of alcohol (WHO, 2018d). These behavioural determinants are widely recognised as the main entry point for the prevention and control of NCDs. While the aforementioned behaviours are the direct causes of NCDs, tackling the root causes of NCDs relate to the social determinants of health (WHO Commission on the Social Determinants of Health in the Eastern Mediterranean Region, 2021).

Discussions on the link between mental health and NCDs has been gaining much attention recently in the rhetoric about health and wellbeing (Nishtar et al., 2018). As mental disorders are shown to be fundamentally linked to a number of NCDs, actions on the social determinants of health would target both conditions and improve health overall (Allen et al., 2014).

1.2 The PhD journey

Initially, my plan was to examine the link between mental health disorders and NCDs by looking at common determinants in the context of the fragile situation of Lebanon. The fragility of Lebanon is rooted in the turbulent past and the unmanaged social, economic and political problems that started in the period following Lebanon's independence in 1943 and continued thereafter. More recently, Lebanon regressed deeper into fragility due to the neighbouring conflict in Syria in 2011 and the mass exodus into Lebanon, the political polarization against the involvement of Hezbollah in the Syria war, and the intensified sectarianism and the recurrent political vacuum after the assassination of Prime Minister Rafic Hariri in 2005 (Bilal Malaeb, 2018). At the start of my PhD in late 2018, my overall aim was to explore the linkages between mental distress and NCDs amongst adult Syrian refugees and poor Lebanese citizens by examining individual, social and environmental determinants of mental disorders (such as experience of acute stress or adversity, poverty, lack of social support, poor access to basic services etc.) in these populations. Additionally, I wanted to study the differences between those who – while sharing similar fragile living conditions in Lebanon - are exposed to differing levels of adversity as Syrian refugees and poor Lebanese citizens, respectively.

In 2019, I started my first research study which was a systematic review to identify the determinants that lead into the progression of NCDs among people with common mental health disorders. Meanwhile, the Lebanese revolution erupted in October 2019 resulting in political and social unrest. The peaceful protests were met by the Lebanese military with beatings, teargas, rubber bullets and sometimes with live ammunition. Lebanon's volatile security situation was made worse by the catastrophic Beirut blast on August 4, 2020. Meanwhile, the travel restrictions and the health risks of COVID-19 pandemic made

face-to-face interviewing and survey data collection in Lebanon, and elsewhere, no longer possible.

In March 2020, the WHO published a statement acknowledging the potential impact of the COVID-19 pandemic on mental health (WHO, 2020d). Ironically, the unfortunate event of this health crisis became an opportunity to examine its social and economic influence and how it affects physical and mental health. In other words, to examine the effect of the pandemic on health and its social determinants. Previous relations with the United Nations Relief and Works Agency for Palestine refugees in the Near East (UNRWA) key personnel and the fact that another research project was already taking place at that time between Queen Margaret University (QMU) and UNRWA around UNRWA- Gaza's response during COVID-19 pandemic created the opportunity to utilise and incorporate some of the research information collected into my own PhD study. The research team was already collecting information relevant to my research topic which made the study an alternative route to look into the same fundamental issue (social determinants of health in relation to health outcomes) as my original doctoral focus. As explained in the subsequent chapter, Palestine refugees in Gaza lived in precarious conditions prior to the pandemic. Looking at the social vulnerabilities of Palestine refugees in Gaza in the context of COVID-19 was a unique opportunity that can inform other humanitarian contexts facing similar adversities. First, Gaza is a context characterised by an ongoing crisis, social and economic vulnerabilities and the pandemic added a new layer of adversity for the refugees living there. Second, the service provider, UNRWA, has a unique operating model in that the services that it provides includes not only health services, but also relief, social and education services. In other words, UNRWA addresses some of the major social determinants of mental health (e.g., education, food security, housing etc.) in its regular operations within its programmes. This operating model makes UNRWA uniquely qualified for researchers to examine social determinants as they link to mental health.

Study 2 was therefore conducted with UNRWA staff and Palestine refugees in Gaza. Data collection, including survey and interview data, was gathered remotely. Initially, I wanted

to examine the interrelationship between common mental disorders and NCDs using survey data. However, with the prevailing conditions in Gaza elaborated later in chapter 5, the survey achieved a very modest sample size and could only provide limited insights into this topic. The study, however, did succeed in capturing participants' accounts in relation to the impact of the pandemic on mental health and the social determinants of health. The research project that was taking place between QMU and UNRWA was not originally designed to look into the social determinants of health; therefore, only the information relevant to my research questions was utilised.

Study 3 was a follow-up research study with UNRWA-Gaza staff that linked to my overall research aims, drawing from the analyses and findings of studies 1 and 2. As findings from study 1 identified the determinants linking mental health to NCDs, study 2 captured participants' views on how social determinants were affected by the pandemic and, as a result, aggravated the vulnerabilities of Palestine refugees in Gaza. Study 3 aimed to look at how UNRWA addressed some of these social determinants and whether or not it was successful in meeting the increased MHPSS needs of Palestine refugees during the pandemic. Additionally, it aimed to draw on the experience of UNRWA-Gaza to address MHPSS needs of other refugee populations going through the current or future pandemics.

1.3 Organisation of the thesis

In the following second chapter of the thesis, I present a literature review of existing knowledge and empirical evidence of issues concerning social determinants of mental health. Also, there is an explanation regarding the role of UNRWA and its services to Palestine refugees along with a detailed description of the Gaza context that forms the context for two of the three studies reported. The chapter concludes by presenting the overall aim of the research and the research questions.

Chapter three presents the study methodology in addition to the research design and the research process itself of study one, two and three. Moreover, the setting of the study, ethical considerations, the frameworks used for data analysis of study 2 and 3 and

researcher's positionality is presented. The chapter ends by looking at the researcher's reflexivity statement.

Chapter four presents the findings of the systematic review looking into the determinants linking common mental disorders with the incidence of NCDs. The chapter concludes by identifying the determinants that can be used for targeted interventions to address common mental disorders and NCDs.

Chapter five presents the findings of study two, which adopts a mixed method study design. This study examines the impact of the pandemic on the social determinants and mental health of Palestine refugees in Gaza during the COVID-19 pandemic. Results of the qualitative interviews suggested a clear increase in mental health needs with the pandemic further worsening the conditions where people are born, grow, live, work and age, especially for women, children and workers in the informal sector. Findings from this study illustrate the need to address social determinants to improve health. Strategies deployed by UNRWA during the pandemic, such as telemedicine, should be further evaluated if they were to be adopted post-pandemic.

With UNRWA being the sole provider not only of primary health care but also for other basic services, it became interesting to look deeply at how UNRWA addressed the social determinants by looking at MHPSS services. Chapter six presents the findings of study three, which consists of participatory research utilising a Group Model Building (GMB) workshop with UNRWA staff from the headquarters, Gaza Field Office, and UNRWA staff from the Education, Health and Relief and Social Services programmes in Gaza that were either involved in the provision or planning of MHPSS response during the COVID-19 pandemic. This chapter concludes by identifying ways to strengthen UNRWA's MHPSS response in preparation for future pandemics. Also, it draws similarities to other humanitarian contexts.

Chapter seven analyses the findings from the three studies as a whole in the light of the research questions set out for this study. This chapter highlights the link between social determinants in relation to health equity and health outcomes and presents the EMR as a

region where social determinants play a particularly important role in shaping populations' health. It also discusses the link between mental health conditions and NCDs and offers Collaborative Care as a model to deal with these conditions in clinical settings. In the same chapter, section 7.4 discusses the impact of the COVID-19 pandemic on the social determinants of health in relation to the attainment of the Sustainable Development Goals (SDGs) by 2030. It offers recommendations for UNRWA to strengthen its pandemic emergency response. Finally, this chapter concludes by offering some recommendations for future research, in addition to some implications for practice and policy.

Chapter 2

Literature review

In this chapter, I discuss the overarching literature surrounding social determinants of health starting with the debate around health equity and equality. Further I discuss the topic of the PhD, mental health, and how this relates to aforementioned debates on equity and the social determinants of health with an emphasis on the social determinants of mental health. I then discuss the COVID-19 pandemic, its impacts on social determinants of mental health and how this relates overall to the SDGs. At the end of my literature review, I present the context of Gaza where data collection for study 2 and 3 took place.

2.1 The health equity and equality discourse: the importance of addressing social determinants of health

Since 1978, the WHO started focusing on equity in the context of health based on the Alma-Ata Declaration. This declaration defined health inequity as stemming from the unacceptable nature of global health inequality seen between countries and between groups within countries and called for acceptable health for all by the year 2000 (WHO, 1978). Thirteen years later, the WHO adopted the Whitehead definition of equity as "differences which are *unnecessary* and *avoidable*, but in addition, are considered *unfair* and *unjust*" (Whitehead, 1991). According to Whitehead, the main difference between health inequality and health inequity is the moral imperative. While health inequality is a measured variation or difference between individuals or groups in terms of their health outcomes, health inequity is a political issue that has a moral undertone and a commitment towards social justice. In simple words, when the reason behind the disparity in health outcomes is *unfair* or *unjust*, based on a moral judgement, health inequality becomes inequitable (Kawachi et al., 2002).

More recently, the Commission on Social Determinants of Health, convened by the WHO from 2005- 2008 (WHO, 2008), viewed inequity between social groups as stemming from the *unjust* social and economic inequalities leading to an *unfair* distribution of life chances

(e.g., access to education, work opportunities, health care etc.) which result in inequalities in health outcomes (Marmot, 2018). This discourse emphasised the importance of taking action to address the social determinants of health to reduce social inequalities that lead to health inequities.

2.2 Mental health and Common Mental Disorders: An overview

Mental health and psychological well-being are an essential component of human health. Their definitions go beyond the sole absence of psychological distress or mental disorder to include the ability of individuals to make life choices and take decisions, establish relationships and manage daily activities, and realize one's abilities and achieve life goals (Herrman et al., 2005; WHO, 2018c). According to the American Psychiatric Association, mental disorders, also called mental illnesses, are classified as any condition characterised by cognitive and emotional disturbances, abnormal behaviours, impaired functioning, or any combination of these (American Psychological Association, 2020).

There are two main references to classify mental disorders: the International Classification of Disease (ICD) published by the World Health Organization and the Diagnostic and Statistical Manual (DSM) of Mental Disorders published by the American Psychiatric Association; the most recent versions of which are ICD-11 and DSM-5. DSM is primarily used by clinicians for diagnosis while ICD is primarily utilised for the coding of diseases in clinical settings and for epidemiological purposes. The listing of conditions differs between the two. For example, the ICD-11 lists depressive disorders under mood disorders whereas the DSM-5 lists depressive disorders as a separate category (American Psychological Association, 2021; WHO, 2021). The classification of conditions is routinely revised. For example, Post-Traumatic Stress Disorder (PTSD) was previously classified under anxiety disorders in DSM-4 and is currently listed in DSM-5 under 'Trauma- and Stressor-Related Disorders' (American Psychiatric Association Division of Research, 2013). According to the WHO, depressive disorders and anxiety disorders are the two main diagnostic categories comprising common mental health disorders (WHO, 2017b).

2.2.1   Risks to mental health:

In 2012, the WHO identified three different categories of risks affecting an individual's wellbeing, namely: the individual attributes and behaviours, social and economic circumstances, and environmental factors (Figure 1). Although the WHO called these factors "risks to mental health", they are similar to the social determinants of mental health which I will be discussing later in this chapter.

Figure 1: Contributing Factors to Mental Health and Wellbeing (WHO, 2012)

- <u>Individual Attributes and Behaviours</u>

Individual attributes relate to the person's ability to process and regulate emotions and ideas and to carry on social interactions and take on responsibilities. They are influenced by genetic predisposition and other biological factors such as prenatal alcohol exposure (WHO, 2012). Individual behaviours, such as the harmful use of alcohol, unhealthy eating, physical inactivity and smoking, are closely tied to the individual's lifestyle and could trigger psychological disturbances (Bakhshaie et al., 2015; Patten et al., 2018; Taylor et al., 2014).

- <u>Social and Economic Circumstances</u>

An individual's mental health is greatly affected by the social environment that one inhabits. Some life events such as, living alone, bereavement, family conflict and exposure

to discrimination of any kind can adversely affect social interaction leading to psychological stress (Srishti J., 2015). In addition, socioeconomic conditions, such as unemployment and financial hardships, predispose individuals to mental illnesses (WHO, 2012). According to the WHO, the poorest segment of the society is often the most susceptible to poor mental health (WHO, 2006). The stress that accompanies absolute poverty is a powerful risk factor for mental disorders such as depression and substance dependence (Carrà et al., 2018). Previous research linked major economic transition to the harmful use of alcohol (Patel et al., 1998), drug abuse and suicide (Saraceno & Barbui, 1997). Interestingly, the relationship between low socioeconomic status and mental disorders is bi-directional. People with a mental disorder are more likely to be unemployed and facing financial hardships thus worsening their mental wellbeing (WHO and Calouste Gulbenkian Foundation, 2014).

- Environmental Factors

The environmental factors that affect people's mental health are related to the wider sociocultural and geopolitical surrounding. Factors such as health inequity, poor access to basic services such as clean water and electricity, political instability and armed conflicts are just examples of environmental determinants of mental health (WHO, 2012). Humanitarian crises often result in an increase in the rates of mental disorders and cause a disruption in the social support structures, such as the support provided by family and friends, and in the health systems' response. The inability of social and health systems to respond to the changing needs exacerbate the problem even further (Alwan & Saeed, 2015). Literature on populations who have lived through conflict highlights that war-affected individuals showing signs of depression and behavioural disorders are more common than those not subjected to war-related trauma (Kessler, Amminger, et al., 2007; Kessler, Angermeyer, et al., 2007). More than one in five people (22.1%) in a post-conflict setting have depression, anxiety disorder, PTSD, bipolar disorder, or schizophrenia, and about one in ten (9.1%) have a moderate or severe mental disorder at any given time, according to a recent systematic review and meta-analysis. The same study also found that the age-standardized prevalence of depression, PTSD, and anxiety disorders was more

than the global mean prevalence, with depression and PTSD having prevalence of 10.8% and 15.3%, respectively (Charlson et al., 2019).

2.3 Social determinants of mental health (SDMH):

Building on the work of the WHO's Social Determinants of Health Report (WHO Commission on the Social Determinants of Health, 2008), Marmot et al. published a landmark report "*Fair Society, Healthy Lives*" in 2010 that addressed the link between socioeconomic position and health status. In this report, Marmot et al. were commissioned to collect evidence and advise on the development of England's strategy to reduce health inequalities. Evidence in this report showed that: the more people were socially and economically advantaged, the better was their health status (Marmot M. et al., 2010). In this report, the research team proposed a framework for taking action to reduce health inequalities in England in order to achieve better health outcomes. Later in 2014, Marmot et al. were commissioned to address health inequities in the European Region. The aim of the report was to analyse policies and offer recommendations to low, middle and high-income countries in the Region to address inequities. The report highlighted the impact of the 2008 economic crisis and how it broadened inequities between and within countries (Marmot M. et al., 2014).

In 2014, the term Social Determinants of Mental Health (SDMH) was first introduced building on the work of the WHO's Social Determinants of Health Report (WHO Commission on the Social Determinants of Health, 2008), the Marmot review in England (Department of Health, 2010; Marmot M. et al., 2010) and the WHO Review of Social Determinants of Health and the Health Divide that addressed health inequities in the European Region (Marmot M. et al., 2014). Global evidence suggested that mental health disorders in populations worldwide are socially determined to a great extent (WHO and Calouste Gulbenkian Foundation, 2014).

SDMH are defined as the conditions in which people are born, live, grow, work and age. They affect the onset and prognosis of mental health illnesses, and are driven by the social, economic, and environmental influences (WHO and Calouste Gulbenkian Foundation,

2014). Sufficient evidence exists linking social factors such as gender, ethnicity, income level, employment status and education to a person's health status (WHO, 2018b). Social inequalities arise when there are differences in these social conditions and are associated with an increased risk for many common mental health disorders. In fact, the greater these social inequalities are, the higher is the inequality in the risk to develop common mental disorders (WHO and Calouste Gulbenkian Foundation, 2014).

2.3.1   Approaches to address the SDMH

The report on SDMH adopted the same framework of the European Region action on social determinants of health (Marmot M. et al., 2014). It emphasised the need to adopt two strategies to address SDMH, namely: 1- Taking a life-course approach and 2- addressing gender differences and taking a social gradient approach.

- Taking a life-course approach:

Exposure to various vulnerabilities and stressors can take place at any stage of life and the accumulation of positive and negative life experiences affects mental health outcomes (Allen et al., 2014; Marmot et al., 2012). Regardless of the age-group, life events such as, living alone, bereavement, family conflict and exposure to discrimination of any kind can adversely affect social interaction leading to psychological stress (Srishti J., 2015). There is strong evidence that mental and physical health conditions that emerge later in life originate earlier in life (Shonkoff et al., 2012). Exposure to stressors at certain developmental stages affects the neural mechanisms of the brain and the gene expression; both of which related to the regulation of stress response (Taylor, 2010). Providing children with social support, through a secure and stable relationship with a caring and loving adult, buffers against anxiety and enables better coping with stressors (Mikulincer & Shaver, 2012).

Actions to address SDMH should adopt a life-course-approach starting from the pre-conception stage and progressing towards older age (Marmot M. et al., 2014; WHO and Calouste Gulbenkian Foundation, 2014). Marmot emphasises the importance of empowering women, mothers-to-be, and creating the proper atmosphere for practicing

good parenting and family-building. Evidence from the WHO European Region shows that in order to give children a good start to life, women and mothers-to-be should be provided with an adequate social and health protection and should be able to access a universal, high-quality, and reasonably-priced early years' education and child care systems. Actions at later stages of life to reduce work-related stress and long-term unemployment, prevent and manage morbidity at older age are also necessary to empower individuals, reduce social and economic inequities and allow individuals to have control over their lives (Marmot M. et al., 2014; Marmot M. et al., 2010). As life experiences are cumulative, intervention at any stage of life will improve the mental health of a population and reduce the risk for mental disorders associated with inequalities (WHO and Calouste Gulbenkian Foundation, 2014).

- <u>Addressing gender differences and taking a social gradient approach:</u>

Differences between different social groups in the circumstances in which they are born, grow, live, work and their access to health services create health inequities (Allen et al., 2014; Marmot et al., 2012). Such differences are unfair and avoidable (Whitehead & Dahlgren, 2006) and can be addressed by action on social determinants (World Health Organization and Calouste Gulbenkian Foundation, 2014).

According to Patel et al., gender and socioeconomic position determine the extent to which people are at risk of developing common mental health disorders (Patel et al., 2010). Women are more prone to depression as they experience social, economic and environmental conditions differently compared to men regardless of the household income level and the life-stage. For example, the stress that women experience is mostly related to the burden associated with women's gender roles i.e., the balance between caregiving, paid work and housework. Men's health and well-being, on the other hand, is impacted by gender norms that encourage risk-taking behaviour and violence (Marmot M. et al., 2014). Therefore, as social determinants affecting men and women differ, action addressing SDMH inequities should adopt a gender-equity approach.

At the social level, people who are economically disadvantaged are at a greater risk of developing depression (Patel et al., 2010). That does not mean that only the poorest in the society are impacted by these differences. According to Allen et al, health inequities occur along a continuum. For instance, people of average socioeconomic status, the middle-class, experience worse health outcomes than the best-off in a society, and better than the worst-off (Allen et al., 2014). Achieving health equity at the societal level means that action should ensure an adequate level and distribution of social protection to reach all segments of the society, albeit proportionate to the level of disadvantage (WHO and Calouste Gulbenkian Foundation, 2014). It has been suggested that people belonging to the lower strata of the society experience disempowerment, marginalisation and exclusion (especially when there exists a huge income inequality between the social strata), hopelessness, helplessness and reduced access to services, including education and health services. All these factors may increase the risk for depression amongst this group (Patel et al., 2010).

2.3.2   SDMH and NCDs and addressing their inter-relationship

The social determinants of mental health may not be dissimilar from social determinants of physical health. Mental illnesses and other physical NCDs often co-exist. Systematic reviews linked cancer with anxiety disorders (Watts et al., 2014; Watts et al., 2015) and post-traumatic stress disorder (Arnaboldi et al., 2017). Meta-analyses linked diabetes with a range of mental disorders including depression and post-traumatic stress disorder (Vancampfort et al., 2016). Across countries, the odds ratios for the association of heart disease with mood disorders, anxiety disorders and alcohol dependence was found to be 2.1, 2.2 and 1.4, respectively (Korff et al., 2009).

A bidirectional relationship between mental illness and NCDs is hypothesized (Pryor et al., 2017) as mental disorders can either be a consequence (Nouwen et al., 2010) or a precursor to NCDs (Wang et al., 2020). The exact mechanism linking them remains to be clearly understood. It has been suggested that they influence each other directly through physiological systems (e.g., neuroendocrine system). For instance, depression was shown to provoke a cascade of events in the hypothalamic-pituitary-adrenal (HPA) axis, which

is normally stimulated in response to stress, leading to insulin resistance and eventually to type 2 diabetes (Gragnoli, 2012). Other causal mechanisms may operate at the levels of behavioural, social and environmental circumstances. For instance, depression has been associated with behavioural risk factors of NCDs such as poor dietary habits (Pryor et al., 2017) and smoking (Chaiton et al., 2015). Social factors, such as poverty, are also linked to common mental health disorders and NCDs. According to the WHO, the poorest segment of the society is often the most susceptible to poor mental health (WHO, 2006). At the same time, in a large-scale population cohort in the UK, it was found that the segment of the population who were more socioeconomically deprived had an increased risk of developing heart disease (incidence rate ratio 1·61, 95% CI 1·58–1·64), and did so earlier in life than those from the most affluent group (adjusted difference −3·51 years, 95% CI −3·77 to −3·25). Beyond these individual and social factors, a number of studies suggest a role for environmental factors linking mental health to NCDs. People subjected to environmental determinants of mental health such as health inequity, poor access to basic services such as clean water and electricity, political instability, discrimination and armed conflicts have higher rates of diabetes and cardiovascular diseases compared to the general population (Wagner et al., 2013). A study by Tylor et al in 2007 found discrimination against black women to be associated with an increased incidence of cancer (Taylor et al., 2007).

Looking at the three categories of mental health determinants, it is important to say that the co-existence of multiple behavioural, social and/or environmental problems intensifies their effect on well-being. For instance, it gets more difficult to deal with substance abuse on one hand and diabetes on the other hand in conditions of unemployment and financial insecurity at the household level affected by the lack of political stability and economic growth at the country level. Therefore, the interaction between mental health determinants is dynamic and can either be threatening or protective to one's mental wellbeing and overall health.

Despite the supportive evidence that links mental health and NCDs and their common determinants, the connection between them is usually overlooked in clinical settings and,

to a great extent, in country-level policy making. This has been attributed to factors such as limited government capacities for policy development, weak health systems, and insufficient finances amongst other factors (Banatvala et al., 2019; United Nations General Assembly, 2015). In 2005, member states in the WHO European Region endorsed the "no health without mental health" statement owing to mental health's contribution to years of disability (WHO, 2005a). A review article summarising available evidence on the connection between mental disorders and non-communicable diseases emphasised the need to address this link in future health policies (Prince et al., 2007). In 2017, the WHO endorsed this position to target reduction in morbidity and years of disability (WHO, 2017a). The United Nations (UN) Inter Agency Task Force on the Prevention and Control of Non-communicable Diseases is currently supporting 25 countries in their mission to address the challenges in responding to the rapid rise in non-communicable diseases and improving mental health by scaling up country level preparations, mobilising resources and developing partnerships with the civil society and the private sector (Banatvala et al., 2019).

As mental disorders are fundamentally linked to a number of other physical health conditions, actions addressing the social determinants of mental health would improve health overall, including mental health (Allen et al., 2014; WHO and Calouste Gulbenkian Foundation, 2014).

In Chapter 4, I address the association between common mental health disorders and non-communicable diseases in a systematic review. Specifically, I investigate the determinants that lead to the progression of NCDs among people with common mental disorders.

2.4 Achieving the Sustainable Development Goals (SDGs) by addressing the SDMH

In 2015, nearly all countries worldwide committed themselves to move towards more equitable, resilient and peaceful societies by 2030 by adopting the 17 Sustainable Development Goals (SDGs) of the United Nations (United Nations, 2020b). In 2018, the Lancet Commission on Global Mental Health and Sustainable Development provided a new conceptualisation of social determinants of mental health bringing together distal and

proximal factors and associated them with the Sustainable Development Goals (SDGs) in an attempt to drive the reduction of global mental health while progressing towards the attainment of SDGs (Figure 2) (Jamal et al., 2022; Patel et al., 2018).

Using available epidemiological data, the major social determinants of mental health were grouped into five domains: demographic, economic, neighbourhood, environmental events and social and cultural domains. These domains included distal and proximal levels of effect on the individual's mental health outcomes. Following Bronfenbrenner's ecological approach, proximal factors are the factors in the immediate environment of an individual that could exert a positive or a negative effect on the individual's mental health whereas, distal factors refer to the structural arrangements that increase or decrease the risk for mental disorders in populations (Bronfenbrenner, 1979). The developed framework included a life-course dimension which is in agreement with the WHO Commission on the Social Determinants of Mental Health framework (WHO and Calouste Gulbenkian Foundation, 2014) and accounted for genetic determinants affecting mental health. Upon the consensus of a group of experts, the SDGs were matched with the domains that seemed most relevant (Lund et al., 2018).

Figure 2: Social Determinants of Mental Health and the SDGs (Lund et al., 2018; Patel et al., 2018)

Establishing an understanding of the social determinants is important for primary prevention and for identifying target groups for prevention and care. According to Patel et al., socioeconomic interventions can enhance biological and psychological treatments and can break the vicious cycle between mental disorders and social disadvantage therefore, contributing to human development by facilitating the achievement of the Sustainable Development Goals (Patel et al., 2010; Patel et al., 2018). While this framework is specific to the social determinants of mental health and links to a global agenda, however, it is lacking in one aspect as it does not name the "health system" as a determinant for mental health.

2.5 COVID-19, the social determinants and the advancement of the SDGs

Recent evidence shows that the Coronavirus pandemic has delayed the advancement towards achieving the SDGs by 2030 (Shulla et al., 2021; The Lancet Public Health,

2020). The UN Department of Economic and Social Affairs published the SDG Report 2020 during the UN's 75th anniversary. In this report, the UN mentioned that, not only the pandemic has attenuated the implementation towards many SDGs, but worse, in some cases, it has turned back decades of progress (Jamal et al., 2022). For example, progress towards achieving SDG 3 (Good Health and Wellbeing) was reversed as many countries have stopped children vaccination programmes (Shulla et al., 2021), and in many places including countries of the EMR, NCD prevention and treatment services were disrupted, and patients' health was threatened as those who were not COVID-19-infected were less prioritised to receive care (United Nations, 2020b; WHO Commission on the Social Determinants of Health in the Eastern Mediterranean Region, 2021).

Prior to the pandemic, countries worldwide were not on track to achieve SDG 1 (Zero Poverty) by 2030 with projections showing that by 2030, 6% of the population worldwide would still be living in poverty. The COVID-19 pandemic has caused an economic crisis worldwide whereby in 2020 alone, 71 million people worldwide became living in extreme poverty; a rise in poverty rates that the world has not seen since 1998 (United Nations, 2020a). The global economic recession (the opposite of SDG 8) exacerbated income inequalities worldwide (The Lancet Public Health, 2020). Populations most affected by the pandemic were the world's poorest and most vulnerable populations such as people in the informal economy, children, older people, people with disabilities, migrants and refugees (Guterres & Liu, 2020; Jamal et al., 2022) thus, threatening SDG 10 (Reduced Inequalities).

The greatest economic impact was seen in developing countries (Barbier & Burgess, 2020). Several countries of the EMRO region witnessed a substantial rise in poverty rates, food insecurity and undernutrition due to the COVID-19 containment measures and the associated decrease in income (WHO Commission on the Social Determinants of Health in the Eastern Mediterranean Region, 2021) thus, stalling progress towards achieving SDG 1 (No Poverty) and SDG 2 (Zero Hunger). Increased levels of unemployment and reduced working hours coupled with insufficient social protection mechanisms failed to provide a healthy and dignified life for those who already live on low incomes such as

workers in the informal sector, migrants and refugees (WHO Commission on the Social Determinants of Health in the Eastern Mediterranean Region, 2021).

Achieving an equitable and inclusive education (SDG 4) was also threatened as education became forcefully digitalised (Mhlanga & Moloi, 2020) depriving 1.6 million students worldwide of education (United Nations, 2020a). The impact of such a disruption will remain a legacy affecting the achievement of this goal. Projections show that by the year 2030, 200 million students would still remain out of formal education (The Lancet Public Health, 2020). Research showed that there was a gender difference in terms of continued learning during the pandemic as girls had less access to digital education (The Lancet Public Health, 2020). Gender inequity was also evident in other aspects as women and girls were more prone to domestic violence during the pandemic and had to endure the burden of unpaid household and care work (United Nations, 2020a, 2020b).

Access to water and sanitation (SDG 6) remains a global problem. Worldwide, 2.2 billion people do not have access to drinkable water (The Lancet Public Health, 2020); the case for 60% of the population in the EMR (WHO Commission on the Social Determinants of Health in the Eastern Mediterranean Region, 2021). This is particularly problematic during the COVID-19 pandemic where proper sanitation and handwashing are the first lines of defence against contracting the virus (World Bank, 2020).

Progress towards achieving the SDGs is particularly threatened in humanitarian contexts where the COVID-19 pandemic has severely impacted health and the social determinants of mental health (WHO Commission on the Social Determinants of Health in the Eastern Mediterranean Region, 2021). The COVID-19 pandemic has highlighted and exacerbated health inequities between and within countries and its effect on countries of the EMR has been substantial (WHO Commission on the Social Determinants of Health in the Eastern Mediterranean Region, 2021). I have chosen the context of Gaza to look at the impact of COVID-19 pandemic. As you will see below, Gaza is a very challenging environment with refugees living in precarious conditions prior to the health crisis.

2.6 Gaza: A dire humanitarian situation

The Arab-Israeli war officially started with the Nakba and the founding of Israel on May 15, 1948. By 1948, the Jewish forces had systematically depopulated 500- 600 Palestinian villages and/or cities; threatening the lives of Palestinians, permanently expelling and sending into exile about 750,000 Palestinians (AFSC, 2022). By mid-2021, the population of Palestinian refugees has grown to reach 13.8 million, scattered around the world (PCBS & UNFPA, 2021). Following the United Nations Partition Plan in 1948, Gaza city, and the area surrounding it, was allocated to the Arabs. Since then, this area became populated by internally-displaced Palestinians that were living in poverty in impoverished camps and were later offered aid by the United Nations for the Relief and Works Agency in the Near East (UNRWA) starting 1949 (Britannica, 2021). Since its establishment in 1949, UNRWA has been mandated to provide assistance to Palestine refugees in Syria, Lebanon, Jordan, Gaza and the West Bank. In addition to providing health care, UNRWA provides education, relief and social services, microfinance and emergency assistance (Jamal et al., 2022; UNRWA, 2021a).

Between 1948- 1967, the Gaza Strip witnessed several armed conflicts between Israeli forces and Arab guerrillas fighting against Israel; it was taken by Israel the first time in 1956 and reverted back to Egyptian control a year later, and was occupied again by Israelis in June 1967 after the Six-Day War that took place back then. The territory remained occupied by Israelis from 1967- 2005 after the first and the second Intifada, which took place in 1987 and 2000, respectively, that forced Israeli troops to gradually retreat and transfer governmental control to the Palestinian Authority (PA) (Britannica, 2021). During the occupation of the Gaza Strip, the Israeli forces limited the movement of people and the exchange of commodities with other parts of Palestine. It restricted access to land and sea borders resulting in weak health and social services (Hammoudeh et al., 2020). After the PA took control over the Strip, violence escalated between different Palestinian political groups, which led to the transfer of power in Gaza to Hamas in 2007. Hamas, listed as a terrorist group by Israel, the United States and the European Union, brought sanctions onto the Strip (Britannica, 2021; Jamal et al., 2022). Since 2007, Israel, followed

by Egypt, have enforced a blockade on the Gaza strip, thus crippling the lives of Palestinians even further and depriving its inhabitants from basic commodities such as fuel, food, and medicine.

Approximately, 1.95 million Palestinians reside inside the 365 km² area of the Gaza strip, of whom 1.47 million are registered refugees, with 37.1% living in 8 highly populated camps (UNRWA, 2022), compared to 871,000 registered refugees in the West Bank living in 19 camps (Jamal et al., 2022). Particularly in Gaza, people have limited access to safe water and waste removal. The sewage crisis in Gaza subjects residents to water-borne illnesses. Access to water averages around 53 litres per capita per day which is half the recommended amount set by the WHO (100 litres/capita per day) (WHO, 2018a). Only 5% of the population in Gaza have access to drinkable water (UNRWA, 2021a, 2021c) and the remaining population are left with low quality water bought from vendors for a higher price (World Bank, 2016b). This profile emphasises the highly populated, scarce-resource setting of the Gaza strip with access to poor water quality and quantity (Jamal et al., 2022; UNRWA, 2022). In 2018, electricity from the grid was limited to 7 hours per day. Fuel shortages and the restriction of importing generators hinder any attempt for mitigation (WHO, 2018a). Data from 2019 shows that 68% of households in Gaza face moderate to severe food insecurity and the prevalence of stunting among children is 10%; the majority of whom belong to refugee and low-income families (WHO, 2019b). Over the past years, shortages in medical supplies, specialised equipment, and medications were severe; in 2019, 42% of medications belonging to the WHO's Essential Medicines List were completely depleted and many essential medical disposables had less than one month's supply (WHO, 2020b).

Palestine refugees living in Gaza, especially those living in camps are at the bottom of the socioeconomic ladder (Elbedour et al., 2007). In 2019, a year before community transmission of COVID-19 in Gaza, the level of unemployment was surging, reaching 45.1% (Gisha, 2020b). Estimates of the same year by UNRWA show that 620,000 Gazans survive on $1.60 per day and nearly 390,000 Gazans live in absolute poverty (Daily Sabah, 2020; Jamal et al., 2022). Jobs in agriculture and fishing have been particularly harmed

since the blockade with workers subjected to frequent military attacks and are faced with unsanitary conditions related to pollution and untreated waste (WHO Commission on the Social Determinants of Health in the Eastern Mediterranean Region, 2021).

Palestinians, living in a context of occupation and conflict, are frequently exposed to high levels of violence. Since the blockade, Gaza was subjected to five major military operations by Israeli troops, with the last taking place in May 2023 and lasting for five days (United Nations, 2023). In 2019, 134 Palestinians were killed and 15,492 injured whereby 80% and 76% of those killed and injured, respectively, live in Gaza; the majority of causalities took place during Gaza Strip's "Great March of Return"[1],[2]. Twenty percent of Palestinians killed and 39% of those injured were boys under the age of 18 years, while 7% of those killed and 7% of those injured were women or girls (OCHA, 2022). The blockade, the dire socioeconomic status and the frequent exposure to violence have pushed Palestinians further into despair, with negative impacts on mental health and wellbeing (Hammoudeh et al., 2020; Jamal et al., 2022).

Gaza has one of the youngest populations globally, with 64.2% of the population in 2021 being under 25 years old (CIA Factbook, 2021; US Census Bureau, 2021). The majority of studies on anxiety and depression in Gaza were conducted on children and adolescents (Altawil et al., 2008; Thabet et al., 2011; Thabet et al., 2004; Thabet et al., 2016). Data from 2007 showed that 68.9% of adolescents had PTSD, 40% had moderate to severe levels of depression and 94.9% had severe anxiety (Elbedour et al., 2007). In 2008, another study conducted on 200 parents and 197 children (aged 9- 18 years) living in areas subjected to ongoing shelling and other military violence in Gaza showed high rates of post-traumatic stress disorder (PTSD) and anxiety in both groups, with exposure to war trauma significantly deteriorating the mental health of both parents and their children. In

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[1] Amnesty International. (2023). *Gaza Great March of Return*. https://www.amnesty.org/en/latest/campaigns/2018/10/gaza-great-march-of-return/: Starting March 30, 2018, the Great March of Return demonstrations commenced and have persisted despite Israel's deadly response against unarmed demonstrators, journalists, and medical personnel

[2] MSF. (2020). *Great March of Return*. https://www.msf.org/great-march-return: Nearly every Friday, until November 30, 2019, Palestinians in Gaza protested along the border fence dividing the Strip from Israel. The intention of these protests was to call for the right of millions of Palestinian refugees to return to their native towns and villages in the current Israeli territory and to remove the blockade enforced by Israel

this study, 77% of children were likely to present with PTSD using the Children's Revised Impact of Events Scale (CRIES-13) cut-off score of 30 and 60% of parents were likely to have PTSD with potential clinical significance as assessed using the PTSD-Checklist with a cut-off of 50 (Thabet et al., 2008). In 2016, data from UNRWA on protection and related services showed that the prevalence of depression and PTSD amongst Palestine refugees in general was greater than global figures (UNRWA, 2016). In the same year, a study on 251 children in Gaza showed that 59% were within the clinical range for PTSD, 50.6% had depression and 21.9% had anxiety (Thabet et al., 2016). A study published by Charara et al. in 2017 showed that the occupied Palestinian territory carries the highest burden of mental disorders in the EMR (Charara et al., 2017). The Humanitarian Response Plan report by OCHA in 2020 showed that 270,000 children in Gaza suffer from severe, moderate or mild forms of mental disorders. Figures on mental health conditions in Gaza amongst children and adolescents are alarming especially that, according to the Lancet Commission on Global Mental Health, the origin of most of mental disorders go back to childhood and adolescence (Jamal et al., 2022; Patel et al., 2018). Most recently, a study by Médecins du Monde Switzerland found that 52% of all cases of attempted suicide in the occupied Palestinian territory belonged to young Palestinians aged 16- 25 years (MdM Switzerland in Palestine, 2019). Other non-communicable diseases are also common among Palestinians. In 2018, NCDs accounted for two-thirds of deaths amongst Palestinians in the oPt (WHO, 2020b). In Gaza, thirty hospitals are available with a bed capacity of 1.3 per 1000 of the population. The Ministry of Health accounts for 71% of the bed capacity in Gaza and non-governmental organisations provide the remainder. In 2021, UNRWA's data showed that the death rate amongst NCD patients in 2021 was 1.9%, the highest in Gaza compared to other UNRWA Fields, for two reasons: the scarcity of intensive care beds and the lack of specialised hospitalisation services within the Strip (UNRWA, 2022).

In 2012, the United Nations published a report on the future of Gaza warning that by 2020 the territory will not be a liveable place if no remedial action to end the siege is taken (United Nations, 2012). Since the siege did not end, Palestinians living in Gaza continue to face multi-faceted psychosocial vulnerabilities, which the SARS-CoV-2 pandemic is

likely to exacerbate. Countries and settings that were already experiencing a humanitarian crisis are particularly affected by the negative medical, economic, and psychological aspects of the pandemic (WHO, 2020d). The deterioration of mental health of different population groups during the COVID-19 pandemic has been documented worldwide (Proto & Quintana-Domeque, 2021). According to the United Nations High Commissioner for Refugees (UNHCR), the pandemic itself and its associated mitigation and prevention measures has added to the deterioration of the mental health status of refugees (Jamal et al., 2022; UNHCR, 2020).

2.7 The geopolitical environment and its influence on the Palestinian healthcare system and access to care

Similar to other contexts that experience ongoing conflict and instability, the intricate political history of Palestine, and later the occupied Palestinian territory (oPt), has significantly affected the healthcare system there. In particular, it has exerted a noteworthy influence on the configuration, operation, and overall capability of the healthcare system (Giacaman et al., 2003). During the period of the British Mandate over Palestine subsequent to World War I, the Government Department of Health operating under the British Civil Administration was responsible for the provision of health services from 1920 to 1948. Although certain government hospitals and health clinics were established for the Arab population, the British colonial policy was geared towards restricting social service spending. Consequently, medical services were scarcely available to the predominantly impoverished Palestinian population residing in the rural areas of the country. The Christian Mission hospitals and government hospitals located in major Palestinian cities were accessible to numerous urban residents (Giacaman et al., 2003).

The Arab-Israeli War of 1948 culminated in the creation of the State of Israel and the displacement of the Palestinian populace, resulting in the evacuation of approximately 500-600 Palestinian villages and/or cities. This event posed a significant threat to the safety and well-being of the Palestinian people, leading to the permanent expulsion and forced exile of roughly 750,000 Palestinians (AFSC, 2022; Jamal et al., 2022). Following

the cessation of hostilities, distinct healthcare systems emerged in the West Bank under Jordanian rule and the Gaza Strip under Egyptian administration (Giacaman et al., 2003).

The United Nations Relief and Works Agency for Palestine Refugees (UNRWA), which I will elaborate more about in the section below, was instituted by the United Nations General Assembly in 1949 and commenced its activities in 1950. Its primary objective was to provide direct relief and works initiatives for Palestine refugees. From the late 1950s onwards, refugees and rural areas gained access to contemporary medical services due to the expansion of health and education facilities to remote regions. According to Giacaman (1994), the health services available at that time were primarily focused on curative measures and were relatively basic (Giacaman R., 1994).

Prior to the 1967 Israeli occupation of the West Bank and Gaza, Palestinians had access to three distinct health service delivery systems. The governments of Jordan and Egypt respectively supervised the administration of the public system in the West Bank and Gaza Strip. In addition, UNRWA was responsible for delivering health services to refugees. The private sector included philanthropic organisations that managed the major hospitals at the time and few primary care facilities. Subsequent to the occupation in 1967, the Israeli Civil Administration, which operated under the purview of the Ministry of Defence rather than the Ministry of Health, assumed control of the governmental healthcare system. The administration proceeded to manage the healthcare system in a manner that impeded its growth and development, imposing stringent budgetary constraints, mandating referral to Israeli hospitals for tertiary care, and limiting the issuance of licenses for new medical and healthcare facilities or initiatives. As noted by Giacaman in 1994, the Palestinian healthcare system became totally reliant on the Israeli healthcare system (Giacaman R., 1994). In addition, the provision of healthcare during that era was characterised by the marginalisation of the Palestinian population in terms of their participation in decision-making processes and senior administrative positions. Despite the fact that all service providers were of Palestinian origin, there was a paucity of institutional development to accommodate the expanding and changing health needs of the Palestinian population (Giacaman et al., 2003).

Since its establishment under the Oslo Accords in 1993, the Palestinian Authority has been the official entity responsible for providing health care to the Palestinian population in Gaza and the West Bank. The chronic occupation though hampered the capacity of the Palestinian Authority to fulfil its role. This is due to the inability of the public authority to raise revenue and afford providing health services thus, creating a situation of aid dependency (WHO, 2020b). Due to service shortages in the public healthcare sector of the oPt, the Palestinian Ministry of Health refers patients to Israeli, Egyptian, or Jordanian hospitals that are not affiliated with the Ministry of Health. However, the prevailing political circumstances constrain the jurisdiction and regulatory authority of the Palestinian Authority with respect to borders (Hammoudeh et al., 2020) which creates a challenge for Palestinians seeking health care outside their area of residency (WHO, 2020b).

Palestinians are subject to distinct legal systems, degrees of freedom of movement, and access to medical care based on the kind of Israeli-issued identification card they possess, which varies depending on their area of residency and legal status. Having said so, the 2 million residents of Gaza rely on the occupying power to give exit permits for people in Gaza to receive healthcare outside the Strip (WHO, 2020b). Cancer patients constitute 31% of the total number of patients applying for permits; the largest group of patients referred outside the Strip. A study conducted by the WHO showed that from 2015- 2017, cancer patients who were not granted exit permits or whose permits were delayed were 1.45 times less likely to survive (WHO, 2019d). Over time, there has been a decline in granting patients' permits. In 2019, only 65% of applicants were granted permits. During the COVID-19 pandemic, access to healthcare services was obstructed even further; only 266 permits were issued in September 2020 compared with a monthly average of 1777 permits issued in January and February of the same year (Devi, 2020).

The permit system implemented by Israel imposes restrictions on the mobility of Palestinians within various regions of the occupied Palestinian territory. The aforementioned encompasses the transportation of individuals between the West Bank (inclusive of east Jerusalem) and the Gaza Strip, the entry into east Jerusalem from other

parts of the West Bank, and all transit of Palestinians from the oPt into Israel (encompassing all departures from the Gaza Strip via Erez crossing, regardless of ultimate destination) (WHO, 2020b). As of 2014, the number of categories of permits issued by Israeli authorities to Palestinians had reached 101 (Levinson C., 2011). Israeli-issued permits are required for patients, companions, and health workers to travel. In 2019, the approval rate for permit applications submitted by patient companions from the Gaza Strip was comparatively lower than that of patient applications. Specifically, only 50% of companion applications were approved (WHO, 2020b). Patients are eligible to request the presence of a single companion to accompany them during their healthcare appointments. The presence of family members is particularly crucial for paediatric, geriatric, and critically-ill individuals. In 2019, a significant proportion of permit applications (38%) granted for minors lacked an accompanying parent permit, indicating a decrease from the previous year's figure of 62% of children who were granted permits to travel without their parents (WHO, 2019b). Throughout the year 2019, a total of 70 patients and 76 companions were subjected to security interrogation as a mandatory requirement for the processing of their permit applications by the Israeli authorities. Following their interview, two individuals who were accompanying patients were captured and held in custody by the Israeli authorities (WHO, 2020b).

Most West Bank patients who want admission to hospitals in east Jerusalem and Israel require Israeli-issued licences, although there are a few exceptions. Individuals who fall under the categories of women over 50 years, men over 55 years, and children under the age of 14 years, who are accompanied by an authorised adult companion, are granted an exemption from the requirement of obtaining a permit for travel. This exemption is applicable only if the travel is undertaken during specific times of the day.
According to the WHO, the approval rate for permit applications submitted by health personnel seeking to exit the Gaza Strip is 71%. In the interim, it was found that 89% of permit requests submitted by the WHO on behalf of healthcare personnel seeking entry into the Gaza Strip were granted. The number of exits from the Gaza Strip through Erez by personnel affiliated with humanitarian agencies exceeded 22,000 (WHO, 2020b). The

Palestinian personnel employed in medical facilities situated in East Jerusalem and Israel, who originate from the West Bank outside East Jerusalem and the Gaza Strip, are mandated to obtain permits issued by Israeli authorities to gain entry to their respective workplaces. In 2019, a total of 1518 permit applications were submitted by hospitals located in East Jerusalem, seeking permission for their staff to access their respective workplaces. The majority of these applications, specifically 97%, were granted 6-month permits, while 2% were granted 3-month permits. Only a small percentage, amounting to 1%, were denied (WHO, 2020b).

2.7.1   The role of UNRWA within the Palestinian healthcare system

In the Gaza Strip, a total of 147 primary care clinics are available. The service is primarily provided by the United Nations for the Relief and Works Agency in the Near East (UNRWA) and other non-governmental organisations (World Bank, 2016a) with the Ministry of Health responsible for approximately 34% of primary care clinics (WHO, 2020b). Since its establishment in 1949, UNRWA has been mandated to provide assistance to Palestine refugees in Syria, Lebanon, Jordan, Gaza and the West Bank (Jamal et al., 2022). In Gaza, UNRWA provides primary care through its 22 primary health facilities and provides secondary and tertiary care through a network of contracted hospitals. In addition to providing health and mental health care, UNRWA provides education, relief and social services, microfinance and emergency assistance (Jamal et al., 2022). UNRWA relies almost entirely on voluntary donations (UNRWA, 2022) and has been going through a financial crisis since 2018 (Ager et al., 2018). The COVID-19 pandemic constituted a shock to UNRWA services and the Palestine refugee community. In the context of deteriorating socioeconomic conditions of Gaza, the shock was anticipated to be profound. The unique operating model of UNRWA encompassing health in addition to relief and education services (i.e. as UNRWA addresses social determinants within its regular operations of its programmes) makes it uniquely qualified to look at social determinants as they link to mental health.

2.8 The political sphere: a significant factor that shapes population health

Prior to the mid-1980s, research within the health sector in the oPt predominantly concentrated on the physiological ramifications of conflict on the health of Palestinians. The persistent violations endured by Palestinians have resulted in emotional distress and mental ill-health, which were insufficiently addressed by health practitioners, humanitarian aid providers, and researchers (Giacaman et al., 2011). From the time of the Nakba in 1948 until the latter part of the 1980s, the Palestinian population received assistance in the form of sustenance, housing, and healthcare, yet their psychological and mental health requirements were not acknowledged. A shift in perspective was observed with regard to Israeli military aggression during the initial Intifada (1987–93), as it garnered heightened media coverage. The recognition of the necessity to tackle psychological trauma was acknowledged by international and humanitarian aid agencies, subsequently leading to its prioritisation by said organisations. The medicalization of distress through the exportation of Western approaches led to a proliferation of psychological therapies during the late 1980s and 1990s. The discourse on trauma has enabled Palestinians to shed light on the socio-political circumstances of their existence and the collective trauma that has been inflicted upon them as a result of Israeli military occupation and repression (Punamäki, 1990). The medical-oriented reactions towards trauma have played a role in obscuring the societal and political significance that Palestinians have attached to their shared encounters. Notwithstanding this paradox, several Palestinian factions embraced the trauma discourse as a means of highlighting the anguish, affliction, and other manifestations arising from political subjugation, despite the fact that personalised interventions involving therapy and pharmacotherapy were insufficient in tackling the fundamental origins of persistent collective trauma (Giacaman, 2018).

For an extended period, the Palestinian narrative has been suppressed and deemed invalid and this trend persists to this day. As people who have lived through war, Palestinians have encountered various challenges such as internal displacement, dispossession from homes and lands, dismantling of their social structures, and the

proliferation of terror and violence in their daily lives, even within their own homes (Giacaman, 2018; Sa'di, 2008). Sa'di (2008) argued that for Palestinians, the Nakba itself serves as a source of frustration that continuously reminds them of the injustice that has resulted in their political, socioeconomic, and psychological turmoil (Sa'di, 2008). Giacaman et al added that the Palestinian population is governed not only by the use of physical coercion, but in a climate of ambiguity, uncertainty, insecurity, loss of dignity, and intentional humiliation. These are significant outcomes of prolonged conflict that require recognition and attention beyond the mere provision of aid and support for basic survival needs (Giacaman, 2018). According to Summerfield, individuals who have endured the effects of armed conflict undergo psychological distress in the form of trauma, which manifests as imperceptible wounds or "invisible injuries" that are internal in nature. Injuries of this nature not only significantly impact an individual's ability to cope with and recuperate from traumatic experiences, but they can solely be remedied through sociopolitical measures, the reconstruction of societal frameworks, and the achievement of equity. The practise of characterising the afflictions of war as mental disorders instead of addressing them as social and political determinants of health has raised doubts about its validity and potential harm (Summerfield, 2000). Derek Summerfield makes a distinction between distress and suffering as opposed to psychopathology (Summerfield, 2001), and provides a critical analysis of the framing of the distress experienced during war as a psychological disturbance (Summerfield, 2000). Summerfield underscores that individuals who have experienced trauma as a result of war should not be stigmatised as "mad." Moreover, the aftermath of war should not be viewed as an affliction that solely affects individuals, but rather as a moral and communal issue that necessitates the implementation of justice (Summerfield, 2002).

Giacaman and colleagues advocated for the deconstruction of the prevailing approach of conceptualising population health as detached from any political framework (Giacaman, 2018). According to Giacaman, any debate regarding the health of Palestinians under occupation should take into account Israel's colonial policies and their impact on the economy and the social structure within the oPt (Giacaman, 1989). As per the findings of

Giacaman et al., political factors exert a significant impact on health outcomes and are exclusively responsible for shaping the circumstances under which individuals are born, develop, reside, and age. Consequently, these factors serve as the primary impetus behind the social determinants of health. Acknowledging the impact of political determinants of health is crucial as they can lead to adverse health outcomes such as mortality, morbidity, and injuries. It is imperative to recognise that these determinants have the potential to create social suffering, which may result in unfavourable health consequences, illnesses, and fatality in due course (Giacaman, 2018).

2.9 Overall aim and Research Questions:

There is substantial evidence that people who are economically and socially disadvantaged are at a greater risk for developing mental disorders and other chronic conditions. The overall aim of this thesis was to look at this dynamic interrelationship to identify strategies that could break this vicious cycle. The first study, a systematic review, was conducted prior to COVID-19 pandemic. The research question for the systematic review was the following:

RQ1: What are the social determinants which lead to the progression of NCDs among people with common mental disorders?

- What is the evidence-base surrounding each of these determinants?
- Based on the previous question, which of these determinants should be prioritized for interventions?

The second and third research studies took place after the COVID-19 pandemic. They were organized collaboratively with UNRWA and conducted in the context of Gaza to draw on the experience of refugees living in a chronic situation of social, economic and war-related adversities. Available evidence links the COVID-19 pandemic with worse mental health outcomes. Below is the research question for study 2.

RQ2: How did the pandemic affect the social determinants of mental health of Palestine refugees in Gaza and how did that impact health outcomes? How did UNRWA respond to address the vulnerabilities of the study population?

In this study, I wanted to examine the impact of the pandemic on the social determinants of mental health in an already challenging context, Gaza. In addition, I wanted to explore the interrelationship between common mental disorders and NCDs using a survey however, for reasons explained later in chapter 5, the survey achieved a very modest sample size and can only provide limited insights into this topic.

In the third study, the aim was to look at how UNRWA addressed the social determinants of mental health by looking at UNRWA's MHPSS response provided in Gaza during the pandemic. In addition, this study aimed to look at ways to strengthen this service in preparation for future pandemics. Therefore, the third main research question was the following:

RQ3: How did the three core programmes of UNRWA address the social determinants of health through the MHPSS response provided to Palestine refugees in Gaza in the context of a pandemic?

- What lessons can be identified from this experience of addressing MHPSS needs of other refugee populations going through the current or future pandemics?

Chapter 3

Methodology

The research paradigms are presented in Chapter 3 as philosophical assumptions that serve as the basis for research. Quantitative and qualitative paradigms are presented as two complementary worldviews in a mixed-method research approach. The following sections discuss the philosophical underpinnings of pragmatism as a proposed paradigm for mixed-methods research and explain the essential characteristics of mixed-methods research. I then describe the research design and the various data collection methods utilised in my three-study mixed method research. The first study followed the necessary steps outlined for a systematic review, while the second study employed a convergent parallel mixed approach with a quantitative and qualitative component conducted simultaneously. In the same section, I describe how I integrate quantitative and qualitative data into my analysis. This integration is the distinctive and fundamental component of every mixed methods strategy (Creswell & Clark, 2017). I then conclude by exploring the positionality and reflexivity of the researcher.

3.1 Research paradigms and the longstanding "paradigm war"

The term, "paradigm", was first used by Thomas Kuhn in 1970 to refer to the generalisations, convictions, and ideals held by a group of experts regarding the nature of reality and knowledge (Kuhn, 1970). A paradigm describes the philosophical presumptions or fundamental set of beliefs that serve as the researcher's compass and shape their worldview in social science (Denzin & Lincoln, 2005). According to several scholars (Creswell & Clark, 2017; Lincoln, 1990; Patton, 2002; Rossman & Rallis, 2003), "worldview" is another word for paradigm and is defined as "a way of thinking about and making sense of the complexities of the real world" (Patton, 2002). Each paradigm entails a set of values and morals in research, known as axiology, an understanding of the nature of reality or ontology, and an epistemology or a perspective around how a researcher perceives the world and gains knowledge. In addition, each paradigm encompasses a specific methodology, or means of gaining knowledge, and uses a specific type of

language, also known as rhetoric (Kaushik & Walsh, 2019). The deliberate application of paradigms can provide researchers with a framework to aid in directing their choices throughout the inquiry process (Shannon-Baker, 2016).

The so-called "paradigm war" is a protracted argument between the quantitative and qualitative worldviews. It started in the 1970s and continued on through the 1980s and the 1990s (Hall, 2013; Sale et al., 2002). During the 1980s, groups of scholars belonging to each paradigm asserted that their method was superior to the other. Some of these researchers were "purists," and they maintained that the quantitative and qualitative methods cannot be combined because of the fundamental differences between the two approaches. Some scholars were of the opinion that qualitative and quantitative research are based on fundamentally different philosophical assumptions (Clark & Ivankova, 2016). Because of this notion, it was difficult to justify merging several research approaches within a single study (Johnson & Onwuegbuzie, 2004). This is because combining these two types of research in one study would pose ontological, epistemological and axiological challenges (Bishop, 2015).

Objectivism and positivism are the philosophical cornerstones of the quantitative worldview (Creswell & Creswell, 2017; Ma, 2012). According to the quantitative paradigm, there is a single, independent reality apart from the researcher's subjective impressions. In other words, the phenomenon being studied has no effect on the researcher and the researcher has no effect on the thing being studied. Quantitative studies aim to establish a numerical value for causal relationships. Conversely, the qualitative worldview is founded on subjectivism and interpretivism. Researchers who focus on the qualitative side of the research debate that this is the only reality possible. Findings in value-bound research are co-created by the researcher and the phenomenon under study (Johnson & Onwuegbuzie, 2004; Sale et al., 2002).

The quantitative method is grounded on the quantitative research paradigm, follows a deductive approach, and relies on the systematic collection and analysis of numerical data. It is primarily concerned with putting theories and hypotheses through their paces by investigating the connections between numerical factors. The qualitative approach, on the

other hand, adheres to the qualitative research paradigm and is based on the collection and analysis of data that is unmeasurable or cannot easily be expressed in numbers. It is exploratory and follows an inductive approach that seeks to investigate and comprehend the meanings that individuals or groups ascribe to social phenomena (Antwi & Hamza, 2015; Creswell & Creswell, 2017; Johnson & Christensen, 2019).

3.2 Mixed methods research approach

Beginning in the 1990s, many academics began adopting a novel approach that integrates quantitative and qualitative methods (Johnson & Christensen, 2019; Johnson & Onwuegbuzie, 2004). The mixed methods research approach has been progressively gaining increasing recognition as a third methodological trend over the course of the preceding two decades. This recognition has been continuously growing (Biddle & Schafft, 2015; Ma, 2012). It is no longer the case that the quantitative and qualitative methodologies are seen to be two independent schools of thought that compete with one another. Instead, they signify opposite extremities of a spectrum along which a study can be more quantitative or qualitative. In a sense, this is a sliding scale. The mixed methods research approach can be thought of as existing somewhere on this continuum between the two poles (Creswell & Clark, 2017; Johnson & Onwuegbuzie, 2004). When conducting mixed methods research, a researcher combines qualitative and quantitative approaches (in terms of research design and methods of data collection) in order to conduct one study or a collection of studies that are related to one another. This can be done either simultaneously, in which case both studies, or sections of studies, are carried out at the same time, or sequentially, with one component being done first and then the other (Antwi & Hamza, 2015; Johnson & Christensen, 2019; Ma, 2012). The primary premise of the mixed methods research is that combining quantitative and qualitative approaches provides a more comprehensive grasp of the study subject than employing simply either one of the two types of research (Creswell & Clark, 2017; Molina-Azorin, 2016).

The use of a mixed methods research approach comes with two significant benefits in particular (Sale et al., 2002). The first benefit is referred to as "complementary strengths,"

and it refers to utilising the strengths of one research method to strengthen or support the use of another research method. Researchers who use mixed methods argue that relying solely on quantitative or qualitative approach is a constrained and insufficient way to address many different research problems. Because each method has certain advantages and disadvantages, they ought to be integrated in a way that enhances the quality of the research by acquiring strengths that are not shared by other methods and avoiding flaws that overlap (Johnson & Christensen, 2019). The second benefit is known as "triangulation." Triangulation is a method of cross-validation to improve the reliability, which relates to the accurateness of the data obtained. It also improves credibility, or the believability and trustworthiness of research findings (Noble & Heale, 2019). Reliability and credibility can be enhanced by using different data collection and analysis strategies to learn more about a topic. Results from different methods can be compared using triangulation (Glogowska, 2015; Sale et al., 2002).

On the other hand, adopting the mixed methods research approach presents two key challenges. To begin, the mixed methods research approach is more time-consuming, requires more effort, and is more expensive because it involves at least two stages of research (Molina-Azorin, 2016). Second, in order to be competent in both the quantitative and qualitative types of research, the researcher must develop a wider range of research skills, aptitudes, and experiences. To do this, familiarity with different research methods and tools is essential (Fetters & Molina-Azorin, 2017; Molina-Azorin, 2016). Particularly, this last impediment should be considered as an opportunity to learn and advance professionally. This is due to the fact that many researchers have a propensity to continue utilising the same research methods and avoid acquiring knowledge around new techniques for carrying out research therefore, limiting their ability to address a varied range of research problems (Molina-Azorin, 2016).

3.3 Pragmatism: a supporting paradigm for mixed methods research approach

Pragmatism is a paradigm for research that is founded on the idea that researchers should apply the optimal philosophical or methodological approach for the specific study topic that is being looked into (Tashakkori et al., 1998; Teddlie & Tashakkori, 2003). As a

research paradigm, pragmatism emphasises application and aims to find solutions for problems (Morgan, 2007). Pragmatism does not endorse any one method; rather, it embraces a variety of methods (Maxcy, 2003). Pioneering pragmatists rejected the notion that only one scientific technique could yield "the truth" about the real world (Mertens, 2019). As a result, pragmatism permits methodological fusion and embraces a variety of techniques. In other words, pragmatism seeks to investigate a specific phenomenon using the most suitable method (Feilzer, 2010). It frequently goes hand in hand with mixed methods or multiple methods (Biesta, 2010; Creswell & Clark, 2017; Johnson & Onwuegbuzie, 2004; Maxcy, 2003) where the emphasis is on the outcomes of study and the research questions, instead of the methods used (Creswell & Clark, 2017).

Pragmatism realises that there are multiple realities and no single point of view can cover the entire picture (Patton, 1990). According to Morgan, pragmatic research is "inter-subjective," or both subjective and objective, because it acknowledges the presence of a single reality while also acknowledging that different people will see things differently (Morgan, 2007). According to Johnson and Christensen, mixed research requires an appreciation for both empirical and subjective realities (Johnson & Christensen, 2019). While maintaining objectivity and avoiding influence over the event under study is crucial, it is equally crucial to see things from the perspective of the social actors involved. In addition, according to Saunders et al., pragmatism emphasises that reality is external and multifaceted at the same time (Saunders et al., 2009). According to Hathcout and Meixner, pragmatism has developed an anti-philosophical mentality that avoids addressing concerns of reality while maximising research advantages via the concept of "what works." It is unclear how pragmatism influences the social inquiry process, and this lack of clarity, according to the researchers, has led to a more permissive approach to social research (Hathcoat & Meixner, 2017).

In 2019, Maarouf conceptualised an ontological position for pragmatism that is coherent with the quantitative and the qualitative paradigms (Maarouf, 2019). According to Maarouf, pragmatism should stem from an ontological stance placed in the middle of the objectivity-subjectivity continuum in order to permit pragmatic researchers to view and

employ diverse ontological views. This ontological perspective was conceptualised by the researcher as the "reality cycle". The "reality cycle" is based on the notion that there exists one reality and various views of this reality within the minds of social actors. According to the reality cycle, only one reality occurs in a particular setting and at a particular time. Reality depends on context to exist and continue to exist, hence changing the context modifies reality, and the existence of many contexts necessitates the existence of multiple realities. Nonetheless, social actors see this reality differently, resulting in a continual process consisting of the following steps (Figure 3): People and other social actors have varying perceptions of reality; these perceptions influence the behaviours of humans; interactions among these behaviours build a new context over time; and finally, building a new context gives rise to a new reality. Despite the fact that these context-related changes occur continuously, they do not have an immediate effect on the real world. However, after a considerable amount of time, they produce noticeable changes in reality. As a result, the reality cycle adopts a pragmatic viewpoint based on the assumption that reality is steady most of the time and fluctuates intermittently.

The reality cycle assumptions permit the pragmatic researcher to transition between the two perspectives of a single external reality and the many perceptions of that reality in the minds of social actors, and thus between quantitative and qualitative research approaches and procedures. First, assuming that reality is constant the majority of the time, the reality cycle enables the pragmatist to adopt the one reality perspective and utilise the quantitative approach to evaluate a hypothesis. In this instance, the pragmatic researcher considers the obtained reality as an acceptable generalisation when studied in a specific context and under specific conditions. This is sufficiently pragmatic to coincide with the term "what works" (Maarouf, 2019). Second, because the reality cycle also believes that reality fluctuates over time, the pragmatic researcher recognises that these generalisations will become obsolete when the context changes or when we encounter a new phenomenon. If the researcher has limited background or phenomenon knowledge, it is impossible to test a hypothesis without grasping knowledge around the new context or phenomena since he or she would be unaware of the underlying variables that could be influencing or

explaining the phenomena or setting. In these instances, a pragmatic researcher is permitted to employ a qualitative methodology to investigate the social actor's perceptions of reality. Examining the perceptions of social actors will provide an in-depth understanding of the context that generates reality and enable the researcher to construct a new theory or make significant modifications to the existing one. Once the theory has been formulated, the pragmatic investigator can revert to the one reality stance and test the theory using quantitative research (Maarouf, 2019).

The reality cycle therefore permits both sequential and concurrent or parallel mixed research. First, it explains the rationale for a pragmatic researcher's ability to move between being objective and subjective, thereby supporting sequential mixed research methodologies. Second, it states that quantitative and qualitative methodologies investigate the same phenomenon from two distinct standpoints, either directly by testing a hypothesis defining the phenomenon or indirectly by examining the perspectives of social actors who build the setting containing this phenomenon. It is reasonable to use triangulation and cross-checking when conducting parallel mixed research because both types of methods would be investigating the same topic from different vantage points (Maarouf, 2019).

Figure 3: The Reality Cycle (Maarouf, 2019)

In the current PhD research, I utilised pragmatism because I recognised that there are numerous realities that can be investigated, but I did not wish to be constrained by choosing either a positivist or a constructivist methodology. Instead, I concentrated on the research questions, which were multi-faceted and encompassed many aspects of a social reality. As Covid-19 was a new phenomenon, I wanted to capture the view of different participants to understand the implication of the pandemic on people's lives in Gaza. The statements from UNRWA staff and Gaza residents did not only reflect on their constructions of their lived experiences but also inform on the concrete reality of that experience. By concentrating on the research questions, I was able to acquire new information by collecting data using techniques that were optimally suited to address the research questions at hand, as well as making use of both quantitative and qualitative approaches within the context of a mixed methodologies investigation. My primary question surrounding these several tiers of reality was how these accounts might be analysed and integrated in the most effective manner.

3.4 Research design

The way the research was designed put a great emphasis on the fact that mental health and its social determinants cannot be explained solely through quantitative or qualitative methods alone. This mixed-method research project was aligned with a pragmatic paradigm where I adopted several methods for data collection, including systematic review, semi-structured interviews, survey and group model building (GMB). The figure below provides an overview of the three different studies and type of research approach utilised for each (Figure 4). A full account of methods (sample size, participant selection, recruitment etc.) is provided in the relevant subsequent chapters.

Study 1: A systematic review of the effect of individual, environmental and social factors on the incidence of NCDs among adults with common mental health disorders.

RQ1: What are the social determinants which lead to the progression of NCDs among people with common mental disorders?

- What is the evidence-base surrounding each of these determinants?

- Based on the previous question, which of these determinants should be prioritized for interventions?

Systematic review:

- included quantitative studies only

- utilised narrative analysis

Study 2: Social determinants and mental health of Palestine refugees in Gaza during the COVID-19 pandemic

RQ2: How did the pandemic affect the social determinants of mental health of Palestine refugees in Gaza and how did that impact health outcomes? How did UNRWA respond to address the vulnerabilities of the study population?

Convergent parallel mixed method

- semi-structured interviews

- online survey

Study 3: Strengthening response to pandemics with UNRWA mental health provision: insights through group model building

RQ3: How did the three core programmes of UNRWA address the social determinants of health through the MHPSS response provided to Palestine refugees in Gaza in the context of a pandemic?

- What lessons can be identified from this experience of addressing MHPSS needs of other refugee populations going through the current or future pandemics?

Participatory approach

- group model building workshops

Figure 4: Outline of thesis studies, research questions of each, research design, methods of data collection and analysis utilised

3.4.1   Study 1: Systematic review

The first study was a systematic review that employed collecting quantifiable data around the social determinants of mental health leading to the progression to NCDs among adults with mental health disorders.

The systematic review identified the factors that increase the disease burden amongst adults with common mental health disorders; specifically, the factors that lead to the incidence of common NCDs (cardiovascular diseases, diabetes mellitus, cancers and chronic obstructive pulmonary disease).

A systematic review involves a series of sequentially important steps (Akobeng, 2005; Impellizzeri & Bizzini, 2012), as outlined below. Details on these steps are further explained in Chapter 4.

- Step 1: Formulating the examination question. Refer to section 4.2. Methods, page 63.
- Step 2: Listing the inclusion criteria for studies. Refer to section 4.2.1 Inclusion and exclusion criteria, page 63.
- Step 3: Conducting an exhaustive search for studies that meet the eligibility requirements. Refer to section 4.2.2 Search criteria, page: 65.
- Step 4: Identifying and selecting pertinent studies. Refer to section 4.2.3 Study selection, page: 66.
- Step 5: Extracting data. The form of data extraction is provided in Appendix 3, page 265.
- Step 6: Synthesizing results. Refer to section 4.2.5 Synthesis, page 66.

Before beginning a systematic review, a well-stated research question and a well-written research protocol are required, as is the case with other research study designs. Few researchers contend that a systematic review employs a mixed-methods strategy. Their argument is that defining research questions and applying inclusion criteria to specific studies, in order to decide whether or not to include them, is a deductive approach to

knowledge generation. Subsequently, an inductive method is utilised as knowledge is derived from observations in the chosen studies (Hammami, 2019).

The study was informed by relevant methodological literature on systematic reviewing following the CRD's guidance for undertaking reviews in health care (Center for Review and Dissemination, 2009). Also, it was reported according to the PRISMA systematic review checklist (Liberati et al., 2009; Moher et al., 2009; Page et al., 2021), the completed version of which is in Appendix 1. This review was registered in November 2019 with PROSPERO: CRD42019157800.

3.4.2   Study 2: A cross-sectional study utilising a convergent parallel mixed approach

Cross-sectional research examines features of social life at a single point in time. It is described as taking a "snapshot" of group of people around topics such as demographic aspects of a population, individual attributes, values, beliefs, behaviours, social interactions (Blaikie, 2010; Wang & Cheng, 2020). Cross-sectional studies are relatively quick and inexpensive to carry out, as opposed to longitudinal investigations, which are often costly in terms of maintaining respondent contact, keeping respondents engaged and motivated over an extended period of time (Payne & Payne, 2004; Wang & Cheng, 2020).

Initially, the research team intended to perform a longitudinal study in which data is gathered over a 10-week period to follow changes (e.g., in wellbeing index, food insecurity score, etc.), but due to difficulties in participant recruitment, we decided to collect data over a 6-week period. The cross-sectional design was eventually chosen and data was collected at one point in time only. It was both practical and theoretically justifiable. Despite this, the survey response rate was quite low.

Therefore, a cross-sectional study was carried out in Gaza where semi-structured interviews and a survey were rolled out. The aim of this project was to explore the impact of the COVID-19 pandemic on the social determinants of mental health and how that affected health outcomes of Palestine refugees living in two overcrowded camps in Gaza namely, Jabalia and Rafah. The survey aimed to triangulate some of the qualitative findings related to the interplay of the social determinants and the acceptability of

UNRWA measures. In addition, the survey aimed to explore any differences seen in mental health and social determinants between adult refugees with and without a non-communicable disease.

Study 2 was a mixed methods research study by itself employing quantitative and qualitative data collection methods. Using the two forms of the "convergent parallel mixed method" (Creswell & Clark, 2017), I simultaneously collected quantitative and qualitative data, (QUAL + QUANT), for the objective of integrating and comparing these two data sources in order to obtain a full understanding of the impact of COVID-19 pandemic on mental health and the stressors experienced by Palestine refugees in Gaza during this health crisis. This method involves gathering distinct but complementary data on the same phenomenon (Onwuegbuzie & Collins, 2007). Data analyses are also performed concurrently. The outcomes of the qualitative and quantitative components are then converged by comparing and contrasting the data in order to arrive at a unified interpretive framework. Therefore, this design enables researchers to validate data by converging the QUAN and QUAL results. As mentioned earlier, two forms of convergent parallel mixed method were utilised. First, I utilised the "concurrent triangulation design" (Barnes, 2019) to compare qualitative and quantitative data to look for congruent results. In other words, the purpose of this step is to determine whether the themes found during the collection of qualitative data agree with the statistical findings of the study that was conducted using quantitative data. Second, I wanted to use the "concurrent nested design" (Barnes, 2019) for the purpose of stratifying the data between participants having NCD and those without to explore any differences seen in mental health, and the social determinants of mental health, between the two groups. However, due to the low response rate of the entire survey, no participants with NCDs were recruited making the intended comparison impossible. In fact, the low response rate for the survey meant that data could not be generalisable and therefore, no inferences could be made from the quantitative data. Further explanation is provided in Chapter 5 where study 2 is presented.

3.4.3 Study 3: An exploratory study utilising participatory technique using group model building

In study 3, I adopted a participatory approach using a group model building (GMB) technique for data collection with UNRWA staff in Gaza. GMB allows to capture the multiple perspectives on a problem of diverse individuals which in turn determine their actions and behaviours within a bounded system. In this study, I focused on the UNRWA system which caters to the needs of the Palestine refugees in Gaza during COVID-19 pandemic. The data collected within this study were all qualitative.

An interactive method, "participatory approaches" often involve exercises that produce visual data that can then be used to spark more conversation and introspection through the use of questions. Participatory approaches that generate visual data for this purpose include, but are not limited to, the following: drawing, diagramming, mapping, photography, and the creation of video footage (Davidson, 2017; Gifford et al., 2007). The goal of a participatory research approach is to inspire change for and alongside the people who take part in the study (Pain & Francis, 2003).

3.5 Data collection methods

3.5.1 Semi-structured interviews

The first method of data collection utilised in this PhD research was semi-structured interviews, which were employed with UNRWA staff and adult Palestine refugees in Gaza. More details on participant characteristics, recruitment and data collection are elaborated later in Chapter 5. In qualitative research, semi-structured in-depth interviews are frequently employed and are the most prevalent source of qualitative data in health services research (DeJonckheere & Vaughn, 2019). When a researcher needs to: (1) collect qualitative, open-ended data; (2) probe the participants' thoughts, feelings, and opinions about a topic; and (3) dive deep into personal and, at times, sensitive topics, semi-structured interviews are an appropriate data collection approach.(DeJonckheere & Vaughn, 2019). As defined by DiCicco-Bloom and Crabtree, semi-structured interviews consist of a set of predefined open-ended questions, with additional questions arising from

the discourse between the interviewer and the respondent or interviewees. They are conducted with the objective of gathering information in order to contribute to a body of knowledge that is conceptual and theoretical, and that is founded on the meanings that life experiences carry for the interviewers (DiCicco-Bloom & Crabtree, 2006). In the course of a semi-structured interview, the researcher makes an effort to comprehend the world from the perspective of the interviewees, to decipher the significance of the events that people go through, and to expose their lived world before turning to scientific explanations. This is done in order to collect descriptions of the interviewee's life-world in relation to their interpretations of the meanings of the described phenomena (Kvale, 1996). Semi-structured interviews can also be used in a qualitative phase of mixed-methods research to explore new concepts to produce hypotheses or to explain the outcomes of a quantitative phase that tests hypotheses.

As a result of these characteristics and the nature of my research project, interviewing was deemed to be an appropriate method to facilitate an interactive dialogue between the participants and I, the researcher, in order to investigate pertinent themes in a descriptive and in-depth manner (Rubin & Rubin, 2005). I chose to do semi-structured interviews because my epistemological and ontological positions suggest that people's experiences and understandings are important parts of social reality and because interviews are a good way to get data by hearing what research participants say and how they say it. On the other hand, semi-structured interviews were preferred over structured interviews because a fixed structure or a set of questions developed ahead of time by the interviewer lacks the flexibility, sensitivity to context, and particularity that is needed to hear how our respondents understand and experience the social world (Bauman et al., 2002).

3.5.2   Survey

Sapsford defines a survey as a research method for collecting information systematically to describe a population and, in general, to be able to draw inferences from their responses (Sapsford, 2006). The primary purpose of surveys is to count and describe populations. In comparison to other qualitative research methodologies, the survey method is typically regarded as completely quantitative and positivistic, as well as dry and unimaginative (De

Vaus, 2002). However, De Vaus (2013) argues that this method of separating quantitative and qualitative research is deceptive. Rather than focusing on the process of data collection and data analysis, the researcher recommends distinguishing between research approaches that yield structured and unstructured data sets (De Vaus, 2013). Thus, what distinguishes a survey from other data collection methods is the degree of standardisation and consistency in the questions asked and the general approach to research (Sapsford, 2006). Consequently, despite the fact that social surveys often collect quantitative data, when responses are rated numerically, they can also capture qualitative data using open-ended questions (Payne & Payne, 2004; Ponto, 2015). Surveys can be self-completed or administered by a professional either face-to-face or over the phone. They can be in paper form, or delivered to the participants electronically. Although practical in many instances yet, conducting an online survey runs the risk of excluding participants who do not have internet access (Check & Schutt, 2011). Utilising questionnaires or utilising secondary data are all viable methods for collecting survey data (De Vaus, 2013). The survey method carries the risk of overlooking the significance of human perception (De Vaus & David A, 1996). This implies that study participants are seen as subjects who should merely respond to the interviewer's questions as they are posed.

3.5.3 Group model building

Group model building (GMB) is a participatory technique in which a group of professionals, each of whom has their own unique perspective on the operation of a system, come together to develop a conceptual model depicting the key dynamics that have an effect on the functioning of the system over time. GMB has a long history of use in operational research (Gooyert et al., 2013), and it is particularly suited to the identification of constraints to implementation and intervention design. The method is increasingly being used in health research (Atkinson et al., 2015; Lembani et al., 2018; Muttalib et al., 2021). The fact that the behaviour of the system evolves as a result of either balancing or reinforcing loops is an essential component of system dynamics. Sterman defines reinforcing loops as those that drive change while simultaneously promoting

disequilibrium in a system, whereas balancing loops are those that work to prevent change from occurring (J Sterman, 2000).

It is asserted that group model-building produces a number of benefits for individuals involved in strategic decision-making. First, it is believed to improve team learning and create a shared understanding of the situation facing the group (Lane, 1992; Senge, 1990). Second, it is asserted that models are effective communication tools (Meadows & Robinson, 1985). They compel individuals to articulate their ideas and opinions precisely and discourage group members from contributing with a large degree of ambiguity (Vennix, 1994). The third advantage of group model development is that it generates consensus. Research has shown that early consensus and agreement seeking can have negative consequences (Hirokawa, 1985; Hirokawa & Rost, 1992). On the other hand, consensus, following careful study of the problem and available alternatives, is a highly effective method for making decisions, as it typically requires the participants' commitment to the decision (Schein, 1969).

Over two consecutive days in April 2022, I carried out two Group Model Building workshops with UNRWA staff in Gaza and the Headquarters in Jordan. Inspired by previous research, that I was personally involved with (Jamal et al., 2020; Jamal et al., 2022), a list of participatory activities was selected to answer my current research questions.

3.6 Data analysis

In this section, I give an overview of the analyses conducted for each study. More details are provided in the relevant chapters.

Systematic review: This systematic review included numerous sources of heterogeneity. The included studies employed diverse methods for assessing mental disorders, and their results were reported in different ways (i.e. Hazard Ratio, Relative Risk, and Coefficients etc.). In addition, there was some variation between studies in measuring the impact of particular factors. In some research, the effects of smoking were evaluated based on the duration of smoking, whereas in others, the quantity of cigarettes smoked each day was

considered. For these reasons, I conducted a qualitative narrative analysis rather than a meta-analysis to synthesize the results. According to Sharma et al., a narrative synthesis technique acknowledges that different theoretical foundations and paradigmatic bases for investigations may exist in huge data sets. As a result, once the data is properly gathered and categorised, a narrative synthesis is created for each dimension of this complex pool of information (Sharma et al., 2015). In the narrative analysis of study 1, I investigated the similarities and differences between studies of similar health outcomes, exploring the relationships between the social determinants and the incidence of the respective NCDs, while evaluating of the strength of the evidence. The aim of the resulting knowledge was intended to be used to inform practice and policy.

Survey: Using version 23 of the SPSS statistical software (IBM Corp., 2015), I determined the descriptive statistics of the demographic characteristics of participants, food security items, wellbeing index items, and other stressors for all survey items by calculating the mean and standard deviations for all continuous data and tabulating the count data for discrete response items. Due to the low response rate and inability to generate inferences, bivariate analysis was thought to be unnecessary. Results could not be generalised. Rather, they may shed light on connections that need additional exploration in future studies.

Semi-structured interview: Interview data were inductively analysed. The objective of an inductive method to data analysis is to allow conclusions to emerge from recurrent, dominant, or noteworthy themes present in raw data (Thomas, 2006). It is usually believed that the purest form of the inductive approach is the grounded theory technique, which focuses on developing theories by constructing inductive analysis from collected data (Charmaz, 2006). Thus, my method of analysis consisted of attempting to construct the research's findings from the acquired data, which is ideal when employing an inductive strategy. However, my approach to data analysis was not as strictly inductive as grounded theory. A completely inductive method of data analysis, such as grounded theory, necessitates the use of theoretical sampling. This indicates that the researcher gathers, codes, and analyses his data and decides what data to acquire next and where to locate it in order to construct his theory as it arises (Glaser et al., 1968) in a process in which data

collection and data analysis occur simultaneously (Heydarian, 2016). This would have been ideal for my research, as well as any inductive approach, but the time constraints of the fieldwork, as well as the fact that the data generated from an existing research study between QMU and UNRWA, prevented me from implementing it. Instead, the data analysis was conducted entirely after the fieldwork ended. In addition, my coding process was not purely inductive, in the sense that I did not approach it from a neutral and objective point of view, but instead followed the domains and determinants presented in the conceptual framework on Social and Cultural Determinants of Mental Disorders and the Sustainable Development Goals (Patel et al., 2018).

Using a combination of inductive and deductive approaches, data were analysed via thematic content analysis. The analysis of interview data was conducted according to the steps outlined:

- Acquainting oneself with the dataset: This phase entailed reading and rereading the transcripts, as well as returning to the original audio recordings on occasion. This phase aimed to immerse and familiarise oneself with the information offered in the interviews.

- Coding of the interviews: Interviews were submitted to Dedoose Version 7.0.23 for analysis and coding (SocioCultural Research Consultants, 2016). I coded the interviews and engaged in multiple discussions with the QMU research team to finalise the coding tree and add new codes as necessary. The codes were created to address the components of the conceptual framework on Social and Cultural Determinants of Mental Disorders and the Sustainable Development Goals (Patel et al., 2018). To answer the second study question regarding UNRWA's strategies, a new code and subcodes were added. The techniques of UNRWA were extracted using an inductive approach.

- Generating themes and presenting the analytic narrative: I began by compiling relevant codes and generating initial themes based on them. I then began reviewing the generated themes, searching for patterns that overlap, and weaving the narrative together such that the final list of recognised themes "tells the story of the data. This entire process was

iterative, as I went back and forth to the raw data to gain a deeper understanding and to compile extracts that demonstrate the provided ideas.

Triangulation, complementarity and expansion were not achievable between interview and survey data with such a small sample size in the quantitative component; however, the survey did show some trends that may warrant further exploration.

Group model building: Workshops facilitated the collection of a Reference Mode, audio recordings, and a concept model with casual loop diagrams (CLD) that summarised participants' perceptions of MHPSS service delivery during the pandemic, including addressing the MHPSS needs of vulnerable groups such as patients with co-morbid NCD conditions, the capacity to meet community and patient needs, and readiness for future pandemics.

These materials underwent iterative analyses. I, the facilitator, listened to workshop recordings and transcribed these recordings in order to extract quotes and immerse myself even further in the data obtained. The outcomes of the workshops were organised in accordance with the domains of the UNRWA MHPSS framework (UNRWA, 2017). In fact, the UNRWA MHPSS framework was used to understand whether and how the UNRWA system's behaviour during the pandemic was in-line with the service standard set out.

Overarching analysis: The three studies' data were triangulated to identify insights on mental health and the need to address the social determinants of mental health in order to promote health equity, improve health outcomes, and address the growing global burden of NCD diseases. In addition, studies regarding the impact of the pandemic on social determinants were compared to current literature to determine how this impacts health outcomes, the achievement of SDG goals, and emergency preparedness for future pandemics.

3.7 Researcher's positionality

As a researcher coming from Lebanon who lived in the Middle East her entire life, I find myself greatly immersed in a context similar to that of my research participants.

Experiencing the Israeli aggression early on in my childhood, my school was few kilometres away from Ein El-Hilweh camp, one of the largest Palestinian camps in Lebanon. With Israeli aircrafts flying over my school, hiding in the school shelter was something common. Being in a school that is in close proximity to a Palestinian camp, it was not uncommon to have school friends who were Palestinians themselves. My past experience has therefore created sympathy with Palestinians and allowed me to experience first-hand a fraction of their struggles. This is not to forget that during my lifetime, I have witnessed at least three major wars by Israeli forces against my country. For the above reasons, I feel I have established this sympathy towards Palestinians and their right-to-return case. Also, living in a country that experienced a civil war in which Palestinian guerrilla fighters played a role, I have witnessed numerous instances in which the increasing focus on Palestinians, and refugees in general, is frequently fuelled by unfavourable preconceptions and negative stereotypes. As a result, I have approached my research with a concern for social justice, focusing on the difficulties these individuals face. In 2017, a round table session at the European Public Health Conference asserted that public health should not be only a technical discipline, but a moral endeavour centred on principles such as justice, interdependence, and solidarity. Worldwide, rising disparities, escalating violence and divisiveness, climate change, and other challenges encountered underscore the need for public health practitioners to become explicitly conscious of their discipline's basic ideals and incorporate them into their practice (Faculty of Public Health and European Public Health Association, 2017).

Since 2016, I was involved in research studies on the UNRWA health system in Lebanon, Jordan and Syria. This work experience familiarized me with the UNRWA system and with the staff at UNRWA. Conducting in-depth interviews with various staff members in different departments and working at different levels (i.e., managers vs clinical staff), deepened my understanding of the Palestinian situation in other countries and of how UNRWA operates and the dynamics between various staff categories. It also facilitated the communication with UNRWA management team and opened doors for me to conduct the current research. Through my personal experience, I have observed that the perception

of beneficiaries of UNRWA varies across different countries. In previous research, the data gathered from UNRWA personnel in Syria indicated that prior to the onset of the Syrian conflict in 2011, the Palestinian population there did not heavily depend on UNRWA services. Prior to 2011, they were granted access to health services provided by the government. With the onset of the Syrian conflict, Palestine refugees in Syria had to utilise UNRWA services which, at times, they found lacking compared to what they had received from the Syrian government previously. This observation indicates that UNRWA personnel are capable of being self-critical when necessary. The reason for this is that the UNRWA personnel have an interest in improving the services as they too are classified as refugees, are sharing similar living conditions as any other Palestinian in that particular context, and thus are entitled to receive the same benefits from UNRWA as any other individual who falls under this category. The aforementioned circumstance generally enhances the credibility of their feedback, as they possess the dual role of both a provider and a beneficiary simultaneously. In contrast to the situation in Syria, the Palestinian population residing in Gaza is able to avail themselves of the healthcare services offered by the Palestinian Ministry of Health, thereby enabling them to make a comparative analysis of the services provided by UNRWA. As previously explained in Chapter 2, the Ministry of Health in Palestine is significantly under-resourced and inadequately funded. Hence, it was unsurprising to discover that the Palestinians of Gaza hold a favourable view towards the aid and assistance extended by UNRWA.

The collaborative research that took place between QMU and UNRWA-Gaza facilitated the establishment of crucial professional connections with notable personnel at UNRWA Gaza. This enabled the possibility of carrying out remote interviews with potential participants and made it possible to promptly mitigate any challenges with data collection that arose at the time. Even in the absence of any travel restrictions, Gaza remains a besieged area and as a Lebanese myself, getting physical access to this geographical region is particularly challenging. Therefore, when such an opportunity came, it was very tempting to utilise it to gain access and be able to collect research information from this part of the world. It should be noted though that a professional relationship was not

established with all interviewees, nor was there prior acquaintance with each interviewed individual. To mitigate any potential bias, the key-informant interview guide was pretested with UNRWA personnel who were involved in the research team. Consequently, the information obtained from these interviews was not included in the data analysis.

In addition to that, my previous experience as a clinical dietitian who worked in Doha affected how I personally view people's eating habits. As a clinical dietitian, I was taught about different foods or food components and how they relate to diseases. For example, eating a high sugar diet is associated with high triglycerides. My personal experience, however, taught me that adopting a particular lifestyle or eating habits has, in several instances, a mental health component. Personally, I observed throughout my clinical practice that mental health could be an underlying reason for why people adopt certain eating habits. This is something I experienced with various clients who used to attend the clinic to talk about their own problems and how their eating habits were influenced by what they were going through at the time. Therefore, providing dietary advice, such as limiting the intake of simple sugars, was not enough for some clients who either found comfort, for example, in eating high-sugar foods or found them cheaper than alternative healthier snacks. This is a simple illustration of how social determinants, in this case the financial inaccessibility of healthy food, could be the reason behind shaping the unhealthy eating behaviour. In the current research, I wanted to explore more into these underlying causes and how they relate to people's behaviours, choices and therefore, health outcomes.

This experience allows me to relate to the topic that I have chosen, mental health, social determinants and the participants themselves.

3.8 Researcher's Reflexivity

I honed my skills as a dietitian in the early 2000s and received an MSc degree with a thesis that relied completely on quantitative data. In health and nutrition in general, positivist scientific reasoning dominated at the time. My clinical practice however, reconstructed my positivist "upbringing" as I shifted from positivism to a more nuanced viewpoint in which I recognised the significance of people's experiences and perceptions and how these

might influence their behaviours and, eventually, their reality. Having said that, I still acknowledge the added value of the quantitative method in terms of generalizability and hypothesis testing. For this reason, I incorporated a survey within my data collection tools so as to understand the full picture of what Gazans were going through, to compare and contrast quantitative and qualitative findings, and to obtain findings that represent the study population.

When conducting the semi-structured interviews and the GMB workshop, I regarded my subjectivity to be a resource (Gough & Madill, 2012). It influenced how I responded to participants' explicit and implicit signs of concern and distress during the interviews and the GMB workshop. This was especially the case when participants were elaborating on the life situation in Gaza and the daily struggles people encounter there. I listened to participants' accounts with empathy and genuine curiosity, allowing elements of my own experience, related to the Israeli aggression that I personally experienced in Lebanon and the hardships encountered by marginalised groups in my country to connect with theirs. I believe this was extremely helpful in building trust and rapport with the participants as they felt they were talking to someone that, literally and metaphorically, speaks their language.

I tried to interpret the qualitative data rather than just describe it, which always calls for acknowledging participant and researcher subjectivity. In my opinion, we can only understand another person's story when we can connect it to our own subjective experience. The concept of "shared reality" is what gives meaning to our communication activities and makes them understandable (Ma, 2012). Therefore, it is helpful to be mindful of one's unique experiences and presumptions as to not skew the findings, rather to add new insights and uncover new aspects of this shared reality. Quantitative findings that are representative would be ideal as they reflect the real picture of what the study population is going through. As the survey was not successful, I cannot claim that my findings really reflect the real situation of the people of Gaza during the pandemic.

Chapter 4

Study 1: A systematic review identifying social determinants that link common mental disorders to the incidence of NCDs

This chapter intends to inform interventions for high-risk populations to prevent development of non-communicable diseases. It presents a systematic review of relevant quantitative research identifying social determinants linking common mental disorders in adults to the occurrence of the four major non-communicable diseases, namely: Cancers, Cardiovascular diseases (CVD), Diabetes Mellitus, Chronic Obstructive Pulmonary Disease (COPD).

4.1 Introduction

Worldwide, about 74% of all deaths are attributed to non-communicable diseases (NCDs), of which more than three-quarters occur in low- and middle-income countries (WHO, 2022a). NCD prevention and control has mainly focused on the four conditions responsible for the greatest number of deaths. Known as the "Big Four", cardiovascular diseases, followed by cancers, chronic respiratory diseases and diabetes comprise the highest rates of mortality as they contribute to 33.3 million deaths globally. These NCDs are all driven by modifiable behaviours, namely: unhealthy diets, physical inactivity, tobacco smoking and harmful use of alcohol (WHO, 2022b). These behavioural determinants were widely recognised as the main entry point for the prevention and control of NCDs (WHO, 2018d).

The link between mental disorders and non-communicable diseases, discussed earlier in chapter 2, prompted demands to include common mental disorders, like depression and anxiety, within the umbrella of non-communicable diseases (Ngo et al., 2013; Prince et al., 2007). The WHO's Global Action Plan (2013–20), to reduce the global burden of non-communicable illnesses and preventable mortality, include mental disorder prevention and control objectives (WHO, 2013). However, mental and physical disease prevention

initiatives remain essentially separate and independent from one another (O'Neil et al., 2015).

The current systematic review aims to address the link between mental illness and non-communicable diseases by exploring individual, social and environmental determinants associated with both conditions. Considering these overlapping determinants may be a practical, effective way of providing integrated prevention programming to reduce the burden of these conditions and reduce the associated disability.

4.2 Methods

This review was conducted in accordance with a published protocol prepared by the authors and published on Prospero (Jamal et al., 2019) to answer the research question below:

"What are the individual, social and environmental determinants that lead to the development of NCDs (CVD, cancers, respiratory diseases (including COPD) and diabetes mellitus) among patients with common mental health disorders (depression and anxiety disorders including PTSD)?"

The review follows the latest PRISMA 2020 reporting guidelines (Page et al., 2021).

4.2.1 Inclusion and exclusion criteria

Articles that met specific study design, population, exposure, control and outcome criteria were eligible for inclusion in this review (Table 1). This review included observational studies (case-control, retrospective and prospective cohort studies) only. Cross-sectional studies were excluded because, unlike cohort studies, they do not measure the incidence of disease and unlike case-control studies, cannot measure the effect of multiple exposures on disease outcome (Thiese, 2014). In the included studies, common mental disorders were identified either via an established clinician-administered instrument (e.g. SCID, CIDI), clinical records, and/or using a validated self-report instrument (e.g. PHQ-9, GAD-7, HADS). The incidence of the NCD conditions, on the other hand, was based on either self-report, clinical or biochemical assessments.

We excluded studies that involve participants with comorbid NCDs given NCDs are the outcome and each could independently be linked to the incidence of the other. For example, studies have shown that there are biological mechanisms associated with Diabetes Mellitus (DM) that increase the risk for CVD amongst diabetic patients (Leon & Maddox, 2015). Also, we excluded studies that did not involve participants who have common mental disorders, namely depression and/or anxiety disorders. Studies reporting on the incidence of NCDs without reporting the exposure (individual, social and/or environmental determinants) leading to the development of NCDs were excluded.

Table 1: Title and Abstract Screening Tool

	Inclusion criteria	Exclusion criteria
Study design	Observational studies (Cohort studies and Case-control studies)	Cross-sectional studies
		Experimental studies
		Interviews/ focus groups/ case studies
		Review articles and meta-analysis
		Reports (Conference abstracts, Study registrations, Study protocol papers, Result reports, Policy briefs, Book chapters, Dissertations and theses, Editorials, Commentaries and Website content)
Participants	Participants ≥ 18 years old	Participants < 18 years old
	With common MH problem	Participants with co-morbid MH and NCD conditions, Participants with pre-existing NCD, Participants with severe MH illness
Exposure	Reports at least one outcome of the following:	Reports on any of these: Quality of life, Satisfaction with life, Happiness
	- Individual determinants such as (BMI and/or dietary intake, Physical inactivity, Drug abuse,	

	Harmful use of alcohol, Low self-esteem, Criminal/anti-social behaviour, Treatment abiding/ seeking behaviour,	
	- Social circumstances such as (Bereavement/loneliness, Socioeconomic status/position, Family/ neighbourhood cohesion or support, Marital status, Education level, Exposure to violence/abuse, Low income/ debt/ poverty, Unemployment, Work stress.	
	- Environmental factors such as (Poor civic amenities, Injustice, Discrimination/ social inequalities, Gender inequalities, Exposure to war or disaster)	
Control	Participants who do not develop one of the four NCDs	Control group does not exist
Outcome	Incidence of common NCDs (diabetes, cancers, COPD and CVD)	Incidence of illnesses other than common NCDs
		Co-morbidity of NCDs with MH

4.2.2   Search criteria

Our searches were restricted to English. There were no geographical restrictions and no time frame limits. One author (ZJ) searched Medline, PsychINFO, Embase and CINAHL from database inception to August 2019 using a search strategy developed and validated with the support of a Specialist Librarian. We searched each database by combining four different concepts related to non-communicable diseases along with three different concepts of mental health disorders, namely: "cardiovascular diseases", "diabetes", "cancers", "chronic obstructive pulmonary disease" with "anxiety", "depression", "post-traumatic stress disorder". The search encompassed the combination of various terms for each concept and included both free text-words and MeSH (Medical Subject Headings)

terms, utilising relevant search options corresponding to each resource. A sample of the electronic search strategy is available in Appendix 2.

4.2.3 Study selection

ZJ imported the retrieved studies into Endnote to remove duplicates. After removing all duplicates, references were then imported to excel for title and abstract screening. Another reviewer (MR) screened 10% of the titles and abstracts of all potentially eligible articles using a checklist for inclusion and exclusion criteria (Table 1). A list of full text articles was developed. A third reviewer (AN) was available for mediation throughout the full-text screening and the data extraction phase. Disagreements were resolved via group consensus.

4.2.4 Data extraction

For each article, the first author (ZJ) extracted all data according to a pre-specified template (Appendix 3). The main variables covered relate to: study identifiers, context of the study and aims, data collection details, measurement of main outcome and important findings.

4.2.5 Synthesis

The process of the synthesis was guided by the SWiM guidelines (Campbell et al., 2020). For initial syntheses of the studies, they were grouped based on the NCD outcome (Tables 4, 6, 8 and 10). Based on individual study appraisal of quality, studies were further grouped into categories of high, medium and low quality. First, ZJ described all available evidence, regardless of quality of evidence, then ZJ synthesized information from high-quality studies only in order to provide the strongest conclusions.

Second, ZJ presented an overview of all relevant exposures (the determinants) across all outcomes. Further, ZJ commented on studies that are of high quality only.

ZJ chose to present a narrative synthesis, instead of a meta-analysis, to explain the association between the different determinants in relation to the incidence of the NCD outcome. The reason a narrative synthesis was chosen is due to the diverse nature of the

NCD outcomes and the numerous determinants that were studied. Other sources of heterogeneity are described below.

4.2.6   Heterogeneity

Several sources of heterogeneity are present within this systematic review. Studies included utilised different tools for assessing mental disorders and the results themselves are presented differently (i.e. Hazard Ratio, Relative Risk, and Coefficients etc.). Also, there is some between-study variance in terms of assessing the impact of certain determinants. For example, the impact of smoking was assessed in some studies based on the duration of smoking while in others on the number of cigarettes smoked per day.

4.2.7   Quality assessment

The Critical Appraisal Skills Programme (CASP) checklists for assessing the quality of cohort (Critical Appraisal Skills Programme, 2018b) and case-control studies (Critical Appraisal Skills Programme, 2018a) were used. The CASP checklists, devised for use in health-related research, were used for quality assessment of papers as "high", "medium" or "low" quality. CASP is commonly used in qualitative evidence syntheses and is endorsed by Cochrane (Noyes et al., 2018). All articles were assessed for quality by (ZJ) and another reviewer (AN) was available for mediation to arrive at a consensus through discussion using the CASP checklists.

4.3 Results

The study selection process is summarized in Figure 5, following PRISMA reporting guidelines (Page et al., 2021). More than 19,000 studies were found in the initial search. A total of 11 studies from 3 countries were included in the final review, with the majority (n=9) conducted in the United States. All studies were longitudinal prospective studies presenting outcomes for a total of 71,896 people. Four studies determined the association between depression and cancer, two studies depression with CVD, one study depression with diabetes and another depression with asthma. The association between PTSD and asthma was assessed in one study. One study determined the association between

depression and anxiety together with diabetes and another with CVD. A summary of the included studies is presented in Table-2.
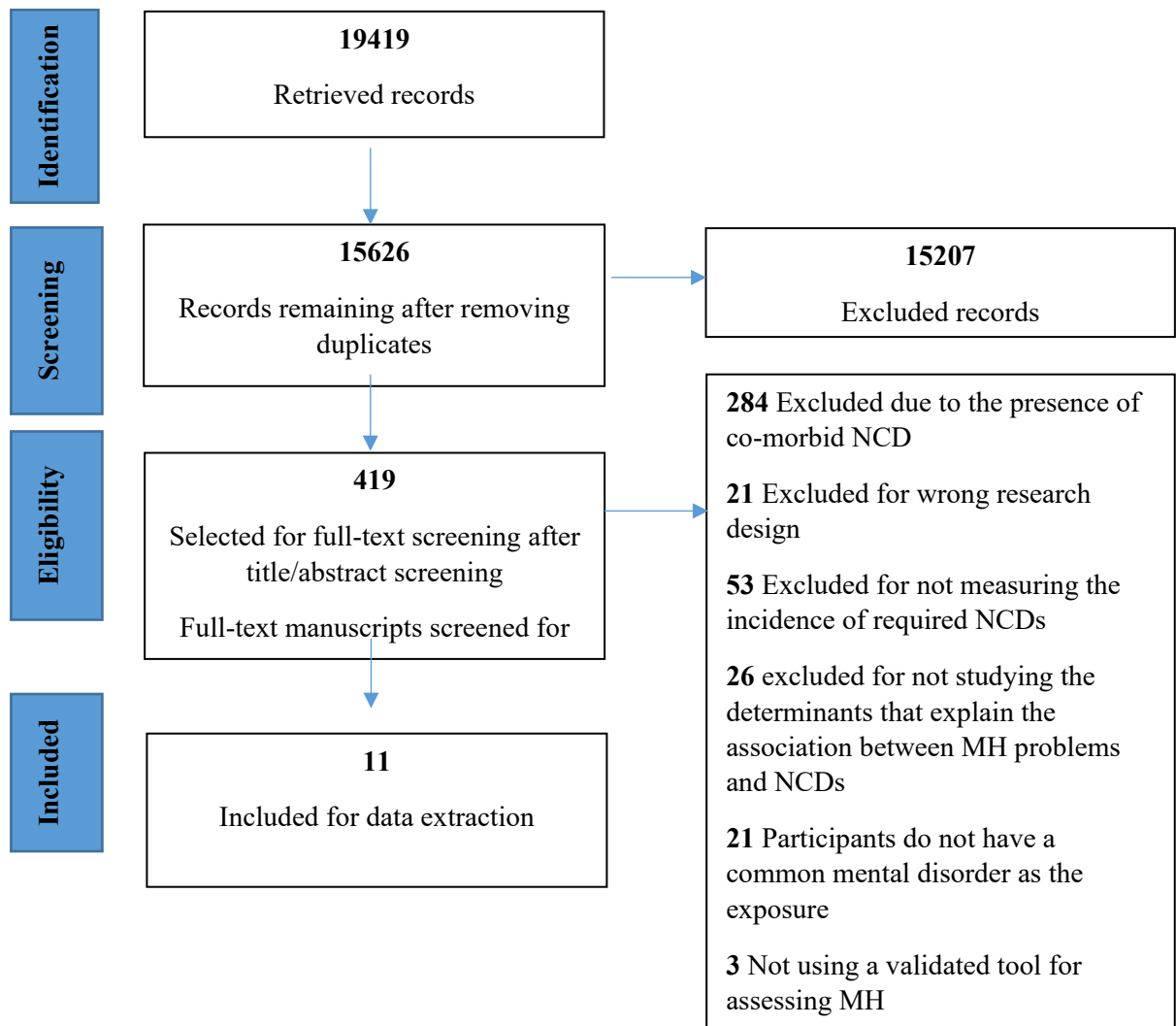
Figure 5: PRISMA flow diagram

Table 2: Description of study characteristics

Study characteristic	No. studies (N=11)
Countries	
USA	9
Australia	1
Hungary	1
Study design	
Prospective longitudinal cohort	11
Sample size	
< 1000	1
1000-3000	5
≥ 3000	5
Common mental disorder (CMD)	
Depression	8
Anxiety	1
Both	2
CMD screening tool	
Patient Health Questionnaire (PHQ-9)	1
Beck's Depression Inventory (BDI-S)	1
Diagnostic Interview Schedule (DIS/DSM-III)	2
Centre for Epidemiological Studies Depression Scale (CES-D)	3
PTSD Checklist (PCL-C)	2
Minnesota Multiphasic Personality Inventory (MMPI)	1
Structured Clinical Interview for DSM (SCID-I/NP)	1
General Wellbeing Schedule	1
Non-communicable disease	
Diabetes Mellitus	2
Cardiovascular disease	3
Cancer	4
COPD	0
(ASTHMA=2)	
CASP quality assessment	
High	3
Medium	4
Low	4

4.3.1   Association between CMD and incident non-communicable diseases mediated by individual, social and environmental factors

The following is a summary of the effect of different individual, social and environmental factors and their contribution in linking common mental health disorders with the incidence of common NCDs.

- <u>Cancer</u>

<u>Evidence linking social determinants to Cancer incidence</u>: Table 3 summarizes evidence grouped per determinant. It suggests that the determinants that showed a significant association were all associated with an increase in cancer incidence; however, one medium-quality study and one high-quality study were available. The latter suggested that Age may be associated with cancer incidence but, Smoking Status probably is.

Table 3: Summary of the contribution of mental health determinants to cancer incidence categorised per quality of evidence using the CASP tool (high quality (H), medium quality (M) and low quality (L). (+) sign indicates the direction of association.

Social determinants	Quality of included studies (results of CASP tool)		
	H	M	L
Age		Gross, A.L. et al. (2010), +	Linkins, R.W. et al. (1990), + Perskey V. et al. (1987), +
Smoking Status	Penninx, B. et al. (1998), +	Gross, A.L. et al. (2010), +	Linkins, R.W. et al. (1990), +
Number of cigarettes/days			Linkins, R.W. et al. (1990), + Perskey V. et al. (1987), +

<u>Summary of findings from retrieved articles</u>: Four papers studied the effects of individual (smoking, age, gender, alcohol intake, body mass index, and ethnicity) and social (marital status, occupational status, and socioeconomic status) mental health determinants on cancer incidence (Table 4). None of the included studies adjusted for environmental factors. Follow-up period ranged between 10- 24 years. Three of four papers reported a significant association between depression and incident cancer (Gross et al., 2010; Penninx et al., 1998; Persky et al., 1987). Two population-based studies assessed depression at three different time intervals. Both studies revealed a specificity to the association between depression and hormonally mediated cancers, thus supporting the hypotheses about a common biological pathway between depression and cancer (Gross et al., 2010; Penninx et al., 1998). Penninx et al measured chronic depression at three

different times (1982, 1985 and 1988) in order to ensure that depression isn't related to temporary stressful life circumstances that may remit shortly after (Penninx et al., 1998). Unlike baseline depression which was not significantly associated with incident cancer, chronically depressed mood, persistent for 6 years amongst individuals aged 71 years and above, was associated with increased hazard ratio (HR) of 1.88 (95% confidence interval = 1.3- 3.14) for developing cancer after adjusting for age, sex, alcohol intake, smoking, race, physical disability and hospital admissions. A similar HR of 1.87 CI (1.16- 3.01) and 1.69 CI (1.3- 2.19) for the development of cancer amongst persons diagnosed with major depression and Dysphoria, respectively, was observed in the study by Gross at el. (Gross et al., 2010). The association between depression and incident cancer in the study by Perskey et al. amongst male employees was significant (P< 0.05) yet was only observed when cancer was diagnosed during the first ten years of follow-up.

The interaction between smoking, depression and incident cancer showed mixed results in all four studies. Smoking habits were unlikely to be related to the increased cancer risk amongst chronically depressed individuals. In the study where incident cancer was examined among persons with chronic depression, the HR for non-smokers exceeded that of smokers who are not chronically depressed. Compared with the non-chronically depressed subjects, chronically depressed participants were more often females and of older age, and less often smokers or excessive drinkers. Also, a more strict cut-off point for CES-D scores was adopted, 20 instead of 16, to yield a higher accuracy for the identification of subjects with severe depression amongst older individuals (Penninx et al., 1998). In contrast, three studies found a significant association between smoking status and the incidence of cancer among depressed individuals (Gross et al., 2010; Linkins & Comstock, 1990; Persky et al., 1987). The study by Perskey et al, found an association between number of cigarettes smoked and cancer risk among employees with depression with no specification to the type of cancer. In the other two studies, the interaction was observed at cancer sites related to smoking. As indicated in Table-3, age and smoking status were the only two covariates adjusted for in the study by Linkins et al. which might have resulted in an overestimation of the impact for smoking.

The two studies adjusting for older age found it to be significantly associated with an increased risk for developing cancer (Gross et al., 2010; Persky et al., 1987). Except for "never having been married" which had a protective effect against the development of cancer HR 0.37 CI (0.18-0.75) (Gross et al., 2010), none of the remaining covariates in all studies had any significant association with incident cancer among depressed individuals.

Table 4: Characteristics of selected studies linking depression with incident cancer

Study	Country / Name of the study	Design	Duration of follow-up	Sample size; % Females	Type of assessed MH	Measurement of MH condition	Covariates	Outcome	Measurement of Outcome	Association of depression/anxiety with overall incident cancer and with cancer subtypes (95% CI)	Important results/ Highest risk group	CASP quality assessment
Gross, A.L. et al. (2010)	Baltimore Epidemiologic Catchment Area Study, USA	cohort prospective longitudinal	24 years	3177; F 61.2%	Depression: major depressive episode (MDE) & Dysphoric episode)	DIS/DSM-III MDE	- smoking status - Age - Gender - Ethnicity - Alcohol abuse/dependence - Marital Status - SES	Cancer (colon, prostate, lung, skin, and breast)	Self-report of cancer diagnosis plus death certificates.	DIS/DSM-III MDE HR 1.87 (1.16-3.01) for overall cancer DIS/DSM-III MDE HR 4.4 (1.08-17.6) for breast cancer§ DIS/DSM-III MDE (single episode) HR 6.88 (1.98-23.90) for prostate cancer‡ Dysphoric episode	Older age (reference: 45 years): HR 1.03 CI (1.02-1.04) for overall cancer Smoking status HR 34.3 CI (4.30-273.74) for lung cancer	Medium

										HR 1.69 (1.3-2.19) for overall cancer Dysphoric episode HR 2.42 (1.17-4.98) for breast cancer§ Dysphoric episode HR 3.54 (1.55-8.10) for colon cancer		
Penninx, B. et al. (1998)	Established Populations for Epidemiologic Studies of the Elderly; USA	cohort prospective longitudinal	10 years	4825; F 64.6%	Depression (chronic depression)	CES-D scale	- Age - Gender - Alcohol intake - Smoking - Ethnicity - Physical disability - Hospital admissions	cancer	Medicare hospitalization records plus death certificates.	Chronic depression HR 1.88 (1.3-3.14) for overall cancer Chronic depression HR 4.8 (1.01-22.79) for Uterus, adnexa cancers§	Not Chronically depressed mood X smoking: Ex-smoker HR 1.65 CI (1.29-2.1) Current smoker HR 1.96 CI	High

											(1.16-3.34) Chronically depressed mood X smoking: Ex-smoker HR 2.17 CI (0.68-6.88) Current smoker HR 2.8 CI (0.65-11.94)	
Linkins, R.W. et al. (1990)	Household survey Washington County; USA;	cohort prospective longitudinal	12 years	2264; F 58%	Depression	CES-D scale	-Gender - Smoking	cancer	Examination of records of the Washington County Cancer Register	Depressed mood at initial survey No (reference) Yes RR 1.09 (0.69- 1.71)	Depressed mood present Current smokers RR 2.6 CI (1.41-4.80) Current smoker	Low

										1- 14 cig/d RR 0.75 CI (0.10-5.46) 15- 24 cig/d RR 2.6 CI (1.11-6.07) ≥ 25 cig/d RR 4.47 CI (1.88-10.60) Depressed mood present ≥ 25 cig/d RR 18.47 CI (4.58-74.41) for cancer sites associated with	

											smoking €	
Perskey V. et al. (1987)	Western Electric Study; USA	cohort prospective longitudinal	20 years	2017; F 0%	depression	MMPI	- Age - Smoking (# of cigarettes/d) - Alcohol (ml/d) - Occupational status - Family history of cancer - BMI - Serum cholesterol	cancer	Self-report of cancer diagnosis plus death certificates.	High D profile proportional Hazards Coefficient 0.3188 P=0.055	Age Coefficient 0.0885 P<0.001 Cig (no/d) 0.0129 P=0.035	Low

§ Analysis for women only
‡ Analysis for men only
€ Cancer sites associated with smoking are: buccal cavity and pharynx, pancreas, larynx, bronchus and lung, cervix, bladder and kidney.

- <u>Chronic Obstructive Pulmonary Disease</u>

<u>Evidence linking social determinants to Asthma incidence</u>: Available evidence from a medium-quality article suggests that female gender and BMI may be associated with an increased risk of developing Asthma and evidence from the high-quality article confirms that this is probably the case. Evidence from a medium-quality article suggest that being a Latino or African, compared to being White, may be negatively associated with developing Asthma. Finally, based on one high quality study, educational attainment is probably negatively associated with developing Asthma (Table 5).

Table 5: Summary of the contribution of mental health determinants to Asthma incidence categorised per quality of evidence using the CASP tool (high quality (H), medium quality (M) and low quality (L). (+, -) sign indicates the direction of the association.

| Social determinants | Quality of included studies (results of CASP tool) | |
	H	M
Female gender	Brunner, W. et al, 2014, +	De La Hoz, R. et al, 2016, +
BMI	Brunner, W. et al, 2014, +	De La Hoz, R. et al, 2016, +
Latino and African ethnicities		De La Hoz, R. et al, 2016, -
Educational attainment	Brunner, W. et al, 2014, -	

<u>Summary of findings from retrieved articles:</u> No studies linking depression and/or anxiety with incident Chronic Obstructive Pulmonary Disease (COPD) *per se* were identified in the literature. On the other hand, two longitudinal studies identified in this review investigated the link between mental health illness with incident asthma, a form of obstructive pulmonary disease that share similar pathophysiologic characteristics with COPD (Cukic et al., 2012). A recent longitudinal study of women, followed prospectively for 13 years, found that more than one in three women with asthma developed COPD. Socio-demographic, lifestyle and environmental risk factors were shown to have a significant association on the progression from asthma to COPD. Older age, obesity,

cigarette smoking, unemployment, low education attainment, and rural residence were found to play a significant role in the progression to COPD (To et al., 2018).

Some risk factors, associated with the progression from Asthma to COPD were also found to be significantly associated with the progression from depression and anxiety to Asthma (Brunner et al., 2014; de la Hoz et al., 2016). As shown in Table 6, both studies reported significant associations with factors such as gender and obesity as independent predictors of incident asthma. In the multi-centre CARDIA study, baseline and chronic depression were significantly associated with incident asthma (Brunner et al., 2014). The chronicity of PTSD in the study by De La Hoz also had a greater cumulative impact on the incidence of Asthma. In a multivariable analysis, lifetime non-smokers with probable PTSD were found to be 2.41 times more likely to develop asthma than non-smokers without PTSD at baseline (OR= 2.41; 95% CI 1.85- 3.13). The risk increased when participants had probable PTSD at baseline and follow-up visits. Participants with chronic PTSD were more than four times more likely to develop asthma (OR= 4.18; 95% CI 3.06- 5.72). That the magnitude of association was greater between late-onset or chronic PTSD and incident asthma than with recovering probable PTSD and incident asthma suggests that treating PTSD could potentially reduce risk for asthma (de la Hoz et al., 2016).

In both studies, incident asthma was defined either by a new report of asthma medication use and/or self-reported physician diagnosis. Self-report of asthma has been found to be acceptable in epidemiologic studies with respect to physician diagnosis and not linked to misclassification bias (Toren et al., 1993).

Table 6: Characteristics of selected studies linking depression and/or PTSD with incident Asthma

Study	Country/ Name of the study	Design	Duration of follow-up	Sample size; % Females	Type of assessed MH	Measurement of MH condition	Covariates	Outcome	Measurement of Outcome	Adjusted Association of depression/anxiety with overall incident asthma (95% CI)	Important results/ Highest risk group	CASP quality assessment
Brunner, W. et al, 2014	the CARDIA Study; USA	prospective cohort design	20 years	3,614; F 64.1%	Depression	CES-D scale	- Age - Gender - Race - Education level - PA - Smoking - BMI	Asthma	a new report of asthma medication use and/or self-reported provider diagnosis of asthma	Baseline depression RH 1.26 (1.02- 1.56) Cumulative exposure to depression ‡ RH 1.15 (1.02- 1.29)	Gender *Female* RH 1.93 (1.55- 2.41) BMI (<25 reference) *BMI= 25- 29* HR 1.19 (0.95- 1.50) *BMI= 30+* RH 1.41 (1.10- 1.81) Education (< HS is reference) *HS* RH 0.74 (0.51- 1.09) *Some college* RH 0.64 (0.43- 0.95)	High

											College or more RH 0.66 (0.44- 0.99)	
De La Hoz, R. et al, 2016	World Trade Centre Worker and Volunteer Medical Screening Program; USA	prospective cohort design	mean = 4.95 years	3,757; F 16.15 %	PTSD	PTSD Check list questionnaire	- Gender - Age - Race/ethnicity - BMI - Weight gain - Education level - Occupational exposure	Asthma	self-report of new physician diagnosed asthma	Baseline PTSD § OR 2.41 (1.85- 3.13) Recovering PTSD OR 1.34 (0.81- 2.23) Late-onset PTSD OR 3.07 (2.18- 4.31) Chronic PTSD OR= 4.18 (3.06- 5.72)	Gender (male as reference) *Female* OR 1.38 (1.03- 1.85) Race/ethnicity (white is reference) *Latino* OR 0.89 (0.69- 1.16) *African American* OR 0.62 (0.42- 0.91) *Asian* OR 1.32 (0.63- 2.74) *Other* OR 3.58 (1.52- 8.46)	Medium

| | | | | | | | | | | | BMI (Normal is reference) *Overweight* OR 1.1 (0.79-1.54) *Obese* OR 1.42 (1.01- 2.00) | |

‡ cumulative exposure model of depression is derived by allowing depressive symptom status to vary by time taking into account the number of instances of elevated symptoms before asthma onset.

§ Definitions of PTSD categories: Baseline PTSD (PTSD at baseline study visit), Recovering PTSD (PTSD at baseline visit but not at the follow-up visit), Late-onset PTSD (PTSD not present only at the follow-up visit), Chronic PTSD (PTSD present at both visits).

- <u>Diabetes Mellitus</u>

<u>Evidence linking social determinants to Diabetes Mellitus incidence</u>: Table 7 suggests that there is inconclusive evidence linking age, BMI and ethnicity to increased incidence of Diabetes, due to low quality of evidence. However, educational attainment may be negatively associated with increased risk for Diabetes incidence as per one medium quality study.

Table 7: Summary of the contribution of mental health determinants to Diabetes incidence categorised per quality of evidence using the CASP tool (high quality (H), medium quality (M) and low quality (L). (+, -) sign indicates the direction of the association.

Social determinants	Quality of included studies (results of CASP tool)	
	M	L
Age		Boyko, E. et al, 2010, +
BMI		Boyko, E. et al, 2010, +
Latino and African ethnicities		Boyko, E. et al, 2010, +
Educational attainment	Mezuk, B. et al, 2008, -	

<u>Summary of findings from retrieved articles:</u> Two studies reporting Diabetes Mellitus (DM) as an outcome were included. Mezuk et al tested prospectively the relationship between depression and type 2 diabetes amongst residents from East Baltimore (Mezuk et al., 2008). Depression assessed via DIS was collected in 1982, 1993 and 2005. The onset of depression was determined as the earliest age when symptoms of depression began. The average age of depression onset was 30.9 years and that of type 2 diabetes was 55 years. Respondents self-reported diabetes incidence, which may also have under-detected cases of diabetes. On average, it took 16 years for diabetes to develop after the onset of depression. Depression was found to be associated with diabetes onset HR 1.62 (1.03- 2.55) after controlling for age, gender, race, education, social network size and antidepressant use. This association was more evident after controlling for additional socio-demographic characteristics and health behaviours HR 2.04 (1.09- 3.81). In a

stratified analysis, the risk was elevated amongst those with 12 years of education or less. (Table 8). No effect was seen for behavioural factors such as smoking or physical activity however, that could be due to the actual measures not being sensitive enough to capture an effect. For instance, information on current smoking status was collected and not on number of cigarettes smoked or duration of smoking. For alcohol intake, information was collected on number of days where participants drank in the past month. Survival bias is also another limitation in such a study whereby the duration of follow-up was 23 years.

Diabetes risk was measured in a 44,754 members of the US military service followed up for three years after assessing depression and anxiety at baseline (Boyko et al., 2010). Diabetes onset was self-reported and the survey instrument included socio-demographics, weight, height and military service information. In a univariate comparison of baseline characteristics by diabetes status at follow up, those with major depressive disorder and PTSD, screened using the self-administered PHQ-9 and PCL-C respectively, had higher odds for developing diabetes unadjusted OR 1.95 (1.23- 3.11) and unadjusted OR 2.56 (1.78- 3.67). In the multivariable model, only baseline PTSD, and not depression, was significantly associated with diabetes onset after adjusting for age, sex, BMI, education, race/ethnicity, military service characteristics and mental health conditions OR 2.07 (1.31- 3.29). The high occurrence of both conditions at baseline suggests that depression may serve as a surrogate marker for PTSD in other studies not measuring both conditions. Also, participants might have under-reported mental health symptoms due to fear of adverse consequences on their military records. Increased odds for diabetes were seen amongst participants of older age, higher BMI, non-Caucasians, and those separated from the military. Being on active duty seems to have a protective effect against developing diabetes which could be due to the fact that those selected for deployment pass a medical screening and are usually healthier and more fit. In this study, the interaction between gender and depression with DM onset suggests that gender plays a role in the development of DM. Non-depressed males were found to be at a significantly increased risk for developing DM. There is inconclusive evidence however whether the same association remains when depression ensues.

Table 8: Characteristics of selected studies linking depression and/or PTSD with incident Diabetes Mellitus

Study	Country / Name of the study	Design	Duration of follow-up	Sample size; % Females	Type of assessed MH	Measurement of MH condition	Covariates	Outcome	Measurement of Outcome	Adjusted Association of depression/PTSD with overall incident asthma (95% CI)	Important results/ Highest risk group	CASP quality assessment
Boyko, E. et al, 2010	Seattle Epidemiologic Research and Information Centre, Department of Veterans Affairs Puget, Washington	Prospective cohort longitudinal	3 years	44,754; 25.8%	Depression and PTSD	Self-administered PHQ and PTSD Checklist Civilian version	- Sex - Age - Ethnicity - Education, - BMI - Alcohol consumption - Smoking	DM	Self-report of physician diagnosis	PTSD OR 2.07 (1.31-3.29)	Age OR 1.06 (1.05- 1.08) BMI OR 1.2 (1.17-1.23) Race/ethnicity *(Caucasian is reference)* *African American* OR 1.46 (1.10-1.94) *Hispanic* OR 1.35 (0.89- 2.05) *Asian* OR 1.67 (1.11- 2.52)	Low

											Other OR 1.07 (0.52- 2.19) Separated from military as of follow-up *(No is Ref)* *Yes* OR 2.18 (1.61- 2.93) Component *Reserve/Guard is Ref* *Active duty* OR 0.74 (0.56- 0.98) Depression x Gender *Non-depressed men Ref* *Depressed men* OR 1.14 (0.6-2.15)	

												Non-depressed women OR 1.63 (1.26- 2.13) *Depressed women* OR 0.51 (0.15- 1.7)	
Mezuk, B. et al, 2008	Sound Health Care System, Seattle, Washington	Prospective cohort longitudinal	23 years	1071; 79.3% with MDD 61.7% no MDD	Depression	Diagnostic Interview Schedule (DIS)	- Age - Gender - Education, - Race - BMI - Smoking - Alcohol use - Stairs climbed per day - Frequency of eating balanced meals - Social contact with relatives	DM	Self-report at each wave; excluding diabetes cases that began within 1 year of depression onset and before the age of 30	Depression *(1981- 2005)* ‡ HR 1.62 (1.03- 2.55) *(1993- 2005)* HR 2.04 (1.09- 3.81) €	Analysis stratified by educational attainment§ *College degree or more* HR 0.45 (0.11- 1.80) *High school or less* HR 2.26 (1.11- 4.6) MDD x College degree or more (Ref) Σ *MDD x High school or less*	Medium

85

| | | | | | | | | | | | HR 4.1 (1.84-9.16)

No MDD x College degree or more
HR 0.92 (0.27- 3.15)

No MDD x High school or less
HR 1.44 (0.82- 2.55) | |

‡ adjusted for age, race, gender, education, smoking status, alcohol use, social network size and antidepressant use
€ adjusted for age, race, gender, education, smoking status, alcohol use, social network size, antidepressant use, BMI, family history of diabetes, stairs climbed per day, and frequency of contact with relatives
§ adjusted for age, race, gender, smoking status, alcohol use, BMI and family history of diabetes.
Σ adjusted for age, race, gender, smoking status, alcohol use, BMI, family history of diabetes and social network characteristics.

- Cardiovascular Diseases

Evidence linking social determinants to CVD incidence: High quality evidence suggests that Age and Educational attainment are probably associated with a positive and a negative association, respectively, with the incidence of CVD. Smoking status may be associated with an increased risk of CVD and there is inconclusive evidence linking BMI to an increased incidence of CVD, due to low quality evidence only being available (Table 9).

Table 9: Summary of the contribution of mental health determinants to CVD incidence categorised per quality of evidence using the CASP tool (high quality (H), medium quality (M) and low quality (L). (+, -) sign indicates the direction of the association.

| Social determinants | Quality of included studies (results of CASP tool) | | |
	H	M	L
Age	O'Neil, A. et al, 2016, +		Balog, P. et al, 2017, +
BMI			Balog, P. et al, 2017, +
Smoking Status		Anda, R et al, 1993, +	
Educational attainment	O'Neil, A. et al, 2016, -		

Summary of findings from retrieved articles: Three studies examining the effect of depression on CVD incidence were identified with follow-up periods ranging between 4 and 23 years. A prospective study of 860 women randomly selected from Australian electoral rolls were followed up for 18 years to study the impact of depression and anxiety on events requiring hospitalization admission confirming coronary heart disease (CHD) incidence (primary outcome), and additional diagnosis of stable/unstable angina and "not otherwise defined" CHD events (secondary outcome) (O'Neil et al., 2016). Depression and anxiety diagnosis was conducted by mental health professionals, at baseline and 10 years later, utilising the Structured Clinical Interview for Diagnostic and Statistical Manual of Mental Disorders, 4th edition, non-patient edition which the gold standard for assessing such disorders. Depression (OR 3.28- CI 1.36- 7.9), and not anxiety (OR 0.62- CI 0.18- 2.14), was found to be an independent risk factor for CHD after adjusting for

demographic, anthropometric, health and clinical factors. Neither depression, nor anxiety, was significantly associated with recurrent cardiac episodes. The association shown between depression and CHD incidence was of greater magnitude than the association seen with other risk factors (Table 10). This suggests a need to set depression as a target in primary prevention of CHD as well as its influence on risk factor behaviours, an approach that could be useful for helping alleviate CVD burden globally.

Another study by Balog et al examined the concurrent effects of depression and vital exhaustion (described by the authors as loss of energy, increased irritability and general demoralization) on CVD morbidity in a random sample of 2317 participants from the Hungarian Epidemiological Panel Survey (Balog et al., 2017). Higher age and BMI were positive predictors of CVD incidence after 4 years of follow-up according to the logistic regression model while depression did not have a significant predictive role. In addition to the relatively short follow-up duration, all information including that of mental distress was collected via self-administered questionnaires. Therefore, information pertaining to CVD incidence and/or diagnosis is highly unreliable. Also, survival bias is another limitation in such a case.

Using a subscale from the General Wellbeing Questionnaire, depressed affect was assessed in a population sample of 2832 US citizens to examine the association of Ischemic Heart Disease (IHD) (Anda et al., 1993). After a mean follow-up period of 12.4 years, depression was found to be associated with an increased risk of fatal and non-fatal incidence of IHD (Table-10) after adjusting for age, sex, race, education, marital status, smoking, total cholesterol, systolic blood pressure, BMI, alcohol use and physical activity. No analysis was run to measure the individual effect of confounding variables on the incidence of IHD. The interaction between depression and smoking showed that there exists a synergistic effect thus increasing the relative risk for developing IHD.

Table 10: Characteristics of selected studies linking depression and/or PTSD with Cardiovascular Disease (CVD)

Study	Country / Name of the study	Design	Duration of follow-up	Sample size; % Females	Type of assessed MH	Measurement of MH condition	Covariates	Outcome	Measurement of Outcome	Adjusted Association of depression/PTSD with overall incident asthma (95% CI)	Important results/ Highest risk group	CASP quality assessment
O'Neil, A. et al, 2016	South-Eastern Australia/ Geelong Osteoporosis Study	prospective longitudinal study	up to 18 years	860 women	Depression & Anxiety	SCID-I/NP	- Age - Education - BMI - Alcohol frequency - # years smoker	*Primary outcome:* Occurrence of a CHD event that resulted in hospital *Secondary outcome:* CVD morbidity/ hypertension treatment/ Ischemic heart disease incidence	hospital medical records	Primary outcome (incidence yes/no) Baseline depression (OR 3.28- CI 1.36-7.9) Baseline Anxiety (OR 0.62- CI 0.18-2.14) secondary outcome (all cardiac events) depression OR 2.74 CI (1.42- 5.29) Anxiety OR 0.34 CI (0.12-0.99) number of CHD events depression IRR 1.03 CI (0.40- 2.63) Anxiety IRR 1.64 CI (0.35- 7.76)	Primary outcome Age OR 1.07 (1.02- 1.11) Education OR 0.49 (0.27- 0.87) Secondary outcome Age OR 1.04 (1.01- 1.07) Years of smoking OR 1.03 (1.00-1.05) Number of CHD events Age	High

								and fatality				IRR 1.07 (1.01- 1.13) BMI IRR 17.21 (1.26- 235.46) Alcohol Frequency IRR 3.29 (1.40- 7.73)	
Balog, P. et al, 2017	Hungarian Epidemiological Panel Survey/ Hungary	prospective longitudinal study	4 years	2,725; 56.44%	Depression	BDI-S	- Age - Educational attainment (6 categories) - Alcohol abuse - Smoking status (smoker vs non-smoker) - Physical activity - BMI	CVD morbidity including: hypertension treatment / CVD event incidence	Self-reported	Depressive symptomatology factor OR 1.15 CI (0.97- 1.36)	Age OR 1.05 (1.04- 1.07) BMI OR 1.05 (1.01- 1.10)	Low
Anda, R et	USA, (NHANES	prospective longitu	mean length of follow	Individuals being	Depression	General Wellb	- Age - Sex - Race	Ischemic heart disease	Hospital discharge records.	Fatal IHD Depressed affect No (Ref)	Additive Interaction	Medium

al, 1993	follow up study of 1987)	dinal study	up was 12.4 years	treated for hypertension (n=277) and cardio- and/or cerebrovascular incidents (n=131) for the first time during the follow-up period were compared to participants never treated for CVD (n=2,317)."		eing Questionnaire	- Education - Marital status - smoking status - Physical activity	incidence and fatality	Cause of death was determined via death records coded against ICD-9.	Yes RR 1.5 (1.0-2.3) Non-Fatal IHD Depressed affect No (Ref) Yes RR 1.6 (1.1-2.4)	*Nonsmoker/Non-depressed (Ref)* Depressed affect adjusted RR 1.31 Smoker only adjusted RR 1.65 Smoker & depressed Adjusted RR 2.97	

4.4 Discussion

The WHO has identified the influence of individual, social and environmental factors as determinants of mental health. This review has elucidated some of these factors as being associated with an increased incidence of common NCDs. As much as it is essential to understand the association of these determinants with disease incidence, it is also important to identify them as contributing factors that could be targeted with specific interventions for NCD prevention.

Our findings are consistent with cohort studies where older age (Al-Shamsi et al., 2019), low educational attainment (Dégano et al., 2017), higher BMI (Canoy et al., 2013) and smoking status (Al-Shamsi et al., 2019) were found to be associated with CVD incidence. In the current review, the study by O'Neil has identified depression as an independent risk factor for CVD onset (O'Neil et al., 2016) which is also suggested by other longitudinal studies (Kendler et al., 2009; Majed et al., 2012; Surtees et al., 2008). We therefore recommend to include depression as a target for primary prevention of CVD.

In addition to ethnicity, factors identified earlier as being related to CVD incidence, except smoking, were also reported in this review to be associated with diabetes onset. This is in agreement with findings from the literature that linked older age, higher BMI (Abdullah et al., 2010; Lindström & Tuomilehto, 2003) and low educational attainment (Steele et al., 2017) with incident diabetes. Our results regarding the type of mental disorder in relation to type 2 diabetes incidence contradict findings of the literature. While numerous research has demonstrated a bidirectional association between depression and type 2 diabetes (Eaton et al., 1996; Lustman & Clouse, 2007), our review indicates that PTSD, and not depression, was found to increase incident diabetes when the effect of depression and PTSD were studied together. A study by Scherrer et al. found that reducing PTSD symptoms lowered the risk of type 2 diabetes (Scherrer et al., 2019) amongst participants with PTSD. In the same study, depression remission contributed to lower diabetes onset amongst participants diagnosed with comorbid PTSD and depression, and not with depression alone. Therefore, there may be further benefit from reducing PTSD symptoms to lower type 2 diabetes risk in populations that are exposed to potentially traumatic

events, such as veterans. For other populations exposed to such events e.g., refugees and the general population affected by adverse events, studies are lacking. Therefore, it is difficult at this point to generalize a recommendation as to target PTSD for the primary prevention of type 2 diabetes.

In relation to cancer incidence, three out of four studies demonstrated an association between depression and incident cancer. This is in line with two previous meta-analyses (McGee et al., 1994; Oerlemans et al., 2007). Although not all studies included in this review showed a significant impact of depression on cancer initiation, some trends emerged regarding the extended duration of depression having an important role in a slowly developing health condition such as cancer. This view is shared by (Garssen, 2004) who suggested specific risk factors amongst this population, namely: smoking, BMI, age and alcohol intake. This research also found that behavioural factors, namely smoking (Johnson et al., 2000) and alcohol intake (Smith-Warner et al., 1998) were associated with increased cancer onset.

Our review showed a significant association between depression and PTSD with incident asthma. In 2005, a review that explored the interaction between depression and asthma as comorbidities suggested that the respiratory tract (mainly the airways) is greatly reactive to the psychological changes of individuals (Opolski & Wilson, 2005). The findings of our study suggest that depression could lead to asthma onset via this mechanism. Regarding PTSD, our findings are consistent with those in the literature whereby PTSD was found to be positively associated with asthma onset (O'Toole & Catts, 2008; Sareen et al., 2007). Our study identified risk factors such as female gender, increased BMI, and low educational attainment as being related to asthma onset. Therefore, special attention should be given to such population groups in clinical practice and public health interventions that aim to reduce the incidence of asthma.

In addition to the complexity in conducting longitudinal studies to test the causal association between common mental health disorders and NCDs, there appears to be a challenge in relation to the reporting of health conditions. Epidemiological investigations and population-based studies mainly rely on self-reports to obtain information on health

outcomes, such as diabetes, given the high cost and low efficiency of clinical diagnosis (Borrell et al., 2006; Wu et al., 2013). A number of studies assessing the accuracy of self-reported data, using test characteristics such as sensitivity (the fraction of people who fit the medical criteria for the outcome and self-report a diagnosis; true positive) and specificity (the fraction of people who have normal measures and do not report a diagnosis i.e. true negative), gave mixed results (Goldman et al., 2003; Ning et al., 2016; Okura et al., 2004). Compared to biochemical measurements, self-reported data on diabetes among Chinese adults ≥ 45 years showed low sensitivity and a moderate overall agreement. Factors associated with accurate self-reported data were female sex, older age, high socioeconomic status, better educational attainment, and recent utilisation of medical services (Ning et al., 2016). Goldman et al attributed the lack of accuracy in self-reports to several factors such as undiagnosed diseases, inability to recall, unwillingness to disclose medical information, and lack of accessibility to health services (Goldman et al., 2003). This could further be exacerbated amongst individuals facing psychological stressors. Depression, for instance, was found to be associated with barriers deterring individuals from utilising medical services. Factors such as mistrust in health providers and the health system (LaVeist et al., 2000), loss of income (Dohrenwend et al., 1992), and low motivation to seek medical care (Haviland et al., 2003) may all result in under-diagnoses leading to under-reporting. Therefore, the above-mentioned issues that feed into under-reporting should be taken into account when conducting future research on this topic.

Another common challenge pertains to the identification of cases of common mental health disorders. There is no single diagnostic tool for such conditions. For instance, several valid and reliable instruments are used by primary care clinicians and researchers to identify cases of depression and anxiety (Bliese et al., 2008; Ferenchick et al., 2019; Mulrow et al., 1995). The selection of the appropriate tool depends on factors such as feasibility, administration time, and personnel, interest in measuring the severity of the condition, or monitor the response to therapy. These tools tend to underreport cases

compared with the clinical psychiatric examination and hinder the ability to compare results from different studies.

4.5 Strengths and limitations:

This systematic review provides additional evidence on how common mental health disorders are linked to the onset of the four most common NCDs. The particularity of the evidence emerged has to do with the type of individual studies: the included longitudinal studies are the best to validate the causal relationship between common mental health disorders and NCDs in this specific direction. Nonetheless, a few limitations of the current review should be acknowledged. First, our review did not include studies from the grey literature and was limited to literature published in English language only. Second, measures of depression and anxiety varied amongst studies with the majority relying on self-report using different screening tools with various cut-off points. This might have caused a misclassification of exposure and hence, lessened the association between mental disorders and the incidence of NCDs. Third, measures of covariates were different across studies which makes it difficult to compare their effects on the onset of diseases. And finally, the majority of included studies limited their assessment of mental conditions to one point in time which might have been a transient episode. The association found between chronic depression/ PTSD and incident NCDs emphasised the importance of assessing the chronicity of mental illnesses and their impact on health.

4.6 Conclusion

These findings have important implications for public health and suggest that different health promotion and prevention strategies focusing primarily on high-risk groups can be adopted. Interventions need to target those with common mental health disorders and take into account: age (older age groups are more at risk), gender (females are more at risk), educational level (individuals with less than 12 years of education are more at risk) and smoking status (smokers are more at risk). Furthermore, there is an urgent need to conduct studies to understand the linkages between mental health and NCDs in low- and middle-income countries given the absence of evidence in those settings and the increasing burden

of NCDs and mental health conditions they are experiencing. Finally, research to evaluate public health interventions and to assess the responsiveness of health care systems (mainly at the primary care level) is essential to alleviate the burden of those conditions at population level.

Chapter 5

Social determinants and mental health during the COVID-19 pandemic: The case of Palestine refugees in Gaza

In the previous chapter, I have identified the social determinants that link mental health to NCD incidence. In earlier chapters, I have established already the link between the COVID-19 pandemic and the deterioration of social determinants suggesting a decline of mental health for populations worldwide. According to UNHCR, the COVID-19 pandemic and its associated mitigation and prevention measures added to the deterioration of the mental health status of refugees (UNHCR, 2020). As the refugee population in Gaza is already facing a convergence of stressors, as outlined earlier in Chapter 2, the detrimental effects of the pandemic on mental health and its social determinants amongst this vulnerable group were explored. Specifically in this phase of research, I aimed to explore the impact of the COVID-19 pandemic on the social determinants of mental health amongst Gazans living in Rafah and Jabalia camps and how this could potentially affect health outcomes. In addition, I documented the policies and services that were enacted by UNRWA during this stressful period to address the vulnerabilities of the study population.

5.1   Methods Overview

This study adopted a pragmatist approach and a mixed-method design. The current research was nested within a larger funded project, a collaboration between Queen Margaret University (QMU) and UNRWA which examined the effectiveness, equity, acceptability and scalability of the strategies enacted by UNRWA in Gaza and Lebanon during the COVID-19 pandemic, and the underlying health system and community capacities supporting strategy implementation. As a pragmatist, I utilised the data collected for this project to answer my own research questions related to the impact of the pandemic on the social determinants. Recognising that there is a single reality and various views of reality in the minds of the social actors, I utilised a mixed method design where I collected qualitative and quantitative data concurrently for the purpose of triangulation

and complementarity. Below is a detailed description of the methods utilised. Table 11 outlines the research questions of this study.

Table 11: Research questions and methods

	Method	Key informant interviews with health system and community stakeholders (remote data collection, MS-Teams, WhatsApp)	Surveys with community members (remote data collection, bespoke web-application)
Research question			
RQ1: How did the pandemic affect the social determinants of mental health of Palestine refugees in Gaza and how did that impact health outcomes?		√	√
RQ2: How did UNRWA respond to address the vulnerabilities of the study population?		√	

5.1.1   Online Survey

- Tool Content and Development

The survey tool collected information from community members around the following: demographics, personal stressors including food security, wellbeing assessment, trust in UNRWA, in its health and relief and social services, in staff, and in the enacted measures. I used the Arab Family Food Security Scale (AFFSS) to assess food security. The AFFSS was developed and validated in 2014 to be used in countries of the Middle East (Sahyoun et al., 2014). I utilised the World Health Organization- 5 Wellbeing Index (WHO-5) as a self-report measure for wellbeing that was validated across different contexts and could

indicate the presence of depression (Krieger et al., 2014; Topp et al., 2015; WHO, 1998). I determined the WHO-5 score by calculating the sum of the 5 answers on a 6-point Likert scale. All the survey sections were first pilot-tested to check their face-validity and were adapted to meet the study objectives and to the context-specific requirements. Upon feedback from one UNRWA staff and the field researcher regarding the clarity of the translated text, alterations to the Arabic translation of the survey tool took place. The survey tool is appended (Appendix 4). For the sake of addressing the objectives of the current study, only survey data collected from community members in Gaza who completed the WHO-5 Wellbeing Index were considered.

- <u>Camp selection</u>

Survey data were collected from community leaders/ members residing in Jabalia and Rafah, the two camps with the largest concentration of Palestine refugees in Gaza, utilising a bespoke web-based application developed as part of the National Institute of Health Research UK – Global Health Research Unit on Health in Situations of Fragility (Queen Margaret University, 2021).

These two camps were selected because they are the most densely- populated camps in Gaza, are geographically dispersed across the Strip and more than 90% of the water available to residents of both camps is deemed unfit for human consumption, thereby posing a significant threat to their health and hygiene (UNRWA, 2021c).

Egypt borders Rafah camp in southern Gaza. During the period spanning from 2007 to 2013, more than 1,500 tunnels were used to circumvent the Gaza barrier. Following the 2008/2009 and 2012 conflicts, Palestinians residing in the Rafah camp of Palestine were able to reap the advantages of the "tunnel economy," which involved the importation of construction materials through subterranean passageways for the purpose of reconstruction. The Egyptian military successfully eradicated a significant number of smuggling tunnels during the period of 2013-2014, subsequent to the construction of an underground barrier in 2009. Despite the phenomenon of the "tunnel economy," which has been prevalent in Rafah for some time, the rates of unemployment and poverty in this

camp continue to be significant. As a result, a considerable portion of the population remains dependent on food and monetary assistance provided by UNRWA (UNRWA, 2023b).

The Jabalia camp, located in the Gaza Strip, is positioned 3 kilometres to the north of Jabalia village and is acknowledged as the largest refugee camp under Palestinian jurisdiction. The camp spans across a landmass of 1.4 square kilometers and is situated in close proximity to the Erez border crossing with Israel (UNRWA, 2023a). Jabalia camp is known for its particularly tough reputation in comparison to other refugee camps. This is due to the fact that it was the site where the initial Palestinian Intifada began, which occurred within the camp's densely-populated streets (Johnston A., 2004). As per the report by the United Nations Office for the Coordination of Humanitarian Affairs (OCHA), the number of Palestinians who used to commute to Israel for work through the Erez crossing stood at over 21,000 before the onset of the Second Intifada. A new exit policy was enforced at the onset of the second Intifada in September 2000, and subsequently reinforced after June 2007, in response to the takeover of Gaza by Hamas. According to the revised regulations, solely individuals who fall within particular categories as defined by the Israeli authorities are qualified to obtain an exit permit, contingent upon undergoing a security screening. This has led to a significant increase in the rate of unemployment (UNRWA, 2023a).

- Participants and sampling

Characteristics of eligible participants are detailed in Table 12. There was a particular interest in recruiting participants with a pre-existing chronic condition (Diabetes, Hypertension etc.) and community leaders and UNRWA itself were relied upon to identify and encourage this group of people to participate in this study. According to Onwuegbuzie and Collins, the minimum sample size for a two-tailed correlational study that can detect moderate effect size with 0.8 statistical power at 5% level of significance is approximately 80 (Onwuegbuzie & Collins, 2007). Due to the need to recruit relatively equal numbers of responses from chronically ill and healthy individuals, we anticipated recruiting 160 participants from each camp. Also, due to the online nature of data collection and the

likely attrition, we inflated the sample size to 200 from each camp, resulting in a total sample size of 400 participants.

Table 12: Participants' inclusion criteria- online survey

Participant category	Eligibility criteria
Community members/ leaders	a) Palestine refugees i.e. registered with UNRWA
	b) residents of either Rafah or Jabalia camps
	c) ≥18 years old
	d) consenting to participate in the study
	e) have access to a smartphone in order to use the web-application

- Recruitment

Participant recruitment was intended to start in August 2020. Study flyers and promotional materials were designed earlier to raise community awareness of the study and to assist in recruitment. They were distributed at UNRWA health centres in Jabalia and Rafah camps. Also, UNRWA field level staff contacted local community associations to assist in participant recruitment sending a link to the application to community members. Due to the COVID-19 community transmission in Gaza that took place in August, the recruitment process was halted and resumed back in October. Unfortunately, the survey roll-out was not successful at that point and the need to hire a field researcher by UNRWA was deemed essential in order to reach out to potential participants and encourage them to self-complete the survey. Recruitment of the field researcher (MM) took place end of January and participants' recruitment resumed in February 2021 and continued till the end of March 2021. I shared the research protocol with MM and trained him on the different sections of the survey, what the questions are intended to ask and how to utilise the application.

In order to comply with COVID-19 safety measures, MM did not contact potential participants face-to-face. Flyers that were previously produced around the research study and participation in the survey were utilised in participant recruitment. The flyers were made available at UNRWA health clinics and were distributed to patients/visitors

attending UNRWA health centres which had by then resumed their operations. With the help of the Area Health Officers and the Head of health centres of Jabalia and Rafah camps, the field researcher was put in contact with community leaders in the camps of concern and with the parents' councils at UNRWA schools in order to disseminate the flyers electronically and recruit participants into the survey. Participants were encouraged to share the link of the study via any electronic communication platform, including social media, to enable a snowball sampling approach.

- Data collection

Upon accessing the link of the online survey, participants were given information on the study and asked to consent prior to answering the survey questions. The original plan was to collect longitudinal survey data over a period of 10 weeks. Questions around stressors, wellbeing and trust in UNRWA (which includes perceptions on COVID-19 response strategies) were supposed to be collected every two weeks throughout the 10-week period. Due to recruitment difficulties, the feedback from UNRWA staff and the participants themselves on difficulties around internet connectivity and survey length, and the delays incurred in data collection, the research team reduced the period of data collection to 6 weeks and eventually it was reduced further to one point in time only.

- Variable definitions and analysis of survey data

I utilised the Arab Family Food Security Scale (AFFSS) to assess food security. A total score of 0-1 represents food security, 2-4 represents moderate insecurity and 5-6 represents severe food insecurity (Sahyoun et al., 2014). I utilised the WHO-5 Wellbeing Index as a self-report measure for wellbeing that can indicate the presence of depression (Krieger et al., 2014; Topp et al., 2015; WHO, 1998). I determined the WHO-5 score by calculating the sum of the 5 answers on a 6-point Likert scale. Participants were classified as having poor wellbeing and warrant further investigation for depression if they answered 0 to 1 to any of the five questions and/or if they obtained a total score below 13 (WHO, 1998). Crowding Index, a measure of few available economic resources, was determined

by dividing the number of people living in a household by the number of available rooms excluding the kitchen and the bathrooms. Overcrowding was then defined as having 2 or more persons per room (Galobardes et al., 2006).

For all survey items, I determined descriptive statistics of the participants' demographic information, food security items, wellbeing index items and other stressors summarizing mean and standard deviations for all continuous data, and tabulating count data for discrete response items. Due to the small number of responses, bivariate analysis examining the level of association between wellbeing index and the social determinants of mental health was not conducted since it is not possible to make inferences or draw any conclusions with 16 responses only. Statistical analysis was carried out using the statistical software SPSS-version 23.

5.1.2 Key-informant Interviews

Interviews were carried out with UNRWA HQ, Gaza Field Office, Health and Relief and Social Service UNRWA staff and with community leaders/ members residing in Jabalia and Rafah camps. Inclusion and exclusion criteria are detailed in Table 13. The sampling strategy was guided by principles of data saturation and diversification. The latter was important to reflect various views, levels of knowledge and experience. Determining the sample size needed to reach data saturation in qualitative research is largely debated in the literature with recommendations around recruitment starting with a minimum of 15 participants (Bertaux, 1981) to between 30- 60 participants by others (Bernard & Bernard, 2013). In the current study, participants were selected using purposive, convenience and snowball sampling.

Table 13: Participants' inclusion criteria- KIIs

Participant category	Eligibility criteria
UNRWA staff	a) actors in the Health Programme and in the Relief and Social Services Programme engaged in routine and/or COVID-19 related service delivery at the clinical, area, field, or the headquarter level b) in position for one year or more c) ≥18 years old
Community members/ leaders	a) Palestine refugees i.e., registered with UNRWA b) residents of either Rafah or Jabalia camps c) ≥18 years old

- Recruitment

The Research Coordinator at UNRWA (SA) was in charge of recruiting key-informants (UNRWA staff and community leaders). SA contacted all potential key informants working at UNRWA explaining the study and inviting them to reply to the study team if they wish to participate. Also, SA contacted community leaders at each camp, explained what the study is about and explained all procedures of informed consent including the voluntary participation, the possibility to withdraw at any point and the absence of any benefit or harm from UNRWA for those who wish to participate or not. In order to avoid any feeling of coercion, SA told community leaders that they can confirm whether they would like to participate or not in a subsequent call. I contacted each participant who agreed to participate to inform him/her about the study and seek the participant's consent. Upon giving consent, I agreed with each participant on a date/time and means for carrying out the interview. The interviews were carried out for three months starting August 2020. Details of recruited participants are outlined in Table 14.

Table 14: Participants of Key-Informant Interviews

Participant category	Participant details	Number
UNRWA Headquarters (HQ) staff	Members of the COVID-19 Coordination Body (e.g. representatives from Protection, Planning, Security and Risk Management (SRM) among others) who were responsible for the overarching coordination and core administrative functions	4
Field and area level*	Staff at the health, social work, planning, protection, operations, and emergency departments in Gaza Field Office	9
Health and social care professionals (camp-based) *	Doctors (general or specialist), Nurses, Pharmacists, Head of health facility and coordinators, Social and relief service workers, and Psychosocial counsellors at either Rafah or Jabalia health centres	12
Community members/ leaders	Community leaders (e.g., political, religious or leaders of NGOs) and members	4

* Participants recruited from the Gaza Field Office and those working at the health centres were responsible for context specific operations and for ensuring the service delivery and continuity of health and social and relief services at Jabalia and Rafah camps.

- Data collection

All interviews were conducted remotely by me via MS-Teams or WhatsApp. Interviews were conducted either in Arabic or English and lasted 45 minutes on average. They were audio-recorded upon the participant's consent, translated, and transcribed, verbatim and at the same time, directly to English. The transcription was carried out by the field researcher MW and FF and were verified by me. Participants utilised their own phones or

laptops when interviewed. The interviews were carried out in a private place that the participant was comfortable at which was either at their office or their place of residence. Interviews with UNRWA staff members (at HQ, field, area and camp levels) addressed the policies and services that were enacted by UNRWA during the COVID-19 pandemic, the impact of the pandemic and the containment measures adopted by UNRWA on the Palestinian community, the arrangements to continue routine service delivery, including mental health and psycho-social support (MHPSS) and NCD services and the stressors and coping mechanisms practiced by staff during the pandemic. Interviews with community members focused on identifying community stressors and enacted coping strategies, trust in UNRWA and acceptability of the COVID-19 related health response, and ability and willingness to act on public health advice. The interview guide for the different participant groups is found in Appendix 5.

- Analysis

Using a combination of inductive and deductive approaches, thematic content analyses were performed on the data. The analysis of interview data was conducted in accordance with the steps outlined:

- Acquainting oneself with the dataset: This phase consisted of reading and rereading the transcripts and as well as occasionally returning to the original audio recordings. This phase aimed to immerse and familiarise oneself with the information offered in the interviews. Having conducted the interviews myself, I felt I was immersed in the data from the beginning.

- Coding of the interviews: Interviews were transferred to Dedoose Version 7.0.23 (SocioCultural Research Consultants, 2016) for analysis and coding. I coded the interviews and engaged in multiple discussions with KD to finalise the coding tree and add new codes as necessary. The codes were created to address the components of the conceptual framework on Social and Cultural Determinants of Mental Disorders and the Sustainable Development Goals (Figure 2) (Lund et al., 2018). A new code and subcodes were added to answer the second study question

regarding UNRWA's strategies. UNRWA's strategies were extracted using an inductive approach. The full coding tree is appended (Appendix 6).

- Generating themes and presenting the analytic narrative: I began by compiling relevant codes and generating initial themes based on them. I then began reviewing the generated themes, searching for patterns and overlaps, and weaving the narrative together so that the final list of recognised themes would accurately "convey the story" underlying the data. This entire process was iterative, as I went back and forth to the raw data to gain a deeper understanding and compile extracts that demonstrate the provided ideas.

5.2   Ethics

 All methods were carried out in accordance with relevant guidelines and regulations including the Declaration of Helsinki. We received ethical approval from Queen Margaret University (QMU) and UNRWA ethics committees. Regarding personal identifiers, we were only concerned with obtaining information regarding the participants' professional role and/or link with UNRWA, and in which camp the participants' work/reside. Data were stored in accordance with General Data Protection Regulation (GDPR) principles and the UK Data Protection Act 2018(UK Government, 2018)[3]. We sought informed consent from participants prior to enrolling them to the study. We assured participants that they have the right to withdraw from the study at any time and that participation did not entail rewards and will not affect their relationship with UNRWA.

For interviews that were audio-recorded, recordings were done on a digital voice recorder, with interviews being transferred to secure QMU storage immediately post completion; if notes were taken during interviews, these were transferred to or created in Microsoft Word

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[3] The Data Protection Act (DPA) of the United Kingdom relates to the domestic implementation of the EU GDPR and adapts the GDPR to the UK environment. In the United Kingdom, the use of personal data is governed by stringent restrictions known as "data protection principles." Personal data must be used fairly, legitimately, and openly, and only for specific and defined reasons, according to these principles. The information utilised should be relevant, limited to what is required, accurate, and up to date. Moreover, personal data should not be retained for longer than required, and adequate security measures must be implemented to safeguard it against unauthorised or illegal access, processing, loss, destruction, or damage.

and immediately also transferred to QMU storage post completion of interviews. Interview audio on the device was immediately deleted post transfer, and any physical notes were destroyed immediately post transfer. All audio recordings of interviews were destroyed once interviews were transcribed. All interview data were stored securely on Queen Margaret University servers and laptops. All data will be stored for a period of 5 years after the completion of the study.

For the survey, participants were invited to create fictitious identifiers, and were assured that these will be the only identifiers used in publications. All survey data were stored on Microsoft Azure cloud-hosting which features state-of-the-art security. Participant responses were stored in Azure Cosmos DB (a cloud database) and Azure Storage (cloud storage) and data can only be accessed by a co-located Azure App Service which runs the Co-Voices API (the web-application used for data collection). Researchers can access data by use of a secure back-office which contacts the API to retrieve data. All participant data received were anonymous and only named and authorised researchers that were part of the team had access to encrypted-password protected data.

5.3   Results

5.3.1   Key-informant interviews

The remote interviewing approach demonstrated efficacy in conducting meaningful conversations for gathering qualitative data from hard-to-reach conflict-affected communities. Compared to face-to-face interviewing, remote interviewing had benefits. For many participants, the interview provided them with a space to express themselves more freely, discuss the personal stressors they were going through during the pandemic and was also an opportunity to explore their emotions during such a crisis. This was mainly voiced by UNRWA staff who, according to several interviewees, had not previously had the chance to really reflect on how they felt and talk about the stressors experienced during the pandemic. In fact, they appreciated being asked about the stressors they faced at the personal and professional levels. Remote interviewing had many positive aspects but also presented some challenges, some of which were specific to the Gaza

context. The poor internet infrastructure in Gaza often resulted in interruptions during the interviews and, in some instances, led to whole interviews needing to be rescheduled to another day. Scheduling interviews with candidates located in different time zones (in this case, a 2–hour time difference), and having different working patterns meant that communicating with participants often had to take place early in the morning or during weekends (Jamal, 2020).

Results of the qualitative arm of this research have been recently published (Jamal et al., 2022) and the article is appended (Appendix 12). Eight major themes were identified. The first five themes answered the first research question pertaining to the impact of COVID-19 on the social determinants of mental health. The remaining themes were related to UNRWA's policies and strategies to address the vulnerabilities of PRs during the pandemic. Below is a detailed explanation of each.

- <u>Theme 1: Movement restrictions aggravated the economic situation of PRs in Gaza who in turn had no choice but to break lockdown rules to provide basic needs.</u>

Participants' accounts illustrated how the stay-at-home orders and closure of non-essential businesses deteriorated people's ability to generate income as many people in Gaza rely on daily-pay jobs. Due to the economic hardship, people had to prioritise spending, favouring buying food over face masks, for instance. Such practices increased the stress level amongst people as they struggled to make ends meet.

"The economic situation is very difficult, some people do not have the price of the face masks, and there are some people who are taking antidepressants and antipsychotic medications to get through this period." Community member_Jabalia 1

The unemployment rate was already high in Gaza prior to the pandemic. During the pandemic, employment surged even higher as many employers closed their businesses, increasing joblessness even further, and adding to the psychological challenges that people were going through.

"Yes, sure, it [employment] was greatly affected, and it is known that unemployment is high. The situation during the pandemic is abnormal, and the general situation got

worse, as many factories and shops have closed and suspended the work of their employees. This actually has worsened the psychological wellbeing of people as the unemployment rate increased. "RSS_Jabalia 3

UNRWA's staff, on fixed-term contracts, were not any different from other community members, as they were also in fear of earning less. The additional expenses that UNRWA endured due to the pandemic stretched its limited resources and threatened staff's salaries at some point.

> *"Recently, the Director of UNRWA operations in Gaza, said two days ago, that they will give the staff half a salary next month, due to UNRWA's limited resources. He also requested the support of donors and European countries to enable UNRWA to continue providing its services to citizens." Nurse_Rafah 7*

Moreover, the daily-paid staff at UNRWA were constantly threatened to lose their jobs or, at best, go through extended periods of reduced income. Few participants belonging to this staff category mentioned that job insecurity reflected badly on their job performance.

> *"Gaza was significantly affected by UNRWA's economic crisis… This also has affected the staff efficiency, in one way or another because there is no job security…. the daily-paid staff was affected at the beginning of the pandemic, as some of them have been laid off… As a part-time psychosocial worker, there is no job security and I am always worried that whether UNRWA will renew my contract or not and this affects the quality of the work.". Psychosocial counsellor- Rafah 5*

As the pandemic progressed, and due to pressure exerted from this staff category, UNRWA managed to provide 50% of their salaries at times when they were not working.

> *"Daily paid staff are only paid when the when they work, but provisions were put in place to provide 50% of salaries to daily pay staff who weren't working". HQ-3*

Later on, many daily-paid staff at UNRWA were allocated to new tasks such as assisting in food parcel distribution and medicine home delivery; both of which responses were implemented later on in the pandemic.

Due to the hard socioeconomic status that people in Gaza were going through during the pandemic, they were unable to tolerate extended periods of lockdown. This pushed Palestinians to break the lockdown rules in order to go to work and provide for their families. Interview participants mentioned that many had to prioritise earning a living over protecting themselves from contracting the virus.

> *"The Palestinian refugee was affected a lot as the local authority closed areas for restricting the transmission of disease… this negatively affected the availability of the basic needs for people, such as food and drink… so people became confined to homes with big stress. People in Gaza are already living difficult lives, and this pandemic has made the situation worse… The difficult economic situation, made people ignore the threat of the virus because they needed to provide the basic needs for their families at any price". Social worker-Jabalia 3*

> *"Citizens in the Gaza Strip have been deprived of employment opportunities due to the division and the blockade, and most of them depend on their daily work. For example, I am the head of a family, and I cannot quarantine myself and don't go out to work for my children and my family." Community member_Rafah 2*

The COVID-19 pandemic increased the number of people in Gaza suffering from food insecurity. Reduced income impacted Gazan's ability to buy food and UNRWA's in-kind assistance was delayed for those eligible and was only given to a segment of the society while in reality, the majority of people were in need of such aid.

> *"Many people will die of hunger if they do not go to work. For example, if there is closure in Gaza including the markets, people cannot stay at home, as they want to work and gain money for their families. As a result, people break the lockdown measures because it is difficult to stay at home, and people don't have any other sources of income but their jobs" Community member_Jabalia 1*

"Definitely this pandemic has affected food security and as I mentioned before, the majority of the Palestinian people live on an irregular daily work. A person, for example, cannot leave his job, stay at home and deprive his family of many basic needs just to abide by the protective measures against coronavirus. The economic situation is very difficult for many people". Social worker-Jabalia 2

"People were stuck at home due to Coronavirus and this in itself has affected people negatively, as they don't have enough food. I am talking about the majority, almost two-thirds of the community." Psychosocial worker_Jabalia 4

Interviewees mentioned that the authorities were very strict about the stay-at-home orders and were taking extreme measures to enforce home confinement and curb the spread of the virus.

"Sometimes people were quarantined at home and the authorities would have a policeman at the house door for a period of fourteen days until their test results were negative. The Ministry of Health was in charge of testing and followed on this matter". Gaza Field Office staff-4

Food insecurity impacted people who were under forced confinement at home as there was no contingency plan by the local authority to regularly provide food for such families. Even those who were quarantined at hotels and isolation centres, which were managed by the local authority only, complained about the food, saying that the food served was not fresh nor was it nutritious.

"Frankly speaking, unhealthy meals were provided to patients in the governmental isolation areas. Also, if there was an infection, the authorities will quarantine the whole building and keep everyone locked up, without providing them with their food needs." Psychosocial counsellor_ Jabalia 4

"People were quarantined for a week and no one asked about them. They were trying to call the free number, but there was no answer… they [UNRWA staff] answered their calls, but after 10 days, then they brought food and aid. They provide aid to the quarantined, but frankly, irregularly. A large family needs to

eat every day and only one meal is not enough. For example, my sister was quarantined, the first day they brought her rice, the second day they brought her cheese and milk, but what about the children? Where is the bread, where is the flour, where is the milk? Third and fourth day they did not bring anything, and so on". Community member_Jabalia 1

As a result, violent clashes between the police and people were seen, as people were trying to break the forced confinement. Eventually, the local authorities had to ease the lockdown measures, especially because the authority was incapable of meeting people's increased needs.

"There were conflicts between people and the police for not complying with the instructions due to COVID… people ran away. People were suffering both ways, whether quarantined at their homes or at the government isolation centres... In short, the pandemic affected three aspects: social, economic, and psychological aspects." Psychosocial counsellor_ Jabalia 4

"Police had to use force with those people (breaking lockdown) because they didn't want to abide by the preventative measures imposed by the authorities because they can't stay at home and do nothing… I noticed when I was working in the field that people didn't abide by the lockdown. Therefore, the government in Gaza eased the procedures and started to implement the COVID-19 coexistence plan". Social worker_Rafah 2

- Theme 2: The weak infrastructure, poor housing conditions and overcrowding added to the psychological distress and put vulnerable people at risk, especially as overcrowding favoured COVID-19 transmission.

Interviewed participants mentioned how the Gaza strip is densely populated and houses are overcrowded. Also, several interviewees talked about the lack of proper services and infrastructure within the Strip. Lack of ventilation, poor lighting, unreliable electrical

supply, and poor internet connectivity were examples of environmental conditions that were mentioned in the interviews to affect people's wellbeing and health in general.

> *"We have an abnormal population density in Gaza Strip. For example, we work in camps, and houses are very narrow. In one house there are ten or eleven people, or more, so imagine how difficult to quarantine people in houses like these. Thus, you find people standing at the doors of their houses. The houses are bad and there is not enough electricity, but anyway this is the bitter reality" Social worker- Rafah 3*

> *"The houses are small and in poor condition, there is no ventilation or electricity". Gaza Field Office staff 4*

These hard living conditions were also reported by UNRWA staff, especially females, as an obstacle to carry out work-related tasks and a source of stress. Female staff members reported challenges related to juggling their work with housework, childcare and attending to family needs while performing work-related tasks using unreliable internet connection.

> *"It greatly affected me to stay at home, because I have small children and sometimes, they are not able to provide me the right atmosphere for work. Just working at home has affected me a lot, and sometimes I get busy with some guests and family, and at the same time my manager calls me asking me for a specific task to fulfill. This affects me and causes a big tension on me. Often when I go to my family house, I take my laptop or my cell phone with me because I might need it to work there. Despite all of this, we were implementing what was asked of us, but at the expense of my time, my children and my home". Social worker_Jabalia 2*

> *"We were doing our job online via the Internet despite the frequent internet cuts, and it was very difficult for us". Social worker- Rafah 4*

Interviewed UNRWA staff mentioned that over-crowdedness favoured virus transmission, worsened mental health and posed a health risk for older adults and NCD patients who could not distance themselves away from other family members.

"It [COVID-19] will be spread in a very fast way because of the highly populated areas, we are talking about the camps. I don't know if you know how it is in the refugee camps in Gaza, it is very crowded. And if we are talking about physical distancing, it will not be possible at all. Even in the same house, you will find 10-12 persons living in a small space. It's very difficult to protect the elderly or people with NCDs. Because of that, if there is local transmission, the local authorities should announce lockdown. This is the only way to protect these people. It is not enough that these people stay at home, but even their children because they can bring the virus to them". Gaza Field Office staff 1

The weak infrastructure and the poor tertiary health services in Gaza meant that patients with chronic diseases would have to leave the Strip to receive treatment. During the pandemic, the Israeli forces tightened the blockade even further, making it more difficult for this group of patients to receive proper health care. For example, it was reported, that the care pathway for NCD patients was disrupted during the pandemic. Exit permits outside the Strip became more difficult to obtain and Gazans, mainly cancer patients, who were in need of medical treatments outside the Strip, faced dramatic limitations in accessing proper care.

"In terms of health, some patients have been affected, like cancer patients who want to get treatment outside Gaza, for example in Jerusalem, and that requires complex coordination with the concerned authorities" Nurse_Rafah 7

- <u>Theme 3: The pandemic created social tension, disrupted social cohesion and family relations.</u>

Interview data showed that one of the stressors that people went through during the pandemic was the fact that physical and social distancing separated people from their social support network. The concept of physical and social distancing seemed foreign for Palestinians as they usually draw on the social support of friends and family to overcome emergencies.

"We are a conservative society, and the family relations are great, but the COVID-19 pandemic was a shock to the Palestinian community. New concepts were introduced to people that were not desirable for them, such as social distancing, not shaking hands, wearing masks and gloves on a daily basis, preventing weddings, condolences and praying in mosques, many things. But we must change our perceptions and behaviours in order to protect ourselves from this disease." Community member_Rafah 2

A small number of interviewees mentioned social cohesion and support as a strong asset of the Gazan community and that the health crisis did not stop people, at the individual or community level, from helping each other.

"There was coordination between some associations and UNRWA. Some NGOs provided quantities of food parcels and medicines… this is what I saw in reality… neighbours helped too. In Gaza, there is family interdependence, even if UNRWA cannot afford aid, people help each other". Community member_ Jabalia 1

However, the majority of participants had opposing views. UNRWA staff had the impression that the social stigma in relation to COVID-19 was common in Gaza. The stigma was reinforced through malpractices by the health authorities when dealing with a newly identified or suspected case, the spread of misinformation, and the day-to-day interactions between members of the community. As a result, participants suggested that the stigma might have altered people's health seeking behaviours, reduced social interactions and support during the pandemic.

"I think there is a stigma in the community due to a number of mistakes made when dealing with cases by local authorities… when someone is tested positive for COVID-19, the local authorities go to pick him/her with an ambulance and a police car, so you can hear the ambulance sirens all the way to them and they also take their family members to be isolated in isolation centres. Accordingly, this caused a very negative reaction from the community. It made it seem like it is a charge to be infected with COVID-19". Gaza Field Office staff 5

"Honestly, yes, they're suffering from stigma, and that's putting psychological pressure on them. People tend to isolate the infected people with COVID-19 and they are afraid to make any contact with them even after they recover". Psychosocial counsellor_Jabalia 4

"We started to feel another wave of stigma and currently suspecting it, when we resumed our services, the number of patients attending our clinics with respiratory symptoms (suspected cases) was quite low. We are following this up on a daily basis and tracing such cases. It seems that patients with symptoms are afraid to attend the clinic, because they know if we suspect they are infected, they will be transferred to hospitals to make a PCR test for COVID-19 to determine whether they are positive or negative. It's only a possibility and I do not have any accurate data in this regard". Gaza Field Office staff 5

Participants also mentioned that during the pandemic, family disputes became very common. Several explanations were given by different participants such as, over-crowdedness and financial hardship. For some, home-confinement was more traumatic as they associated the COVID-19 lockdowns with the Israeli-imposed curfews.

"Of course, home quarantine generates a lot of family violence as a result of psychological pressure on people. Home quarantine is not easy especially when it is obligatory as this reminds us of the first Intifada and the curfew by the Israeli occupation". RSS_Jabalia 3

The stress generated during lockdown was reportedly responsible for disrupting family relations, increasing gender-based violence. Interview data with UNRWA HQ staff suggested that gender-based violence (GBV), particularly violence against women and girls, became more common during the pandemic, mainly due to home confinement and forced lockdowns.

"Data indicates that we have an increase in domestic violence related to abuse within the family particularly on females. I think that is also affecting the mental health during the pandemic". Headquarter staff_1

- <u>Theme 4: Accessing remote education was challenging as people's resources were limited thus causing distress amongst children</u>

The education process got disrupted during the pandemic. Remote learning required proper resources and infrastructure to carry it on. Interviewees said that UNRWA schools were offering remote learning as school were closed most of the year 2020. However, not all students were able to access remote learning in a resource-scarce setting such as Gaza. First, the internet connection is usually very bad and parents could not afford buying laptops or iPads for their children.

> *"I was hoping UNRWA would do more, but you know in Gaza, we have limited resources. However, at least, to provide students with school books, how students can study without having textbooks. Okay they are available on the internet, but in Gaza, not all people have mobiles, ipads or laptops. Also, the distant learning curriculum is very difficult and intense and not all parents are educated. UNRWA currently started to distribute school books to parents, as there's nothing more they can do." Psychosocial worker_Rafah 5*

In addition, a school principal in Jabalia mentioned also that some parents do not have smart phones which could have been a replacement in the absence of computers and other expensive devices.

Interviewed MHPSS staff noted that children showed elevated levels of aggression because they were confined at home with limited opportunities to learn and play.

> *"This pandemic has greatly affected children and they were showing very violent behaviours without control. There were no schools, no electricity, no technology, and not all parents are educated to help their children with distance learning". Psychosocial counsellor_Jabalia 4*

> *"Parents also have noticed negative behaviours among their children as schools and streets are usually the only space for children to play and chill out. I always recommend people to spend more time with their children, engage with them in doing useful things using simple materials" Psychosocial worker_Rafah 5*

- Theme 5: The work environment within UNRWA remained supportive and the community's view towards UNRWA remained appreciative

Within UNRWA, staff felt overwhelmed at times due to the nature of problems they encountered and the shift to remote modality in providing services. Nonetheless, the sense of belonging to the community they served and the appreciation they received kept them motivated.

"First, you will take the burden of cases to your home, so we don't have a break. Listening to tough stories, like sexual assault cases, has put us under a lot of pressure. Second, when we contacted cases and listen to their problems, all we can do is to give them some exercise, education and support". Psychosocial counselor_Jabalaia 4

"*Working from home is not an easy job and it is a big challenge for me and my family to provide the services required, in addition to the many tasks, we were asked to achieve… we serve our people, this is considered a patriotic and religious duty." Social worker_ Jabalia 3*

"It was a new experience to work remotely, especially providing logistics to facilitate work, adhere to work schedules, open e-mails, and mobile phones as well, and communicate with the field supervisor and the readiness of homes as not all homes are fully prepared to connect to the internet… it was not easy and this was a challenge for some colleagues at work." Social worker_ Jabalia 1

"As Palestinians, we feel with the people and those around us and want to help them as much as possible". Social worker- Jabalia 2

"I always say that, what distinguishes UNRWA from other institutions, that employees serve their people and their relatives. For example, I deal with my family and people when I serve them, because I work in my country that gives me more integrity and sense of belonging". Gaza Field Office staff_4

At the level of UNRWA, participants mentioned that staff supported each other very much during the pandemic whether officially, through planned activities, or at the personal level by conducting care calls to check up on each other. The moral and logistic support received from colleagues and from the higher administration boosted the staff morale and enhanced their job performance.

"...It [the pandemic] made them [UNRWA staff] closer to each other and they shared their concerns. I did a lot of things to support the staff "you are great" event, psychodrama and a breakfast gathering. I think that the relationship between the staff is now way better than before, as they have time to sit and talk to each other. During the pandemic, staff even were task-shifting to relieve the pressure from one another" Psychosocial counsellor_Jabalia 4

"Moral support yes and this support really gave us a big push forward to continue working. Our administration at first announced if anyone of you is sick or afraid of getting sick from this disease, he/she may not work and can simply stay at home. But we insisted on working, since this is a humanitarian act that we cannot leave. The administration was very supportive as the line manager and the director of our department were in contact with us. Especially our department manager who was constantly communicating with us, and this indicates his sincerity at work. Personally, I spoke to him one day and informed him that my car at work was broken and I could not work on this way, he was very understanding and within an hour, he lent me his car which he personally uses for work and gave it to me so that I could continue my work to the fullest." Social worker_Jabalia 3

"We have received moral and logistical support explicitly. I was in the field and the administration called me personally to ask about if I face problems at work. As for me, I am pleased with this thing. In addition to their concern for the employee's health. This is enough moral support to continue working to the fullest. The logistical support was also sufficient, as they requested that the car be air-conditioned to relieve pressure." Social worker_Rafah 4

"Directors come to check on us, appreciating the efforts we exerted. When the surrounding people morally support us, this has a positive impact on our work... We are not looking for financial remunerations, we only want others to appreciate our efforts and that we put our lives at risk. The moral support is the most important thing for us." Pharmacist_Rafah 6

UNRWA also supported staff through policies to protect the physical and mental wellbeing of those who are vulnerable. For instance, elderly employees and those with chronic health conditions were given the choice during the local transmission of the virus to either work from home or take a sick leave until the end of the pandemic.

"(during the period of community transmission) UNRWA was very flexible with both staff with chronic diseases such as NCDs and elderly staff members. These two groups can stay home, if they want to" Nurse_Rafah 7

"Staff members didn't have to work during the emergency, in case they are afraid for their health or they have very poor immune function. Even the elderly aged over 50 years with respiratory problems, they can submit a medical report of his/her condition to the administration to either work from home or take a break until the end of the pandemic. HC_Rafah 5

For community members, UNRWA is perceived as a pillar of stability that provides necessary services and support for Gazans; a view that was shared also by UNRWA staff as they felt people's appreciation throughout the pandemic

"The percentage of refugees in Gaza Strip is very huge, and UNRWA represents the main pillar on which they depend on, especially in light of the conditions in which Gaza Strip lives such as: siege, poverty, power cuts, division and many problems." Community member- Rafah 2

"UNRWA is considered as a pillar... our lives depend on UNRWA and the services it provides whether it is health services, coupons for food, education etc. We rely on UNRWA in everything. We fully trust UNRWA even now during the pandemic" Community member- Jabalia 1

"Through the feedback we've received in general, people were very satisfied of our services. Even more than that, we have felt great appreciation from the community". Gaza Field Office staff_2

- Theme 6: UNRWA ensured safe access to health care by establishing medical points and introducing telemedicine

With a focus on preventing COVID-19 transmission, UNRWA maintained access to health services by revising its mode of service delivery; establishing medical points and introducing telemedicine services.

Inside the health centres, UNRWA Gaza ensured social distancing and placed handwashing stations as well. UNRWA converted nearby schools into medical points and established a triage system in order to isolate patients presenting with respiratory symptoms. Interviewed UNRWA staff and community members reported positive feedback, saying that community members showed a great deal of acceptance of this new mode of service delivery and that was reported to be related to the trust towards UNRWA and the impression that such measures were put in place to protect them.

"We were concerned of the community's reaction to such measures in terms of separation of patients in schools; people may feel that they are stigmatized or they're not getting the required care. Fortunately, everything was going pretty smoothly and beyond our expectations. The community's acceptance depends on the previous relationship with people and their trust in UNRWA." Gaza Field Office staff_6

"Overall, our community is aware that such measures are taken for their interest in the first place. Thankfully, people started to accept all UNRWA's measures, whether in health, education and the other fields. People also support and appreciate the staff efforts and thankfully our services meet their expectation." Pharmacist-Rafah 6

UNRWA introduced a telemedicine service in order to limit foot traffic at health centres, thereby limiting the spread of the virus amongst community members and staff. According

to interviewees, UNRWA provided the Clinic Friends' Committee with phone numbers and names of physicians that are on call so that the committee in turn distributes to community members. Patients could call, for free, UNRWA health centres and receive consultation over the phone and then collect the medicine from the health centre later on. Those that required urgent medical attention were also visited at home by emergency teams or asked to attend the health centre for an in-person service.

> *"...for the treatment of children or adults, there was a free number that they [UNRWA] gave it to everyone. In this regard, we held a meeting in the committee and we took these free numbers and posted them on social media and every means that can reach patients, so that people know that there is a free number for the clinic, and through this number a person can call UNRWA and tell them about their illness and then provide them with treatment. Sometimes doctors visited patients at home but, of course, this was for emergency cases". Community member_Jabalia 1*

Views of community members around remote service delivery differed with few saying that they preferred an in-person health service.

- <u>Theme 7: UNRWA prioritised essential services for vulnerable groups</u>

Older adults and NCD patients, known to be at a greater risk of severe and fatal COVID-19 disease were supported by UNRWA. Measures to protect both groups from contracting the virus were put in place. In addition to the internal policies to protect staff (For example, by introducing flexible working schedules for vulnerable staff and allowing them to work from home), UNRWA also prioritised patients with NCD conditions. By introducing home-delivery of life-saving medications, patients with NCDs were asked to stay at home and had their medications delivered to their place of residence instead of attending in person to the health centres. This was not only to protect them from contracting the virus, but to ensure that there was no interruption of treatment.

> *"UNRWA was very supportive during the pandemic. I am only 45 years old and UNRWA started delivering my medication for hypertension ever since the*

pandemic started. UNRWA staff were putting themselves under risk in order to deliver medicine to us at home. The delivery was prompt and everyone received his medications on time" Community member_ Jabalia 1

"They [NCD patients] stopped attending the clinic on the 24th of August. Before this period, not all NCD patients can come to the clinic, only those aged 42 or below and who are in a good health. Currently, we do not allow any of them to attend the clinic again, alternatively we are following them up over the phone… Also, we are delivering medication packages to NCD patients' homes in order to reduce the number of patients coming to the clinic." Psychosocial counsellor_Jabalia 4

Medical visits became less frequent due to UNRWA's scaling down of non-urgent visits. Consequently, primary and secondary preventive measures of NCDs were halted. This disruption in the care process suggests a potential worsening of the chronic conditions along with the mental wellbeing of the patients.

"…In general, we suspended all the regular medical tests for patients with chronic diseases." Nurse_Rafah 7

Particularly during the transmission period, UNRWA prioritized NCD patients over other patient categories labelled as less urgent cases. A psychosocial worker from Jabalia camp said that she received complaints from patients for not receiving proper medical attention because they were not labelled by UNRWA as critical cases.

"Because my work involves communicating with people, I receive several complaints. You know, patients are not limited to NCDs and pregnant women; we have many patients with other diseases who must come to the clinic to get the necessary treatment. In my opinion, I think it would have been better, if we applied work shifts, three shifts instead of two, to enable all patients to come to the clinic to get their treatment or to enable all patients, not just NCDs patients to access the telemedicine service, like patients who need general medications, like

ointments and flu medicines. There is also a category requires care, like those who need to change wound or surgical dressings." Psychosocial counsellor_Jabalia4

At the maternity and child health programme, visits were restricted to high-risk pregnancies and vaccinations for young children. Other services were either halted or followed up remotely.

"We've also restricted the attendance of pregnant ladies for the antenatal care for the high-risk pregnancies only. For low-risk pregnancies, our midwives will contact them, based on their appointments, to ensure that everything is under control and they follow-up the pregnancies remotely." Gaza Field Office staff_6

"We reduced the frequency of visits for maternal care. For infants, if we stopped the vaccination, it was going to be problematic. The mortality risk from not taking the vaccine would have be higher than that due to the pandemic. Therefore, vaccination continued." Gaza Field Office staff_1

In addition to supporting people who were vulnerable on medical grounds, UNRWA also continued supporting those who were socio-economically vulnerable. Usually, UNRWA's Relief and Social Services Department provides food parcels for registered refugees who qualify according to an internal vulnerability checklist. During the pandemic, UNRWA continued to distribute food parcels but had to improvise a new distribution method that involved minimum contact in order to protect the community as well as the staff. In order to do that, emergency teams were formed that included staff working in different departments. These staff members assembled elements of the food basket together to be home-delivered. However, the reconfiguration of the distribution process incurred delays and that negatively affected the people who urgently needed such assistance. The perception of delay in distributing food parcels was shared by UNRWA staff and community members.

"There was also a delay in delivering subsidies (food parcels every 3 months) to people for certain reason, as I got to know. Accordingly, this was a problem for

people, who depend heavily on such food aid… people live under very difficult circumstances". RSS- Rafah 5

"The biggest problem is the food basket (termed by lay people as "couponat"). This assistance has stopped for months, and some people are completely dependent on it…There is a delay in providing health services and food aid." Community member_ Rafah 2

Community's perception around the distributed food parcels was mixed. Few participants from Jabalia and Rafah camps had the impression that some of the distributed food parcels were expired or close to their expiration date and the quantity of the food distributed was not enough. Others had the opposite view and were generally appreciative.

"… UNRWA increased the quantities of food parcels and delivered medicines, and any request that people asked for from UNRWA was met. This is what I saw in reality." Community member_ Jabalia 1

- Theme 8: UNRWA prioritizing patients with critical conditions to receive face-to-face counselling, while others were counselled remotely.

In general, all participants perceived the pandemic as a key contributor to the worsening of mental health. UNRWA prioritised people experiencing protection issues and at risk of suicide and granted them permission to receive counselling face-to-face. Patients were referred internally to other departments or externally to partners, depending on the severity of the case and the needs of the patient. The issue of specialists' availability within UNRWA was voiced by few participants as a necessity to deal with the increased number of people require special attention and care presenting to the health centres.

"… at the beginning of the pandemic, Gaza registered a large number of [mental health] cases... we coordinated with doctors and triage nurses that urgent cases, such as suicide and protection cases must come to the clinic because they require direct intervention… Before the pandemic, unfortunately there were only one or two psychiatrists to deal with the cases having mental issues in all of UNRWA's

clinics in Gaza. This psychiatrist will come to the clinic once or twice a month. We receive many cases that require psychiatrist consultation and therefore, we requested to have at least one psychiatrist at the clinic. May be our doctors can prescribe psychotic medications, but some cases require the intervention of a psychiatrist." Psychosocial counsellor_ Rafah 5

UNRWA's response in Gaza was not enough to alleviate the economic and social instability. Certain population groups were perceived to have been more acutely disadvantaged by the pandemic. Increased violence, anxieties and worries were observed amongst women, children and workers in the informal sector and their mental health needs were not entirely met.

"... I say we're relatively limited in what we can do, you've got too many people in Gaza with PTSD given what they've gone through in the last 20 years, so we have to be realistic about our ability. We weren't able to meet the needs before this. So, we're less equipped to meet increased needs during it. They are massive needs and we do what we can, but we were under no illusions." Headquarter staff 3

In the wake of the pandemic, UNRWA reached out to the community by circulating the contact numbers of psychosocial counsellors and social workers on social media platforms, broadcasted general safety messages through its TV channel, and printed visual aids and made them available at health centres.

"We have circulated our numbers, so that refugees can contact us whenever they need a consultation or help in this regard [MHPSS]. We divided Gaza into five areas; North Gaza, city of Gaza, middle of Gaza, old city of Gaza and Rafah and for each area, there is a psychosocial counsellor, so any refugee has any inquiry or concerns can contact them". Head of Health Centre_ Rafah 1

UNRWA adopted a hotline service for people to seek assistance during the crisis. That included a special hotline for GBV cases. GVB victims were dealt by counsellors and

some women who required immediate intervention were referred internally to the Protection Department for further assistance.

> *"… we have a hotline to provide social support and a hotline for GBV cases; women who are subjected to gender-based violence. We were receiving calls from people who exposed to gender-based violence and such cases were transferred to the protection department. We installed the hotline to enable people to contact us to get our guidance and help, even if we can't reach them." Headquarter staff_2*

Psychosocial counsellors had the impression that they were not able on their own to meet the high demand for MHPSS services. They were later assisted by social workers from the Relief and Social Services Department.

> *"We received many protection and violence cases in June and July and we have no time to handle all of them." Psychosocial counsellor_Jabalia 4*

Both psychosocial counsellors and social workers in Rafah and Jabalia camps mentioned that their work scope included providing counselling and awareness to patients presenting with respiratory symptoms (including those identified as infected with COVID-19), to NCD patients, and to other beneficiaries who visited the clinic up until the period of virus transmission, when all services became delivered over the phone. Staff support was also provided by psychosocial counsellors.

> *"… You know, during the lockdown, all the family members were staying at home and this definitely had increased family problems, violence, GBV and suicides… The psychosocial workers also started in March to provide support and conduct self-care and stress relieving sessions for all staff members including cleaners and clerks". Gaza Field Office staff 5*

5.3.2 Online Survey

Compared to collecting interview data remotely, collecting survey data proved somewhat difficult. The absence of a face-to-face interaction with potential participants created challenges at the level of recruitment, had a negative impact on participants' motivation

and cooperation, forced participants to rely on their resources (e.g. mobile phone and internet connectivity in this case), created and resulted in low response rate and high level of survey-breakoff. A total of 48 community members started the survey, however only 16 participants completed the WHO-5 Index. Table 4 displays the descriptive statistics for the survey participants (n=16). Looking at Table 15, all of the 16 participants had secondary education or higher and 85.7% live in an overcrowded residence (described as having two or more co-residents per room).

Table 15: Descriptive characteristics of the sample population n(%)

Socio-demographics		
Gender	Male	9 (56.3%)
	Female	7 (43.8%)
Setting	Rafah	11 (68.8%)
	Jabalia	5 (31.3%)
Age (Mean, SD)		39.5±7.26
Marital status	Single/ Separated or divorced/ Widowed	4 (25.0%)
	Married	12 (75.0%)
Educational level	Primary education or less	0 (0%)
	Secondary and Technical	7 (43.8%)
	University degree or higher	9 (56.3%)
Head of household	Yes	11 (68.8%)
	No	5 (31.3%)
Changes in accommodation due to COVID-19	Had to move accommodation	7 (46.7%)
	Lost my accommodation	2 (13.3%)
	Isolated at my accommodation	2 (13.3%)
	Isolated at isolation centre	0 (0%)
	Nothing has changed	4 (26.7%)
Crowding Index	< 2	2 (14.3%)
	≥ 2	12 (85.7%)

Looking into stressor items experienced during the pandemic, Table 16, and drawing from 16 responses, the majority did not feel safe to leave the house and the majority were not employed or in education at the time of the survey. 9 out of 16 participants spent more than 2 hours/day outside. This included time spent at balconies and any outdoor space.

Table 16: Responses of community members to the different stressor items experienced during the COVID-19 pandemic (n=16)

Stressor items		Community members n (%)
Worry that medicine would run out		2 (12.5%)
Discontinuation of treatment		2 (12.5%)
Do not feel safe within your house		5 (31.3%)
Do not feel safe to leave the house		9 (56.3%)
Do not have access to an outdoor space		6 (37.5%)
Time spent outside	<1 hr.	3 (18.8%)
	1-2 hours	4 (25.0%)
	2-4 hours	4 (25.0%)
	> 4 hrs	5 (31.3%)
Is not currently employed or in education		13 (81.3%)

Regarding food insecurity, of the 16 responses, 1 participant reported not having enough food to eat, 5 were concerned they would run out of food, 4 don't have enough money to buy more food, 2 participants cut down the size of their meal, 4 skipped a meal and 2 participants went to bed hungry and 8 participants reported not eating enough from certain foods (Table 17). When computing the score of food security, 8 participants were moderately food insecure and 8 were food secure. It is worth mentioning that none of the participants was severely food insecure. Although this seems a bit surprising at first glance however, participation in the survey was possible for respondents owning a smart phone. Therefore, the selection bias, due to the nature of data collection, might have skewed the results.

Table 17: Responses of community members in Rafah and Jabalia (n= 16) to different food security indicators experienced during the COVID-19 pandemic:

Food security	Community members n (%)
Which of these sentences applies the most to the food eaten by your household during the last two weeks?	
We had enough to eat of the kinds of food we wanted	14 (87.5%)
We had enough to eat but not always the kinds of food we wanted	1 (6.3%)
Sometimes we did not have enough to eat	0 (0%)
Often we did not have enough to eat	1 (6.3%)
In the last two weeks, was there a time when you were concerned that you would run out of food for your household?	
Yes	5 (31.3%)
No	11 (68.8%)
In the last two weeks, has it ever happened that the food you bought was not enough and you didn't have enough money to buy more?	
Yes	4 (25.0%)
No	12 (75.0%)
Were there any foods you feel your family did not eat enough of in the last two weeks?	
Yes	8 (50.0%)
No	8 (50.0%)
In the last two weeks, did you or any other adult in your household ever cut the size of your meal because there was not enough food?	
Yes	2 (12.5%)
No	14 (87.5%)
In the last two weeks, did you or any other household members ever skip a meal because there was not enough food?	
Yes	4 (25.0%)
No	12 (75.5%)
In the last two weeks did you or any member in your household not eat for a whole day or go to bed hungry because there was not enough food?	
Yes	2 (12.5%)
No	14 (87.5%)

	Food Security Score	
	Food secure (0-1)	8 (50.0%)
Food security level	Moderately insecure (2- 5)	8 (50.0%)
	Severely insecure (6- 7)	0
Average Food security Score		1.69 ± 1.62

As for the Wellbeing Index, only 2 of 16 participants had good wellbeing (a score ≥ 13) (Table 18). When looking into individual responses, at least 13 respondents were feeling cheerful, relaxed and wake up fresh and rested most/all of the time. More negative responses were seen to questions about feeling active vigorous and having daily life filled with things that interest them. This could be explained by the fact that people were confined at home due to strict movement-restriction measures that the local authorities imposed during the pandemic.

Table 18: Responses of community members in Rafah and Jabalia (n= 16) to the WHO-5 items

	Community members (n)	Community members (%)
Over the last two weeks, I have felt cheerful and in good spirits:		
All of the time (0)	3	18.8%
Most of the time (1)	10	62.5%
More than half of the time (2)	1	6.3%
Less than half of the time (3)	1	6.3%
Some of the time (4)	1	6.3%
At no time (5)	0	0%
Over the last two weeks, I have felt relaxed and calm:		
All of the time (0)	4	25.0%
Most of the time (1)	10	62.5%
More than half of the time (2)	0	0%

Less than half of the time (3)	0	0%
Some of the time (4)	2	12.5%
At no time (5)	0	0%

Over the last two weeks, I have felt active and vigorous:

All of the time (0)	4	25.0%
Most of the time (1)	6	37.5%
More than half of the time (2)	4	25.0%
Less than half of the time (3)	0	0%
Some of the time (4)	1	6.3%
At no time (5)	1	6.3%

Over the last two weeks, I woke up feeling fresh and rested:

All of the time (0)	2	12.5%
Most of the time (1)	11	68.8%
More than half of the time (2)	1	6.3%
Less than half of the time (3)	0	0%
Some of the time (4)	1	6.3%
At no time (5)	1	6.3%

Over the last two weeks, my daily life has been filled with things that interest me:

All of the time (0)	4	25.0%
Most of the time (1)	6	37.5%
More than half of the time (2)	2	12.5%
Less than half of the time (3)	2	12.5%
Some of the time (4)	2	12.5%
At no time (5)	0	0%

WHO-5 Wellbeing Index		
<13 poor wellbeing	14	87.5%
≥ 13 good wellbeing	2	12.5%
Average wellbeing score	6.63± 5.67	
Answered 0-1 to any of the wellbeing item	14	87.5%

When community members were asked to assess the performance of UNRWA's Health Care Providers (HCP) during the pandemic, 15 out of 16 respondents rated the level of competence, confidentiality and politeness as average and above (Figure 6). A total of 13 responses were either in the "very unsatisfied" or "unsatisfied" category with the highest number of negative responses towards "clarity and honesty "and "active listening", followed by "contact time". Again, the number of responses is too low to make any inferences nonetheless, as UNRWA introduced the remote modality of health service delivery during the pandemic, it is quite important to capture people's feedback towards such an approach, in future research, especially if such a modality will remain.
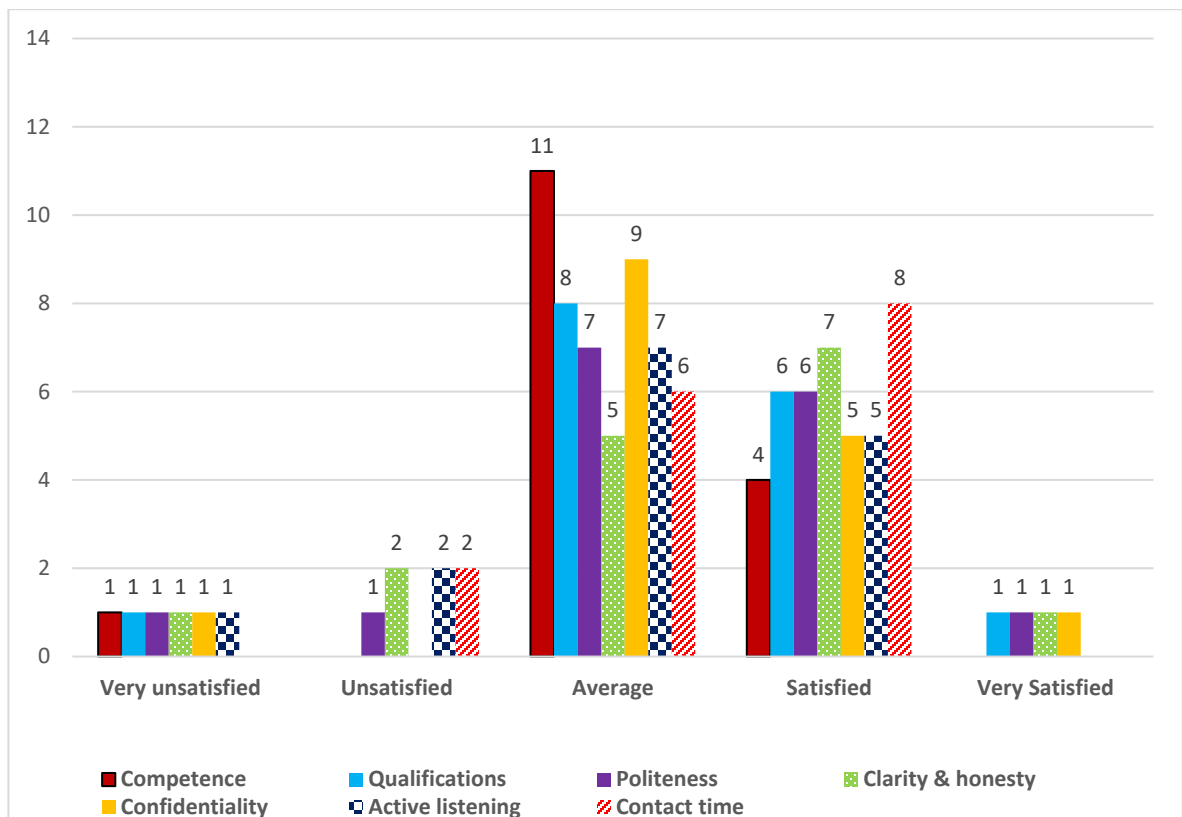
Figure 6: Frequency of Community's Response Towards HCP Staff Performance During COVID-19 Pandemic (n=16)

When community members were asked to assess the performance of UNRWA's Relief and Social Services staff (RSS) during the pandemic, all participants rated "clarity and honesty" and "competence" as average or above (Figure 7). There were a total 8 responses in the categories of "very unsatisfied" and "unsatisfied" with the highest negative responses in the aspect of "confidentiality".
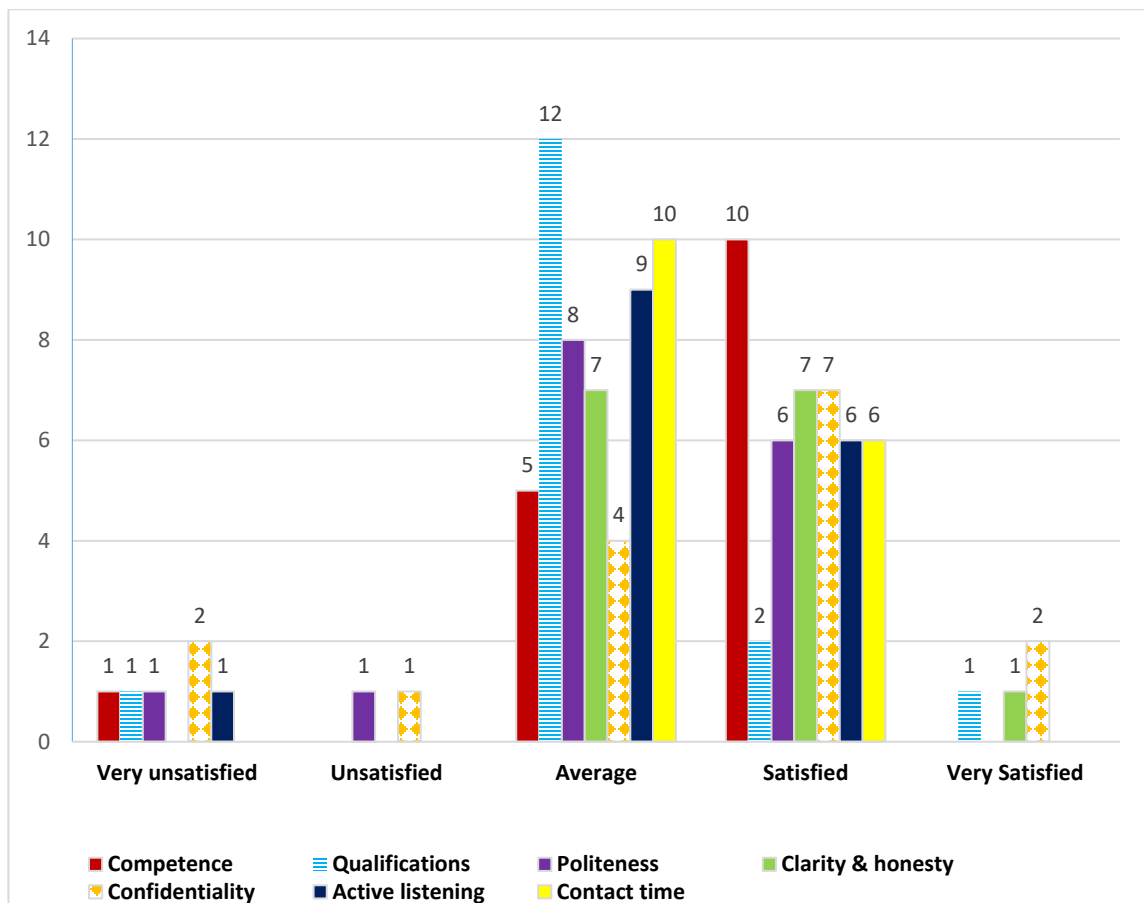
Figure 7: Frequency of Community's Response Towards RSS Staff Performance During COVID-19 Pandemic (n=16)

Although there are some slight differences between people's feedback on different aspects of HCP and RSS staff performance (Figure 8), yet when comparing mean responses of community members on the performance of RSS and HCP staff, there was no significant difference in any aspects (Table 19).
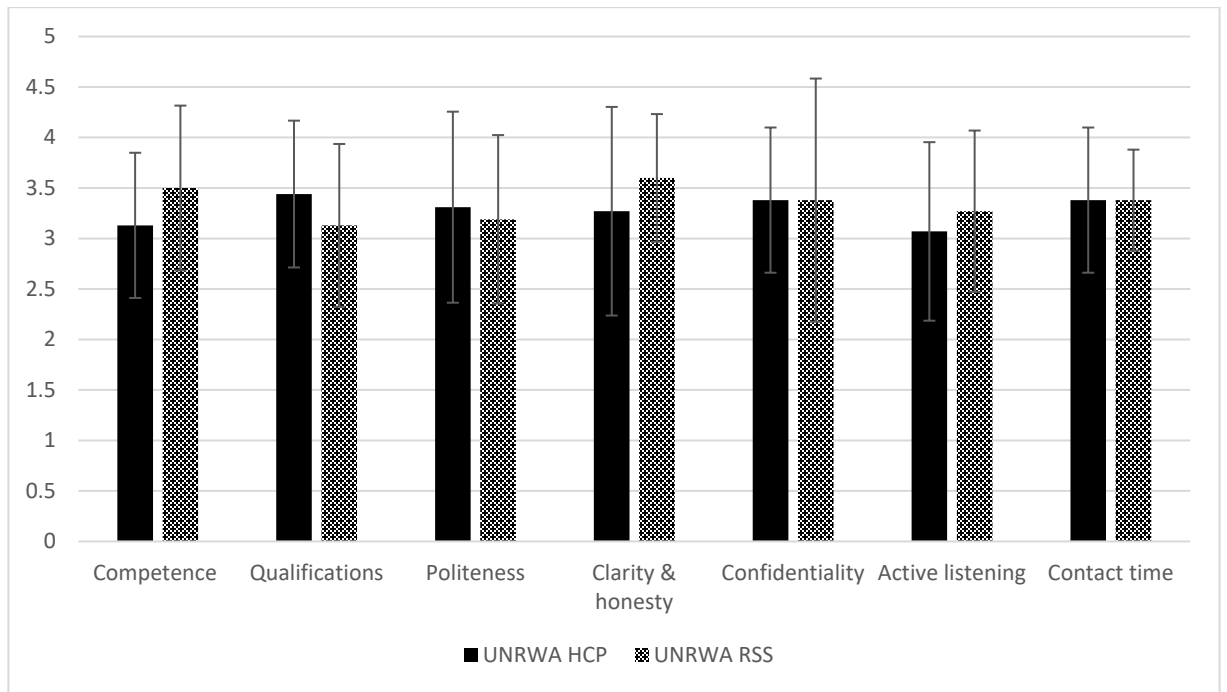
Figure 8: Mean Response for Community's Feedback on HCP and RSS staff During the COVID-19 Pandemic (n= 16)

Table 19: Mean Response for Community's Feedback on HCP and RSS staff During the COVID-19 Pandemic (n= 16)

	UNRWA HCP	UNRWA RSS	P-value
Competence	3.13 ± 0.719	3.5 ± 0.816	0.188
Qualifications	3.44 ± 0.727	3.13 ± 0.806	0.206
Politeness	3.31 ± 0.946	3.19 ± 0.834	0.697
Clarity & honesty	3.27 ± 1.033	3.6 ± 0.632	0.136
Confidentiality	3.38 ± 0.719	3.38 ± 1.204	1
Active listening	3.07 ± 0.884	3.27 ± 0.799	0.51
Contact time	3.38 ± 0.719	3.38 ± 0.500	1

5.4   Discussion

The results indicated that the COVID-19 pandemic had exacerbated the longstanding existing economic vulnerability that was present in Gaza before the start of the pandemic. Levels of unemployment and poverty were already high prior to the pandemic and

interviewed participants mentioned that during the pandemic, unemployment surged even further amongst PRs in Gaza as lockdowns and movement restrictions were imposed. A report published in 2021 by the Palestinian Central Bureau of Statistics confirmed those findings by stating that the labour sector was the sector most affected by the Coronavirus pandemic (Palestinian Central Bureau of Statistics, 2021). The same report mentioned that the labour market in Gaza was already distressed, prior to the pandemic, with many job seekers giving up on their search due to the limited number of work opportunities in the Strip. While data collection for this study was taking place, in the third quarter of 2020 (July- September), about 48.6% of Palestinians in Gaza were unemployed compared to 45.1% in the same quarter in 2019 (Gisha, 2020b). Data from the Palestinian Central Bureau of Statistics reported that between July- September 2020, unemployment amongst people under the age of 30 was 69% and amongst women was 65% (Palestinian Central Bureau of Statistics, 2021). This coincided with the period of community transmission of the virus, which was in August 2020, and the implementation of internal strict lockdown measures and travel restrictions imposed by the local authorities (Gisha, 2020a). Therefore, as the pandemic surged in Gaza and lockdown was imposed, the economic situation became worse. The poor socioeconomic status of the majority of PRs in Gaza and their reliance on daily pay, mostly, made the enforcement of long durations of lockdown very challenging and unacceptable by the community. During the pandemic, UNRWA's lack of funding threatened to pay staff salaries, which had already been affected by two years of funding reductions from the United States (Ager et al., 2018; Al-Mughrabi N., 2020). A UNRWA spokesperson in Gaza reported to Reuters that only a $20 million loan from the United Nations, $12 million in new commitments, and an advance contribution from Sweden for 2021 made the November 2020 salary payments possible. However, payment for the month of December remained uncertain, and UNRWA required $38 million to pay its 30,000 employees' salaries (Al-Mughrabi N., 2020). In Gaza, UNRWA is the main employer of Palestinian refugees. According to the Chief Field Health Programme in Gaza, Ghada Al-Jadba, UNRWA employees supported, in addition to their own families, their extended family members who were without an income. Therefore, if the staff are not paid, it would be catastrophic for the entire

community (Lieberman A., 2020). Interview excerpts, presented earlier, illustrated incidences of clashes between the police and the people as they were trying to escape home-confinement. Eventually, lockdown measures were met with protests due to lack of economic protection (Hammoudeh et al., 2020).

The Israeli forces seized the opportunity of the pandemic to tighten the blockade even further. This further contributed to the worsening of the economic situation in Gaza and undermined the living condition of Gaza's two million residents. Between March 2020-September 2021, Israel imposed a "Coronavirus closure" at the Erez Crossing, the only crossing point between Israel and Gaza, thus restricting the movement of people and goods even further. Except for a small number of patients in need of critical medical treatment, movement of people was completely halted including those who travel for work-related purposes (Gisha, 2021). The same report mentioned that by March 2021, the number of people granted permission to cross the Erez Crossing did not exceed 6% of what was allowed the year before. Previous data published by the WHO indicated that about 9000 patients annually need to obtain Israeli exit permits to receive medical treatments outside the Strip, a quarter of this number is allocated to cancer patients (WHO, 2019c). When asked about the impact of the pandemic on NCD patients, several interviewees mentioned that it was difficult, especially for cancer patients in particular, to issue an exit permit to receive tertiary care outside the Strip. As mentioned by Kinani et al., obstructing the freedom of movement for patients impeded access to proper health care and posed devastating consequences on patients with chronic conditions, especially cancer patients, and on the general health and wellbeing of Gaza residents (Kinani H., 2021).

Despite having some protective measures in place, according to the WHO head of office for the occupied Palestine territories (oPt), Gaza remained a very challenging environment in which the clinically-vulnerable could not be protected due to wider socio-economic conditions. This was due to over-crowdedness and shortages in everything, including electricity, medications and other supplies (AlMughrabi N & Farrell S, 2020). A variety of measures to curb the spread of the COVID-19 virus were unattainable in Gaza. Physical distancing for instance was practically impossible for PRs in Gaza especially for those

living in overly populated camps. Interview findings indicated that overcrowding made it difficult, specifically for older adults and patients with chronic diseases, to isolate and protect themselves from contracting the virus. Earlier in this chapter, a participant from the Gaza Field Office suggested that, in the context of Gaza, having these vulnerable people at home was not enough to protect them against contracting the virus. The participant's suggestion was to impose strict lockdown measures so that their family members would not carry the virus to them. Recent evidence on the Brazilian experience showed that socioeconomic vulnerability, not age and nor pre-existing health condition, was the determining factor that predicted the initial spread of COVID-19. The authors suggested that future policies should target the most economically vulnerable as they were found to be the least protected, and the most susceptible to the adverse impacts of COVID-19 (Rocha et al., 2021). A similar study in the socioeconomically-deprived context of Gaza, whereby NCDs are highly prevalent, may help prioritise which groups of the community are in most need of support and intervention.

Findings from this study were in agreement with those published Hammoudeh et al. (Hammoudeh et al., 2020) that women, children and daily workers were reported to be the most disadvantaged population groups. Interviewees had the impression that Gender-Based violence (GBV) increased in Gaza during the pandemic. Confirmed by an UNRWA report published in November 2020:1- GBV cases against women and girls increased during the pandemic in all fields of operation, 2- the severity of physical assaults and psychological abuse reported by women was found to be greater than usual and, 3- it was found to be associated with lockdown measures and movement restrictions (UNRWA, 2020c). Evidence from the Health Cluster and UN Women showed that levels of GBV increased during the pandemic in the occupied Palestinian territory and worldwide, respectively (Health Cluster Bulletin, 2020; UN Women, 2022). Working women who were interviewed frequently mentioned that they were distressed as they were simultaneously juggling work, utilising bad internet connection at home, and attending to increased domestic responsibilities that were compounded by the absence of regular schooling. In a recent article by Martucci, the researcher argued that "flexible" working

hours for women, or working from home, during the pandemic did not necessarily translate into a better family-work balance, unless childcare was split with the partner (Martucci, 2021). Interviewees also suggested that the pandemic impacted children, linking closure of schools to subsequent psychological distress. Evidence showed that the socioeconomic economic hardship, power cuts and unreliable internet were major obstacles for children in Gaza to switch to remote learning (AlJazeera, 2020) and worsening their mental wellbeing (Gnanapragasam et al., 2021).

Overall, the interviewed UNRWA staff showed a great deal of dedication to serve their community despite the challenging environment and hardships that they had experienced. The social cohesion found in the Gazan community, the sense of shared identity and the support received from the social circle are usually elements found to be beneficial in managing threats (Haslam & Reicher, 2006). However, both UNRWA staff and the community members agreed that the struggles of Palestinians have been magnified during the COVID-19 crisis and a lot more than social cohesion was needed to overcome this rough period. Additionally, interviewees' accounts showed that the way the community reacted during this health crisis was different than any other threat they faced before. The COVID-19 health crisis gave rise to stigma against those infected and those suspected with COVID-19 amongst the local community which in turn changed people's social interactions and altered their usual supportive behaviours. This could be related to the spread of biased and false information which fuelled uncertainty and anxiety amongst people. Findings suggest that the community members' attitude towards one another in the context of an infectious disease threat is different than in the context of conflict-related threat. This was fuelled by governmental practices which instigated fear and caused distress and stigmatised those potentially COVID-19 infected. The difference in community's reaction warrants further investigation.

During the pandemic, UNRWA adopted a telemedicine approach to maintain patient care, reduce foot traffic at the health centres and the subsequent exposure to the virus, and to ensure continuation of treatment. Evidence in favour of telemedicine to manage chronic diseases is not conclusive. A global survey, addressed to 202 health professional in 47

countries, to evaluate the effect of COVID-19 pandemic on the routine care for chronic diseases found that diabetes, chronic obstructive pulmonary disease and hypertension patients were the most affected by the reduction in face-to-face care and inability to manage risk factors especially when morbidities co-exist (Chudasama et al., 2020). Stronger evidence from studies conducted worldwide showed that the use of telemedicine could be helpful in patients' assessment, disease diagnosis and treatment. There is evidence that patients with diabetes, cancer, transplanted kidney and those who needed prenatal care were managed using telemedicine and patients reported general satisfaction using this mode of service delivery (Abuzeineh et al., 2020; Al-Sofiani et al., 2021; Aziz et al., 2020; Lonergan et al., 2020). As such, telemedicine has the opportunity to provide continuous follow-up care for NCD patients and other patients, whether during a pandemic or not. However, it remains important to prioritise outpatient visits based on disease severity in order to avoid non-COVID-19-related mortality and morbidity (Doupis & Avramidis, 2020; Mauro et al., 2020). Some barriers related to patients' privacy and quality of care have been reported. As a result, more research is needed to assess this method in terms of its efficacy and quality of care (Hardcastle & Ogbogu, 2020). Another concern is the fact that non-communicable diseases often occur in low and middle-income countries and the use of such mode of service delivery could be impractical or not regularly feasible due to absent resources and/or weak infrastructure (Webster, 2020). Finally, telehealth is useful in overcoming barriers to access such as transportation and time spent commuting yet, it can be intimidating and confusing for older adults and other marginalized communities such as low-income households and people with disabilities (Velasquez & Mehrotra, 2020).

In the case of mental health services, UNRWA restricted health visits to emergency situations only and resorted mainly to mental telehealth services and counselling over the phone for people reporting mental distress and for COVID-19 infected individuals. Evidence has shown that refugee populations, people with poor socio-economic status and those with previously diagnosed PTSD and depression have an increased risk for mental disorders during the pandemic, including the worsening of PTSD and depression (Júnior

et al., 2020; Kluge et al., 2020). Eighty percent of health professionals in the global survey, mentioned earlier, reported a decline in the mental health status of their NCD patients (Chudasama et al., 2020). During the pandemic, teletherapy became popular and health systems, such as UNRWA, were required to revamp their modes of service provision and deploy teletherapy on a short notice. Adequate training and workflow efficiency are practical elements that need to be present, especially in the absence of a framework to delivering mental health care through teletherapy (Kannarkat et al., 2020). In the current study, interviewed psychosocial workers mentioned that remote mental health services, although a great tool during emergencies, cannot permanently replace face-to-face therapy. This is in agreement with other studies that showed that the absence of non-verbal communication between the therapist and the client in teletherapy limits the ability to connect, build rapport and establish trust (Geller, 2021). Moreover, permanently replacing face-to-face therapy with remote therapy could add to the feelings of loneliness and isolation and have a negative effect on mental health (Luiggi-Hernández & Rivera-Amador, 2020). One study that was conducted prior to the pandemic found that the use of a hybrid approach, a combination of an online and face-to-face therapy, improved the promptness by which patients could be seen (timeliness of care) and the likelihood patients attend outpatient visits (Hughes et al., 2019). Perhaps a similar model could be useful as a long-term solution.

Based on research conducted prior to the pandemic, a remote interdisciplinary approach that involved social workers and psychologists was found to be effective and helpful for people in distress (Mishna et al., 2012; Varker et al., 2019). Since the current pandemic was shown to affect people's mental and physical health needs and alter their social circumstances, policymakers and health care providers are urged to consider setting up and promoting programs that operate remotely based on existing collaborative care models (Appleman et al., 2020). Such programs are useful in addressing patients' changing mental health needs while targeting their evolving medical and social circumstances.

Limitations:

The emerging themes reflect the opinion of interviewed participants. As explained earlier, carrying out data collection remotely, whether interviews or survey, presented with challenges. These challenges were mostly due to the setting itself being not suitable as internet connectivity is poor most of the time and power cuts are frequent. In several occasions, interviews had to be rescheduled and the majority of the surveys were incomplete. Motivation was suspected to be another reason behind the low attrition rate in survey responses and the research team tried to mitigate this by lessening the number of questions, recording data at one point in time and hiring a field researcher in Gaza to encourage people to participate. Nonetheless, this wasn't enough to mitigate the weak infrastructure in the Gaza Strip. Therefore, with the very limited number of survey responses, quantitative findings cannot be generalized. Rather, they could inform trends of associations that require further investigation in subsequent research.

5.5   Conclusion

Palestinians have historically lived lives of hardship- surviving in a context of occupation, chronic adversity, lack of resources and limited infrastructure. The impact of the pandemic and its corresponding public health responses on Gazan's daily life was significant as multiple layers of vulnerabilities overlapped. The increased financial strain, violence especially GBV, food insecurity, social tension and other stressors that were secondary to the pandemic serve as a stark reminder of the need to broaden the public health response beyond disease prevention to include social and economic interventions to improve people's mental health and to decrease their vulnerability to future shocks. The fact that mental health disorders are socially determined means that improving access to mental health services without addressing the social determinants behind mental illness will not reduce the global burden of these disorders.

Chapter 6

Addressing social determinants of health during COVID-19 through UNRWA's MHPSS response in Gaza

In the previous chapter, I examined the changes to social determinants in Gaza during the COVID-19 and was able to showcase, based on participants' accounts, how these determinants have deteriorated and, consequently, impacting mental health negatively. In the current chapter, I aim to explore how UNRWA addressed social determinants during the health crisis in Gaza through its MHPSS response. To do so, I conducted participatory research, group model building (GMB) workshops, over two days involving UNRWA staff from the three main programmes: health programme, relief and social services programme and education programme. All attendees were either involved in setting up MHPSS response or provide MHPSS services during the pandemic. The aim was not only to look at what has been done by UNRWA but also to inform UNRWA's future pandemic preparedness plans in light of the lessons learned.

6.1 Background

Data from the World Health Organization (WHO) show that 70% of mental health and psychosocial support (MHPSS) cases can be addressed and cared for at the primary care level (Funk, 2008). Since 1949, UNRWA has been the main provider of primary health care services to Palestine refugees living in Jordan, Lebanon, Syria, West Bank and Gaza. In 2020, a total of 5.7 million Palestine refugees were found to be registered with UNRWA with about 2.9 million being served through a network of 140 health centres (UNRWA, 2021b) .

Since 2002, Palestine refugees residing in West Bank and Gaza have had access to psychosocial counsellors at UNRWA health centres, school counsellors and community counsellors. These counsellors were all working under the Community Mental Health Programme (CMHP). They provided a range of services around psychosocial support and health promotion and prevention targeting children, youth, parents, elderly and persons

with disabilities. The CMHP was only available in Gaza and West Bank and therefore, Palestine refugees in other fields had no access to a similar service. Also, the CMHP was established with a project funding that kept renewing annually. Hence, the sustainability of this project was always at risk. Although counsellors were working through the main three programmes yet, they rarely liaised in terms of their operation. Psychosocial counsellors at health centres were also working separately and not integrated with the Family Health Teams (UNRWA, 2016).

In 2016, UNRWA piloted integrating MHPSS within its primary care services starting with a health centre in Gaza. The pilot project at Saftawi Health Centre in Gaza first began by training UNRWA healthcare professionals in accordance with the Mental Health Gap Action Programme (mhGAP) Intervention Guide and resulted in the adoption of a stepped-care model to screen, identify and treat patients. UNRWA then evaluated the integration of MHPSS services across the 22 health centres in Gaza; the results of which were very promising. According to the mhGAP, 30% of the 7327 individuals assisted achieved considerable progress. During the same time frame of the evaluation, 1020 patients benefited from 113 support groups, which in turn had a positive impact on their physical and mental health, as determined by qualitative data, patient testimonials, and, in certain instances, laboratory studies(Ubaid et al., 2021). In 2017, UNRWA issued UNRWA's MHPSS Framework that guided MHPSS programming across the core programmes of the Agency (UNRWA, 2017). The Framework was based on the Inter-Agency Standing Committee (IASC) principles and following IASC standards for providing MHPSS in emergency settings (Inter-Agency Standing Committee (IASC), 2007). As of July 2017, UNRWA integrated MHPSS into its primary health services in all of UNRWA's fields of operation (Turki et al., 2020; UNRWA, 2018).

6.1.1 The situation during the COVID-19 pandemic

During the COVID-19 pandemic, mental health has been severely negatively impacted in many contexts around the world. Mental health problems experienced during the pandemic were not limited to those infected but rather extended to impact all community members with varying levels. In addition to fear of contracting the virus and developing

complications, public health measures that limited normal human interaction, such as lockdowns, social distancing, and socioeconomic hardships have increased the level of stress amongst all people thus, worsening their mental state (Otu et al., 2020). According to a WHO survey covering 130 countries, 93% of mental health services were halted due to the COVID pandemic (WHO, 2020c). To overcome this disruption and expand access to MHPSS interventions, a shift towards remote models of MHPSS service delivery took place worldwide (the International Rescue Committee's Airbel Impact Lab Middle East Hub, 2021).

In the previous chapter, we showed that the pandemic was burdensome for Palestine refugees (PRs) living in Gaza as social determinants and living conditions deteriorated compromising the humanitarian situation even further. Interview data with UNRWA staff and community members showed that UNRWA revised its ways of working and adopted new modalities of service delivery to ensure the continuation of service delivery. Examples of less conventional approaches to service delivery included: telemedicine, home delivery of non-communicable disease (NCD) and psychotropic medications, and remote psychosocial support.

When the pandemic started, UNRWA worked closely with the World Health Organization (WHO) and built on the WHO's strategic preparedness and response plan (WHO, 2020a) to establish a "COVID-19 Strategic Preparedness and Response Plan for UNRWA" (UNRWA, 2020b). Aimed at strengthening the preventive measures to curb the virus transmission and enable an effective and prompt response, UNRWA's emergency plan outlined eight priority steps or pillars:

1- <u>Coordination, planning, and monitoring</u>: Coordination mechanisms were activated to liaise internally, at all levels of the Agency, with the COVID-19 Coordination Body established at the headquarters. The internal coordination was intended to review and activate UNRWA's Business Continuity Plan that's agreed upon by all programmes and fields, conduct an initial capacity assessment and risk analysis to identify vulnerable groups within UNRWA staff and the community, assess the implementation success of different activities and adjust operational plans when necessary. Coordination externally,

with local and international (non-governmental organisations) NGOs and UN agencies and with the Ministry of Health and other authorities within the host countries, was intended to review the regulatory requirements and legal basis of all potential public health measures. Liaison mechanisms were also strengthened with local funders to start mobilizing and allocating resources for the implementation of an operational plan.

2- Risk communication and community engagement: UNRWA created UNRWA-wide Risk-Communication and Community Engagement (RC&CE) packages, in line with WHO and host countries' recommendations, to be used in health promotion and prevention activities to targeted audiences and to be available on UNRWA websites and different social media platforms. Preparedness and response activities were conducted by engaging local stakeholders (community-based networks, media, local NGOs, schools, and local governments) to regularly adjust these activities, based on the community's feedback, and address concerns, rumours, and misinformation.

3- Surveillance: An epidemiological surveillance was regularly conducted by UNRWA to report suspected and Covid-confirmed cases to the WHO and Ministry of Health of the host country. UNRWA staff that were either suspected or diagnosed with COVID-19 were reported to the Department of Health and HR Department within their respective field in order to support them with HR-related issues.

4- Points of entry: UNRWA adhered to the strategies and policies of the host country.

5- National laboratories: UNRWA adhered to the strategies and policies of the host country.

6- Infection prevention and control: UNRWA recognised the importance of Infection prevention and control (IPC) to curb the rise of COVID-19 cases among staff, all patients/ students/visitors, and in the community. For this reason, UNRWA detailed IPC measurements for workplaces and UNRWA facilities (e.g., health centres, schools, and training centres, etc.) to reduce the general risk of transmission of COVID-19. For example, triage points were installed at health centres to isolate patients presenting with respiratory symptoms from others. Each field developed a plan to manage the supply of personal protective equipment (PPE) for the staff and procure them when needed. At

schools and health centres, visual aids on proper IPC measures were implemented and Palestine refugees at camps were supported by ensuring they have access to water and sanitation for health (WASH) services.

7- <u>Case management of suspected coronavirus at the Primary Health Care level</u>: Within each field, health staff was familiarised with the definition of "suspected COVID-19 case" and the pathway of referral, according to the updated policies and regulations of the host government, prioritising patients with severe symptoms and those who could develop serious complications over mild cases. Under this pillar, UNRWA outlined the communication line to report suspected cases, both within UNRWA and to local authorities. Also, UNRWA set specific actions to deal with staff who were suspected to have COVID-19 and to disinfect health centres and set specific criteria to decide on whether to close a health centre (in case of virus transmission amongst the working staff) or not. Ensuring the continuation of providing essential primary health care was set as a priority and special considerations and programmes targeting vulnerable groups (elderly, patients with chronic diseases, pregnant and lactating women, and children) were to be implemented.

8- <u>Operational support and logistics</u>: Field offices were advised to review and assess their stock of essential supplies and liaise with the procurement focal point at each field to purchase supplies based on WHO Disease Commodity Package (WHO, 2019a). Within each field, procurement focal points were in charge of mapping available resources and supply chains in their respective host country.

UNRWA's preparedness and response plan was published on March 10, 2020, almost one month after the WHO declared the outbreak of the novel coronavirus disease 2019 (or COVID-19) a Public Health Emergency of International Concern (PHEIC) (WHO, 2020e). Knowing that the integration of MHPSS services within UNRWA core programmes was relatively recent, and in the absence of a pre-pandemic preparedness plan, we hypothesized that it was challenging to sustain the delivery of MHPSS as per UNRWA's Framework and respond to the anticipated rise in MHPSS needs.

6.1.2 Research aims

After identifying in study 1 the social determinants linking mental health to NCDs and then looking at how the pandemic affected social determinants and potentially influenced health outcomes, the current research aimed to explore how and to what extent did UNRWA succeed in reaching out to vulnerable groups by addressing the social determinants of mental health in Gaza during the COVID-19 pandemic. This was achieved by examining UNRWA's MHPSS response in Gaza and its ability to maintain the delivery of MHPSS services during the COVID-19 pandemic in the three core programmes and by exploring whether such services were accessible to vulnerable groups such as those who suffer from NCDs. This was achieved by exploring the perception of UNRWA HQ, Field, health, relief, and social services and education staff on (a) in what ways the pandemic affected PRs' mental health (MH) and (b) how MH services were delivered and reconfigured in Gaza to meet the mental health needs during the pandemic. The research considered the enacted policies and mitigation strategies to sustain the delivery of MH services within UNRWA and explored opportunities that exist to strengthen MHPSS emergency preparedness for future events in light of the lessons learned during the COVID-19 pandemic.

6.1.3 Research question / objectives

The following research questions were addressed:

1. How did the COVID-19 pandemic affect UNRWA's MH service delivery in Gaza?

a. At what point in time, beginning with the inception of the pandemic onwards, and to what degree were each of these MH services affected? (prevention/ promotion activities, early detection/ basic assessments, focused interventions, specialized assessments, and referrals for specialized services).

b. How did the MHPSS services and interventions reach vulnerable groups such as women, children, and those at higher risk for contracting COVID-19 and developing complications (e.g. patients with NCDs)?

2. What opportunities exist to strengthen the emergency response to maintain access to MHPSS and respond to MHPSS needs in future pandemics?

6.2 Methods

6.2.1 Study design

As a pragmatist and in accordance with the principles laid out earlier concerning the existence of a single external reality and the presence of different perspectives of such reality in the mind of those experiencing it, I conducted this current research to explore UNRWA's MHPSS response during COVID-19 pandemic in Gaza (the external fixed reality) and gather different perspectives from those who were either in-charge of the response or actually provided MHPSS services. To do that, I used a participatory Group Model Building (GMB) approach. Held remotely, the GMB workshop comprised two-hour sessions over two consecutive days.

Group model building is a participatory technique whereby a group of professionals –with diverse viewpoints on health system function – come together to elaborate a conceptual model depicting the key dynamics shaping system function over time. The method is increasingly being used in health research (Atkinson et al., 2015; Lembani et al., 2018; Muttalib et al., 2021), and has a long history of use in operational research (Gooyert et al., 2013), being particularly suited to the identification of constraints to implementation and intervention design. An important aspect of system dynamics is that system behaviour emerges via either balancing or reinforcing loops. Sterman describes reinforcing loops as those that promote disequilibrium in a system as they drive change, whereas balancing loops counteract change (John Sterman, 2000).

6.2.2 Sampling and participant selection

Fifteen UNRWA staff working at the headquarters in Jordan, the Gaza field office, UNRWA schools, offices of relief and social services, and primary health centres were invited to participate. To be eligible for participation in the workshop, staff should have been in post for at least one year and had relevant organizational expertise in the sense

that they needed to be either involved in the set-up of mental health services across the UNRWA field, or emergency response for Gaza Field during the COVID-19 pandemic.

Initially, I conducted an online meeting with heads of the core programmes at Gaza Field to explain the study objectives, seek their advice regarding participant selection, and select appropriate dates for the workshop to take place. Heads of core programmes nominated participants for the workshop either during the meeting or subsequently by email. The nominated participants were either staff who deliver MHPSS services within their core programmes or are involved in the planning of the service/response. Then, I sent individual emails to each participant and shared the information sheet and consent form (Appendix 7 and 8). Only staff consenting to participate were eligible. Sampling for the GMB workshops was purposive and convenience-based (Table 20).

Unfortunately, on the day of the workshop, participants from the headquarters and another from the Gaza field office had to cancel due to an urgent commitment to which they had to attend. The workshop was therefore conducted with the remaining twelve participants. Based on previous experience with conducting group model building workshops, the inclusion of 10-12 participants is appropriate, especially when conducting the workshops remotely. This number enables the inclusion of participants with different professional roles and this ensures that the data collected during the workshops represent diverse perspectives; however, with more than 12 participants the management of the workshop can become unwieldy. The reason why I invited more participants, in this case, was to ensure having participants with diverse professional roles from each of the three core programmes (Health, Relief and Social Services and Education). Nonetheless, the final list of participants, shown in Table 1, had equal voices of staff delivering MHPSS and planning the service.

Table 20: Distribution of the GMB participants across UNRWA Programmes and their MHPSS roles

Distribution of participants	Health Programme	Relief and Social Services Programme	Education Programme	Total
Staff in MHPSS service set-up and emergency response	2	2	2	6
Staff delivering MHPSS service	3	2	1	6
Total	5	4	3	12

6.2.3   Data collection tool

The GMB was guided by a series of activities to answer the research questions outlined above.

<u>Workshop activities</u>

On the first day, the workshop began first by introducing the study and the objectives of the main researcher and it continued with participatory exercises where participants from the Health, Relief and Social Services and Education programmes were given the opportunity to share their understanding around MHPSS needs of Palestine refugees during the pandemic and the services their respective programmes delivered during the same time frame. Participants' accounts were captured on Vensim as the participants spoke. I cleaned up the Vensim model after the first day of the workshop ended, by listening to the audio-recordings of the workshop. On the next day, additional activities held with the participants helped illicit the different factors involved in UNRWA's MHPSS response and while capturing also the participants' perspectives around the points

of fragility that require strengthening for future pandemic response. Details of the different activities are presented in Table 21.

Table 21: Brief description of activities carried out in the GMB workshop

Activity title	Description of activity
Reference modes: elicitation of perceptions on key trends over time	Focused on the period starting from December 2019 the (start of the COVID-19 pandemic), followed by the community transmission period and onwards, two groups drawing perceptions on trends relating to: MHPSS needs of PRs and identification of cases, MHPSS service coverage, availability of human resources delivering MHPSS, MH service coverage.
Variable elicitation	Participants were asked to reflect on the trends above and identify key variables related to the performance of MHPSS services during the pandemic; a long list of variables of relevance to how MHPSS services were delivered, whether MH services addressed MHPSS needs of patients (including vulnerable groups such as persons with co-morbid NCD conditions) etc.
Causal loop diagram development	Participants focused on developing a causal loop model reflecting on two main issues: 1) MHPSS service delivery to patients during the pandemic 2) the challenges/ opportunities to improve the system's response to future pandemics

A more detailed description of the GMB workshop script is outlined in Appendix 9.

6.2.4   Analysis and presentation of findings

Workshops facilitated the collection of: drawing of a Reference Mode, audio recordings of the GMB workshops which were later transcribed, and a concept model with causal loop diagrams (CLD) summarising perceptions of participants on MHPSS service delivery during the pandemic, including addressing the MHPSS needs of vulnerable groups such as patients with co-morbid NCD conditions, the ability to meet community and patient needs and readiness for future pandemics.

Analyses of these materials proceeded iteratively. I, the facilitator, listened to workshop recordings, transcribed the two-day recordings for use in refining the reference mode diagram and constructing the final concept model. The final concept model was structured with respect to the domains of the UNRWA MHPSS framework (UNRWA, 2017) and verified against the model developed during the GMB workshops and fine-tuned with participants' accounts taken during the workshop.

6.2.5 Ethical considerations

The GMB workshop was approved by the Ethics Review Panel at QMU and by UNRWA Ethics Committee. All participants were offered information on the scope and objective of the workshop and were assured adherence to good ethical practice, anonymity and confidentiality. A consent form was obtained from each participant willing to participate in the GMB workshop and their permission was sought to audio-record the workshop.

6.2.6 Data Management and Security

Audio recordings of the GMB sessions, were treated confidentially and transcripts of recordings were anonymised to ensure that no participant can be identified in any reports from the study. After initial capture on a password-protected laptop, data was stored on QMU One Drive in a folder accessible only to the research team (PhD researcher and supervisors). The recordings were destroyed 6 months after the completion of the study i.e. on October 12, 2022.

6.3 Results

6.3.1 Activity 1: Reference modes:

The following activity was performed using "Jamboard", an online tool that allows an interactive participation of workshop attendees. They can enter the platform, anonymously, and contribute in writing or drawing (depending on the nature of the activity). Due to technical difficulties encountered by MS-Teams during this activity, GMB participants worked in one group, instead of two, and were asked to elaborate on their perception of how key indicators such as: mental health needs, MH service coverage,

available resources for the MH response and other non-health service coverage changed over time starting from before the pandemic onwards.
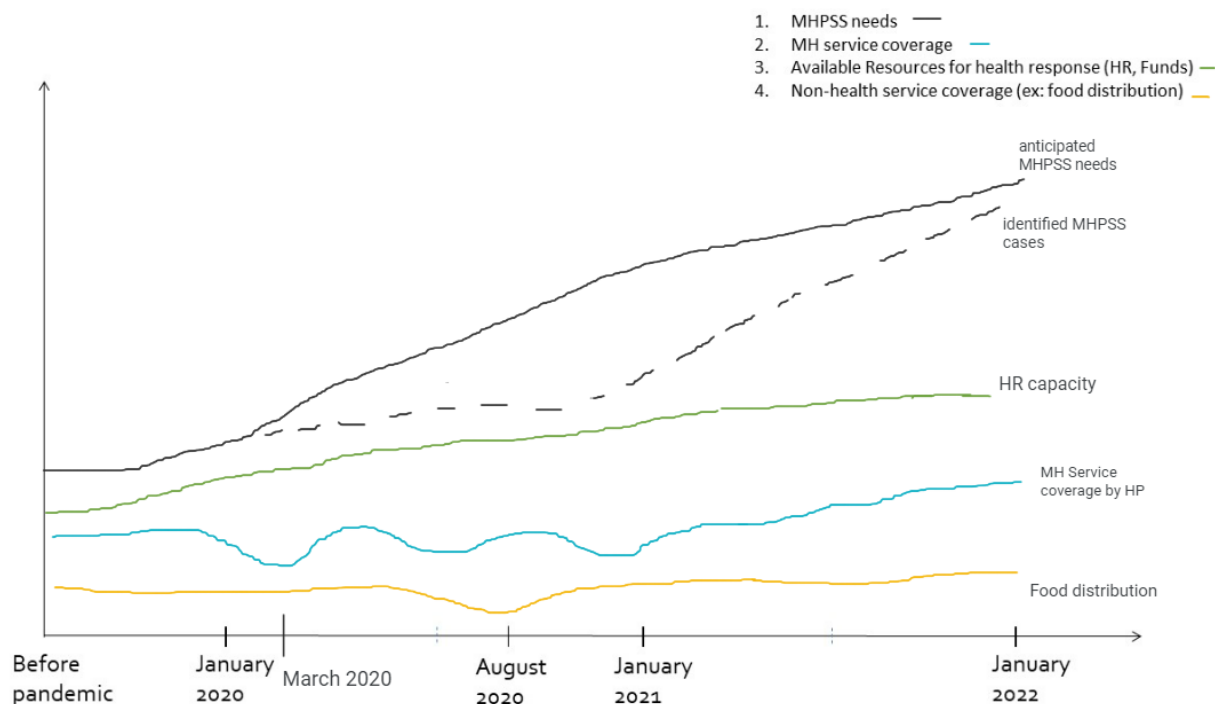
Figure 9: Perception of GMB participants around changes in key indicators over time. During the workshop, participants added March 2020 as a reference point in time where some variables, such as: MH service coverage, were affected.

During the workshop, participants added an additional point in time on the x-axis, March 2020, which marks the month where the first COVID-19- infected individual in Gaza was detected and when the first lockdown in Gaza took place (Figure 9). This was because participants viewed this month as a significant turning point after which mental health service coverage by the health staff and the ability of UNRWA to identify people with increased MHPSS needs were compromised.

MHPSS needs:

All participants agreed that the mental health needs of Palestine refugees in Gaza were high before the pandemic. Participants attributed these high mental health needs to several factors, namely: high levels of unemployment, low socio-economic status, Israeli

aggression, and frequent exposure to potentially traumatic events, blockade, and over-crowdedness. With the inception of the pandemic, and especially with the initial detection of people infected with COVID-19 in Gaza in March 2020 and the beginning of enforcement of protective measures, UNRWA staff noted that they perceived an increase in MHPSS needs as people were apprehensive, especially as they lived in an overcrowded place that favours the spread of diseases, and their livelihood, such as experiencing more domestic violence and inability to generate income, was disrupted. However, UNRWA staff were aware that UNRWA's phased response (Appendix 11) would mean that the increased MHPSS needs in the community would not be translated to an increased number of newly-identified people with MHPSS needs because detection services (such as mh-GAP screening by health staff, identification of women experiencing GBV, screenings to school children by school counsellors etc.) were suspended. When community transmission took place, in August 2020, clinics closed and screenings were halted making it more difficult in terms of identifying people with increased MHPSS needs, and hence, the discrepancy between actual needs in the community and those documented by UNRWA became larger.

> *"The virus transmission in Gaza was delayed compared to other regions of the oPt. In Gaza, the first case was reported on March 17, 2020, and that's when lockdown measures started… Of course, the number of GBV cases have increased due to lockdown measures. During the lockdown, stress levels have increased because people couldn't go out and the houses are very small. Also, people's needs were a lot and their capacity to meet their needs was limited. All this led to more violence especially towards the weakest at the household namely, women and children... During the pandemic, our weakness at the Health Department was in documentation. Because cases couldn't come to the health centres because of triage etc., we realized that we didn't document all these cases. Now, however, after the health centres have opened again, we started seeing more and more of GBV cases that have originally risen during the pandemic". MHPSS service provider*

With the enforcement of lockdown, mental health needs and psychosocial problems were perceived to have increased. For example, it was perceived that more people were depressed and more women were experiencing GBV during the pandemic compared to pre-pandemic figures. Measures taken to curb the spread of the virus including lockdown and movement restrictions, and isolation at quarantine centres were perceived to have increased levels of unemployment, poverty and food insecurity. Local authority practices – e.g., whereby the police would visit those thought to have COVID – placed additional stress on the community. Moreover, spread of false information and fear of getting infected increased social tension and, as per participants' accounts, stigma was also responsible for the increased mental health needs of Palestine refugees during the pandemic.

> *"... the COVID-19 experience is a new experience in all its aspects, and it contained experiences that we saw for the first time, such as quarantine, the mother's or father's quarantine and their separation from their children, or even taking some children from the arms of their families and keeping them away for quarantine. All of these things affected children and were considered among the factors that increased children's need for mental health services. We noticed an important thing, which was that the society's view of the infected person encouraged stigma. There was something strange, as there were some people who poured out their anger and reflected strong and clear negative feelings on the infected people as if they were accused of spreading the virus and accused of neglect. A major thing we witnessed for the first time in the Gaza Strip, as people usually sympathize with the injured or victims, but the COVID-19 experience led to the opposite". MHPSS staff in charge of response set-up*

During lockdown periods, not all programmes had the capacity and means to identify people that require MHPSS intervention although certain programmes succeeded more than others. For instance, identification by the Health Programme was reported to be impeded by the lockdown measures and the fact that beneficiaries were not allowed to attend UNRWA health centres and mh-GAP screening by health staff was halted. GMB

participants from the Relief and Social Services programme (RSSP) had a different view stating that they were capable to identify people with MHPSS needs during the pandemic while clinics were closed. For example, their collaboration with the Health Programme in the "Health Task" enabled them to visit the families during lockdown, assess their MHPSS needs and perform psychosocial first aid (PFA) for those in need. Also, RSSP maintained contact with vulnerable groups (who they usually provide relief services to) such as people with disabilities, orphans etc. and regularly called and checked on them and attended to their MHPSS needs. Identifying people with MHPSS needs within health centres resumed its full capacity with the opening of the clinics in 2021, as people were attending the health centres to receive other medical services.

Human resource (HR) Capacity:

The proportion of HR capable of screening, diagnosing, managing and providing MHPSS services differed throughout the crisis. Participants from the Health Programme had the impression that when the health service switched to the remote modality, staff on part-time contracts, who were not trained on WHO-mhGAP, were utilised. This impeded the screening process for MHPSS, decreased the ability of identifying and diagnosing people with increased mental health needs by the health staff. On the other hand, the reform that took place at the RSSP increased HR capacity as social workers became trained on delivering psychosocial services and were able to assist psychosocial counsellors at health centres in performing initial screenings.

> *"... a big number of staff that was recruited, the service staff, which were about 700 staff members at the health programme in Gaza, were either on a daily contract or on something more specific to Gaza, which is the Job Creation Program (JCP). They are not fixed-term staff and many of them were medical personnel i.e., doctors or nurses. All of these staff weren't trained on mental health services so that caused a disruption as well... Only the fixed-term staff were eligible to provide mental health service... we established the telemedicine and our response at first relied on the fixed-term staff who were capable of diagnosing and screening for MHPSS. We started with 22 lines and later we increased the*

number of lines to 30 and then 70. When we increased the number of lines, we weren't able to cover the service with the fixed-term staff only so we were assisted by the daily-paid and the JCP staff who were incapable of detecting MHPSS cases". MHPSS staff in charge of response set-up.

MH service coverage by health programme (HP):

Staff from the HP had the impression that service coverage for mental health fluctuated during the pandemic. As UNRWA adopted a phased-approach response (Appendix 11), certain services became unavailable and the modality for delivering services changed with the changing epidemiological status of Gaza. For instance, screening services stopped in phases 1 and 2.

> *"...we developed new modalities of treatment through a four-phase approach response. Meaning that, we were moving up and down in terms of services depending on the epidemiological situation of Gaza." MHPSS staff in charge of response set-up*

> *"MHPSS services provided to Palestine refugees were dependent on the screening for their mental health problems and mental health disorders. The screening process during these phases changed. Sometimes we have stopped screening when we were in the phases one and two, i.e., when there was lockdown and a restriction on all screening activities. They were postponed and sometimes we had no screening even to the high-risk group of people. For example, old people were not allowed to attend the health centre. So, all these measures affected our response." MHPSS staff in charge of response set-up*

Non-health service coverage:

When asked about non-health services provided during the pandemic, participants chose to talk about the home-delivery of food parcels. As voiced by the RSSP staff available at the GMB, the ability to adjust the modality of food parcel distribution in a relatively quick manner coupled by distributing food parcels to a huge number of beneficiaries was a great accomplishment by the RSSP. The RSSP faced challenges in doing so as the community

transmission coincided with the current cycle of food distribution at that time. Also, they had to contract with an external company to deliver food parcels to beneficiaries' homes. This resulted in a delay in delivering food aid and some items were missing in the first distribution. However, beneficiaries were compensated in the following food baskets. GMB participants from the RSSP mentioned that some people experiencing high levels of distress, mainly women subjected to GBV, identified during the home-delivery of medications did not want their case to go on record.

> *"Regarding the food distribution during the pandemic, we had to utilise the services of an external company to help us along with staff members from the Transportation Services at UNRWA and RSSP staff, of course. Through home-delivery of medications, our social workers would perform a quick assessment to check on the families if they are facing any problems that require MHPSS intervention. But we're still facing a problem which is stigma against mental health and violence. So, people would talk about their problems but, they would refuse to officially report them. That's why the numbers that we have do not reflect the actual situation."* MHPSS staff in charge of response set-up

6.3.2   Activity 2: Challenges and enablers of MHPSS service delivery

The purpose of this activity was to start unpacking the factors behind UNRWA' MHPSS response during Covid. This activity was supposed to be a starting point to start linking these factors and construct the concept model. When asked about the challenges faced to provide MHPSS services during the pandemic, GMB participants identified the following factors: high pre-pandemic mental health needs amongst the community due to multiple factors; stigma and social tension; lack of pandemic preparedness plans within UNRWA emergency plans; available financial resources; staff physical and psychological wellbeing and challenges around remote counselling.

On the other hand, participants identified the following service enablers: RSS reform and the introduction of the staff cadre delivering psychosocial services; collaboration between UNRWA programmes to provide essential services ex: the "Health Task" which was a

collaboration between Health and RSSP staff; and the promptness and ability of UNRWA programmes to adapt and re-organize the way services ex: re-organizing method of food parcel distribution; and providing MHPSS interventions remotely (such as: providing psychosocial support to parent groups and individuals over WhatsApp).

6.3.3 Activity 3: Construction of the Concept Model

After identifying the challenges and enablers and elaborating on the mental health needs of Palestine refugees in Gaza, participants started talking about the responses implemented by each programme to address MHPSS needs. The diagram elaborated with the participants during the workshop shows the connections between different factors that link mental health needs of staff and community with the MHPSS services provided and the factors affecting MHPSS service delivery (Figure 10).
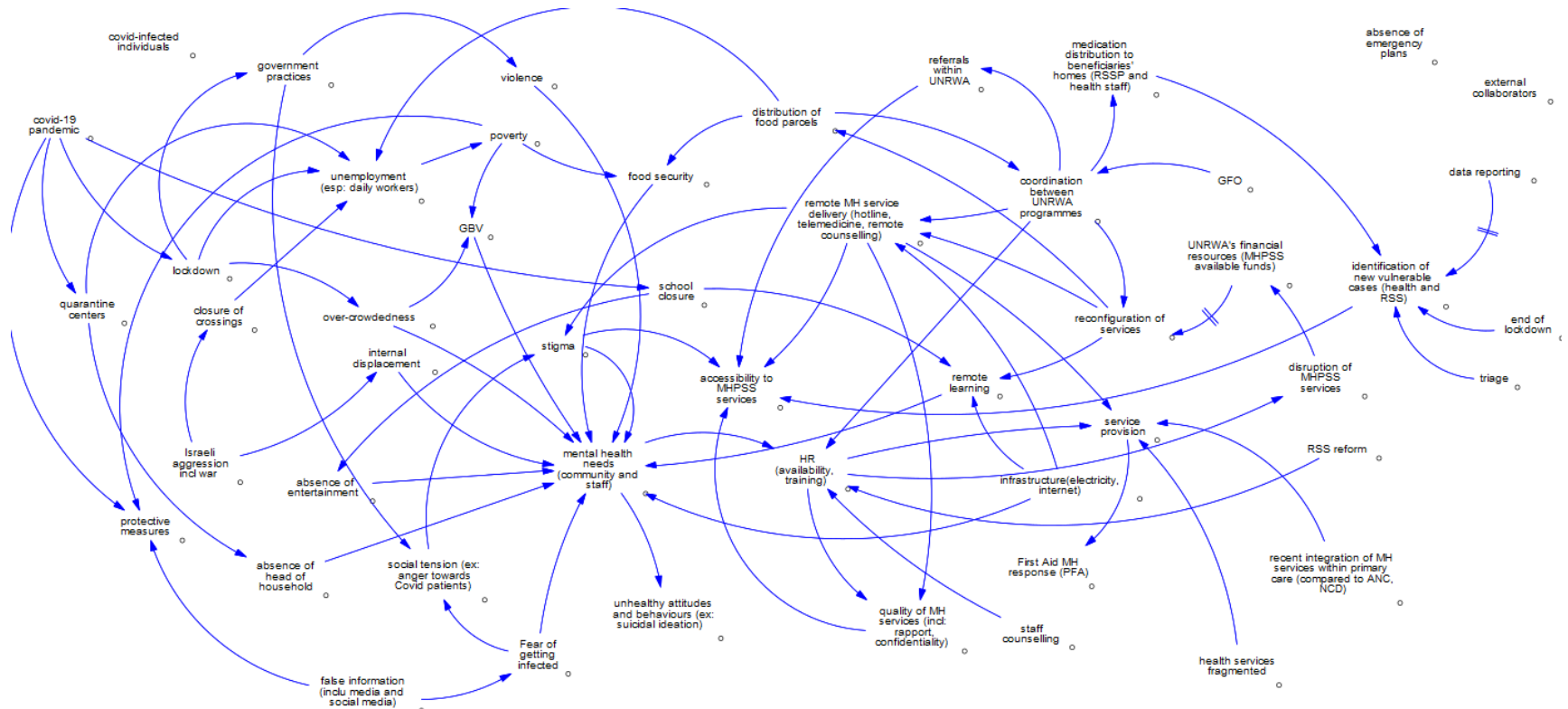
Figure 10: Concept Model developed by participants during the workshop

To inform the analysis, I constructed another diagram depicting the UNRWA MHPSS framework (Figure 11). The diagram shows variables of importance for each element of the UNRWA MHPSS Framework and how they are linked to each other. The process for how this was developed is detailed in Appendix 10. The purpose of constructing this diagram is to show the ideal pathway of MHPSS response as per the framework.
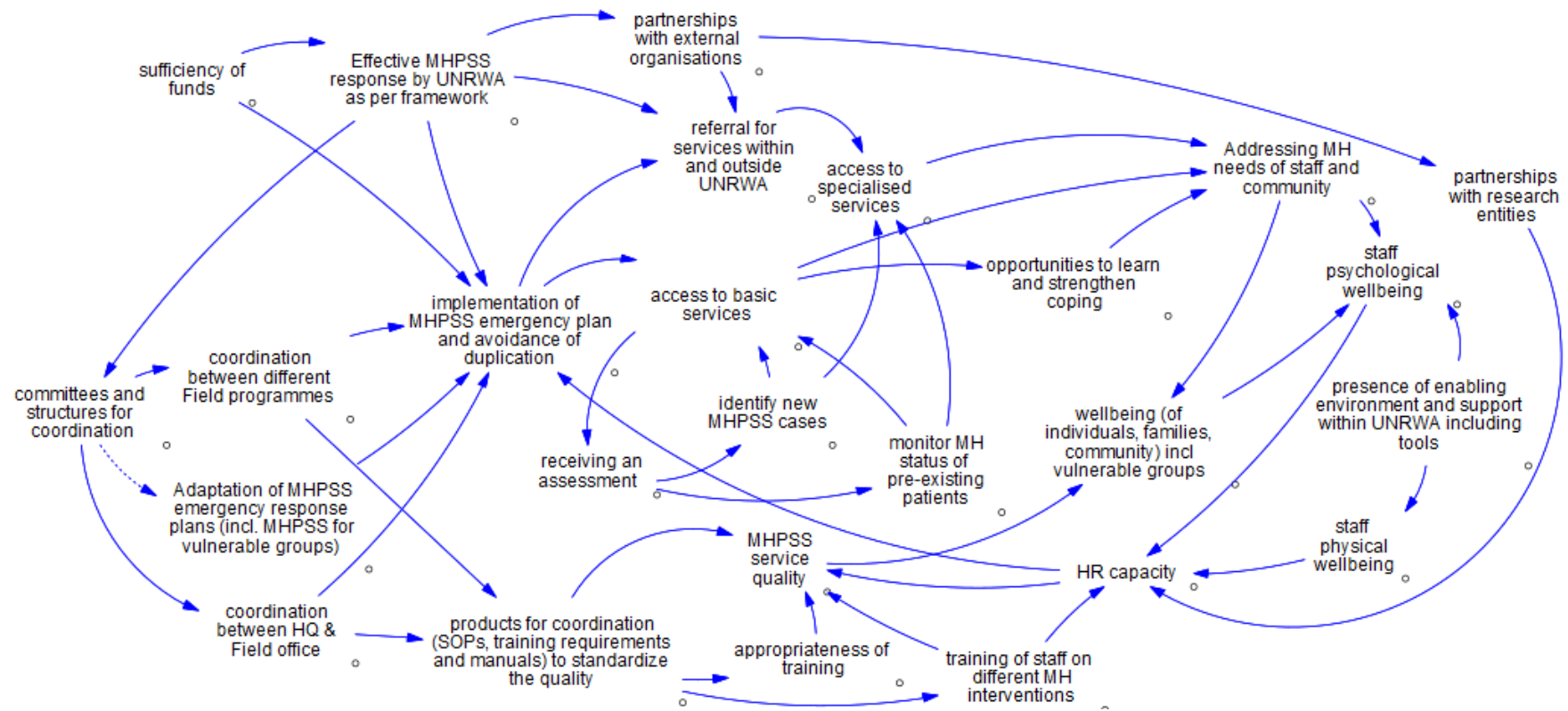
Figure 11: Elements of UNRWA MHPSS Emergency Response and their interaction

The constructed diagram (Figure 11) was then contrasted against the diagram developed during the workshop (Figure 10) to validate whether or not the framework offers an accurate basis for understanding the MHPSS response. Based on Figure 10 and the voice recording of the workshop, additional variables were added to Figure 11. The comprehensive diagram (Figure 12) will help us understand how service flow took place during the pandemic.
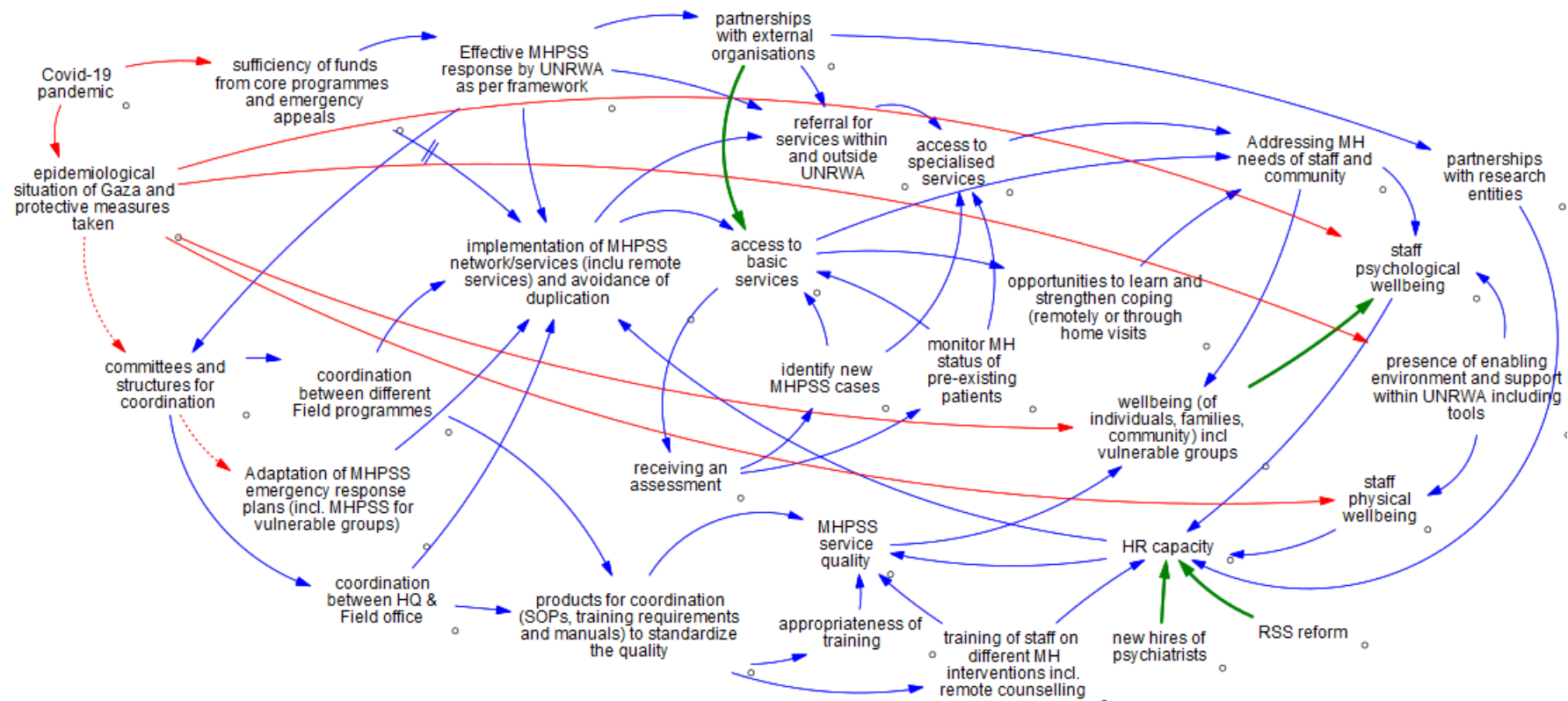
Figure 12: a comprehensive diagram depicting the UNRWA's MHPSS response during Covid pandemic along with elements of the MHPSS Framework. Red arrows depict the direct effects of the COVID-19 pandemic. Green arrows depict new connections made outside the UNRWA Framework.

a. <u>A general description of the comprehensive diagram (Figure 12):</u>

Looking at Figure 12, the red arrows represent the influence of the pandemic. COVID-19 directly affected the funds available for implementing an effective MHPSS response as per the framework. Available funds were insufficient to respond to the additional needs pertaining to the pandemic. UNRWA then organized an emergency appeal to call for further funds. The emergency appeal lasted for a 3-month period and, in the meantime, UNRWA mobilised funds internally to begin the implementation of the MHPSS response. A full response, as per the needs of the beneficiaries, was only possible after June 2020 when funds were received and staff could be supported logistically (i.e. by providing them with mobile phones, laptops, phone lines etc.) to conduct remote counselling, follow-up on their MHPSS cases etc. COVID-19 directly affected the epidemiological situation of Gaza and the type of protective measures enforced. The epidemiological situation changed as the number of Covid-infected people in Gaza increased or decreased. Accordingly, the local authorities of Gaza specified when and which neighbourhoods of Gaza had lockdown enforced and what protective measures were to be practiced to protect the community. The changes of the epidemiological situation in Gaza and the instructions of the local authorities informed committees and structures of coordination who were in charge of standardising the MHPSS response. The epidemiological situation of Gaza and the type of protective measures enforced affected the physical and psychological wellbeing of staff and community members in addition to shaping UNRWA's internal enabling environment.

Building on the principles of the IASC guidelines (Inter-Agency Standing Committee (IASC), 2007), UNRWA has made the following seven commitments, towards the community it serves, in its own MHPSS Framework: 1- to deliver services that respect the dignity of Palestine refugees and optimise access and justice in the availability and accessibility of services; 2- to include Palestine refugees in MHPSS programming; 3) to not cause harm to anyone receiving MHPSS services. 4- to build on available community resources and capacities of Palestine refugees; 5- to promote resilience among Palestine refugees either by directly addressing the source of distress (e.g., lack of hygienic and

liveable spaces) or by contributing to an enabling environment (e.g. by providing education that is inclusive of all members of the community). 6- to build a minimal response within UNRWA programmes to assist Palestine refugee children and adults with mental health and psychosocial difficulties. 7- to adopt a sustainable strategy by avoiding the creation of services that are separate from the delivery of normal programming, such as providing highly specialised psychiatric and other allied health services since UNRWA realizes its financial and technical limitations of the Agency (UNRWA, 2017). Within the diagram, the following elements of the framework can be identified:

1. <u>Multi-layered approach:</u> which is at the centre of the diagram. The approach emphasises the comprehensive implementation of MHPSS interventions, as per the four-level pyramid of interventions (UNRWA, 2017) and its application by core programmes. Under this element, UNRWA ensures that Palestine refugees: 1- have access to basic services (e.g. health, education and relief and social services) in a dignified manner, one that maintains their sense of self-worth and well-being; 2- are provided with opportunities to strengthen resilience and enhance coping, whether as individuals, or groups of people; 3- have access to individual or group non-specialist services if they experience severe distress or coping challenges; and 4-should PRs experience substantive mental health challenges, a more specialized service within UNRWA is provided utilising more trained staff who are capable of conducting a mental health assessment to make a preliminary diagnosis, prescribe medications or refer externally for a specialized treatment. The latter is provided by institutions belonging to the Ministry of Health in Gaza and other external partners. The multi-layered approach is, therefore, facilitated by the available human resources who are appropriately trained to deliver different mental health interventions and follow MHPSS principles.

2. <u>Prevention/Promotion, assessment, intervention and referral (PAIR) model:</u> which is also present at the centre of the diagram. The PAIR model emphasises the provision of activities that promote wellbeing and coping and utilises an assessment system that identifies people with MHPSS needs and allocates new

and active patients into the appropriate MHPSS intervention as per the multi-layered approach.

3. <u>Staff safety and well-being</u>: located at the right of the diagram, staff wellbeing is affected by the presence of an enabling environment and support within UNRWA. This includes promoting self-care practices amongst staff, providing supportive supervision and the presence of policies that protect staff wellbeing.

4. <u>MHPSS in emergencies</u>: located at the bottom left of the diagram: "Adaptation of MHPSS emergency response plans". As per the framework, UNRWA's MHPSS emergency response is consistent with the regular MHPSS programming focusing on specific MHPSS interventions of the MHPSS pyramid, namely: prevention/promotion activities and social and community support. The MHPSS emergency response should particularly address the needs of Palestine refugees who are vulnerable and therefore, require additional or extensive psychosocial needs. As no programme on its own is able to respond to MHPSS needs during an emergency, the Agency-wide emergency response is achieved through coordination within and between different field programmes and integrated with UNRWA Emergency Management Framework.

5. <u>Strategic partnerships</u>: located at the top of the diagram and on its right. Partnerships with external entities is meant to facilitate referral pathways for specialised services and to enhance the quality of MHPSS interventions through trainings.

6. <u>Capacity development</u>: This starts at the far right of the diagram and extends to the bottom of the diagram. Building staff capacity is accomplished via providing trainings that are compatible with the staff's professional roles and services they provide in their respective core programme. Partnerships with external research entities could be sought in order to provide staff trainings. Alternatively, Training of Trainers (ToT) approach could help utilise the expertise and knowledge of UNRWA staff. The kinds of trainings and their content is usually determined by the coordinating structures who set a training plan that adheres with the principles of the MHPSS Framework, facilitates its implementation, includes toolkits and

materials of evidence-based practices and in line with international MHPSS standards.

7. <u>Coordination</u>: which is located at the bottom left of the diagram. Coordination is facilitated by the coordination structures, such as committees, programme representatives and MHPSS coordinators working at headquarter (HQ) and field levels. All of these entities, who are involved in coordination, work together to ensure proper information flow between the HQ and field office and between and within individual programmes. They also work together to develop standard operating procedures (SOPs), avoid duplication of services amongst programmes, and set training requirements that will standardise the quality of the MHPSS service.

8. <u>Resourcing</u>: located at the top left corner of the diagram. This involves the availability of funds which encompasses funds available for the functioning of the core programmes and funds raised through emergency appeals. These funds are needed for the implementation of the MHPSS response.

b. <u>Thematic analysis of the developed concept model:</u> In this section, I will be presenting the findings of the concept model using thematic analysis. As seen below, three main themes were identified in Figure 12 that describe UNRWA's MHPSS response in Gaza during the COVID-19 pandemic. The quotes presented are extracted from the transcribed audio-recordings of the GMB workshops.

1. The provision of basic (health, relief, and education) and MHPSS services required the reconfiguration of regular modes of service delivery:

UNRWA lacked a pandemic preparedness plan, resulting in a lack of standard operating procedures and technical guidelines to adhere to during the pandemic. Instead, UNRWA implemented the World Health Organization's strategic preparedness and response plan in response to the COVID-19 pandemic. Consequently, the technical guidance provided by the headquarters was in accordance with global recommendations and standards. As per the accounts of GMB participants, field programmes were

characterised by the pedagogical approach of "learning by doing". For example, limited experience with remote services meant that field programmes were unprepared to navigate arising challenges beforehand.

> "Remote counselling was faced with many challenges. First, we are dealing with cases that are highly confidential, and second, there weren't any protocols. In fact, we developed our own protocols which was risky. However, we insisted on providing the service and not having to stop it". **Staff in MHPSS service set-up and emergency response**

UNRWA continued delivering primary healthcare services by implementing a triage system. This involved segregating patients who exhibited respiratory symptoms from others, prioritising those with critical health needs to receive in-person interventions and offering telemedicine to patients who required non-critical care. UNRWA implemented a phased approach in its response, outlining the specific types of services offered at health centres and the patient categories eligible for in-person services. Emergency medical teams were deployed to provide home-based care for urgent and critical cases. Non-essential services, such as dental and laboratory services, were suspended with the exception of urgent cases. Patients with chronic conditions, including those with non-communicable diseases (NCDs) and those requiring psychotropic medications, did not experience any treatment interruptions. The Health Programme staff and RSSP worked together in a joint effort known as the "Health Task" to provide elderly patients over the age of 70 and patients diagnosed with type 1 diabetes with a three-month supply of essential medications, which were delivered directly to their homes. Following the lifting of lockdown measures, medication was dispensed through a designated individual selected by the patient to retrieve the necessary prescriptions from UNRWA's pharmacies. The information about the response strategy implemented in stages can be found in Appendix 11.

In the exceptional circumstances of the pandemic when foot traffic to health centres was limited, UNRWA had to utilise the services of part-time staff and staff on temporary contracts, who were mostly medical doctors and nurses, at triage points and at hotlines

providing telemedicine services. Because these staff members were not on long-term contracts, they were not trained on the WHO-mhGAP and were therefore unable to manage mental health conditions. The limited HR capacity of available health staff necessitated the halting of screening services and as a result, not all MHPSS needs, at the community level, were met. Only beneficiaries who called and asked for the MHPSS services were picked up by the system as requiring intervention. When this happened, patients were referred to psychosocial counsellors for assessment and remote counselling. According to the GMB participants, self-referral to MHPSS services was not very common though. In phases 1 and 2, psychosocial counsellors mostly followed-up with beneficiaries that were registered and identified pre-pandemic. They created WhatsApp groups for cohorts of patients who exhibit comparable MHPSS requirements or conditions. For example, a WhatsApp group was established for women who have experienced GBV, and membership was voluntary. The psychosocial counsellors utilised this group as a means of establishing and sustaining communication with these women throughout the pandemic. Their primary objective was to conduct regular check-ins, offer guidance on stress management, and provide general advice to aid in coping.

> "The MHPSS services were limited and were delivered only to old cases and to critical and severe cases and therefore, not all cases received MHPSS service… a big number of staff that was recruited, the service staff, which are about 700 staff members at the health programme in Gaza, were either on a daily contract or on something more specific to Gaza, which is the Job Creation Program. They are not fixed-term staff and many of them were medical personnel i.e. doctors or nurses. All of these staff weren't trained on mental health services so that caused a disruption as well". **Staff in MHPSS service set-up and emergency response**

During the pandemic, the offices of RSSP were closed to the public, and only essential personnel were present to ensure the uninterrupted delivery of relief services. Essential services, such as the provision of monetary funds to eligible refugees in Gaza, persisted, while an internet-based registration mechanism was established to record the births, marriages, and other vital events of the populace. The COVID-19 pandemic posed a

significant challenge in ensuring the continuity of other essential services, such as the distribution of food to the intended beneficiaries. RSSP in Gaza implemented a novel approach to guarantee the distribution of food assistance to a total of 1.15 million recipients through home delivery.

The RSSP had undergone a reform prior to the inception of the pandemic. This reform included introducing a new cadre of staff, social workers, who were trained to provide psychosocial services. The training took place between October 2019- February 2020. Therefore, the training that was given to social workers at the RSSP increased available MHPSS staff within UNRWA. GMB participants mentioned that in the unusual circumstances of the pandemic, a term of reference (TOR) between RSSP and the Health Programme and another between RSSP and Education programme gave social workers the responsibility to carry out specialized MHPSS assessments and provide focused, non-specialised interventions. The collaboration of the social workers from the RSSP with the Health Programme in the home-delivery of essential medications, the Health Task, enabled them to provide Psychological First Aid (PFA) to visited patients and identify those who need additional MHPSS support. When the number of COVID-19 infected persons were high, it became a priority to provide counselling for COVID-19 patients and their families. In addition to their contribution in the "Health Task", social workers from RSSP helped psychosocial counsellors at health centres by conducting care calls to COVID-infected individuals, and their family members if/when they also needed support, on a daily basis, for fourteen days. Because RSSP offices were closed, except for essential staff, RSSP workers were mostly working from home for the entire period of the pandemic. The RSSP and the health programme coordinated together to allow social workers of the RSSP to utilise office space at the health centres. Social workers from RSSP and school counsellors provided individual and group counselling sessions for individuals with disabilities, including children who have physical impairments and/or psychosocial needs, as well as for orphaned individuals. Case management teams were also put in place whenever there was a need to provide a multi-disciplinary MHPSS response.

"As for the coordination at the level of different departments at UNRWA, there is a coordination between the RSSP, HP and the education Programme related to the high-risk and critical cases. With the onset of the COVID-19 pandemic, a reference document that was prepared and implemented with the approval of the field office in the Gaza. This reference document confirms that high-risk cases, cases of suicide and cases of repeated GBV are within the prerogative of the RSSP. Any case that is discovered by the HP or Education programme, they discuss they discuss it with the social workers at RSSP who are distributed over the sixteen RSSP offices. In the case management meetings, we would have representatives from different departments including the protection department whereby a legal advisor is present as well. We discuss the case and look for solutions to protect the case and prevent exposure to risk". **Staff delivering MHPSS service**

The provision of educational services persisted. From March to September 2020, students attending UNRWA schools were engaged in remote learning. Following September 2020, an educational approach that integrates both in-person and remote learning was implemented. As per the accounts of participants in the education programme, the provision of remote learning, which is considered a fundamental service, posed difficulties for both children and their parents. UNRWA distributed self-study materials with integrated psychosocial messages to promote inclusive education for all children. Specific to MHPSS, school counsellors followed up with children requiring MHPSS services that were identified pre-pandemic. School counsellors monitored the mental health of pre-existing patients by conducting care calls to children previously identified as needing additional psychosocial support, including children with disabilities. School counsellors facilitated online recreational activities and modified games for students with physical and intellectual challenges. Online group counselling sessions were conducted for parents and teachers on various topics such as parenting during the pandemic and stress management.

GMB participants expressed concerns regarding the preservation of confidentiality and avoidance of harm to recipients of remote counselling. The rationales for this were either attributed to the incapacity of the recipient to obtain a secluded location to uphold privacy

during the session, or the recipient's sense of insecurity to communicate, particularly if the offender is present at the residence (as observed in some women who have experienced gender-based violence). Additionally, the absence of an exclusive mobile device owned by the recipient (which is particularly applicable to minors who do not possess personal mobile phones) posed a risk to confidentiality.

Even after health centres became accessible to patients with high-risk and critical needs (such as women subjected to GBV or elderly patients), participants of the GMB programme perceived that certain women encountered difficulties in attending counselling sessions at the health centre due to the need to provide a legitimate justification to other cohabiting family members for their departure from the household. It posed a challenge when a majority of establishments were closed and venturing outdoors necessitated legitimate purposes. In order to address the aforementioned challenges, MHPSS staff within the three core programmes conducted home visits for individuals deemed to be at high risk or classified as patients with critical needs starting the second phase of the four-phase response strategy.

Finally, the MHPSS personnel in the three main programmes employed social media platforms to disseminate awareness messages pertaining to coping mechanisms amidst the pandemic, stress management, combating COVID-19-related stigma, protective measures against the virus, and constructive parenting techniques for interacting with children during the pandemic. They were also utilised as a means to disseminate the contact information of MHPSS personnel who are employed at the RSSP, health and education programmes. This strategy facilitated the outreach of beneficiaries seeking assistance.

2. Physical and psychological support enhanced staff performance and enabled service continuation:

Logistic support was provided by UNRWA to enhance facilities. This included the installation of triage points, internal layout adjustments, and the installation of hygiene stations at health centres and offices. In addition, UNRWA installed supplementary telephone lines for MHPSS personnel at healthcare facilities and RSSP offices to facilitate

communication with beneficiaries and provide referrals to other services as required. Starting from September 2020, UNRWA equipped school counsellors and social workers with mobile phones and phone credit to enable the provision of remote MHPSS services in accordance with their designated scope of service.

MHPSS personnel were provided with specialised instruction on the provision of remote MHPSS services and the ethical implications of remote counselling in order to enhance their proficiency in this area. The initial training for MHPSS supervisors in the three core programmes was conducted in April 2020, with a subsequent training session held in June 2020. The competencies of staff members in conducting remote counselling were enhanced through the provision of trainings by external partners and internal trainings that employed a Train-the-Trainer (ToT) approach to counsellors. During the pandemic, UNRWA established partnerships with research entities to enhance their staff's knowledge of best practises, as well as to remain current with evolving guidelines and recommendations.

Supervisors extended remote assistance to their personnel to monitor their well-being. Moreover, psychosocial counsellors, school counsellors, and social workers provided both individual and group counselling services to staff members within their respective programmes. During the workshop, it was reported by GMB participants that the psychological wellbeing of staff was affected by the wellbeing of community members. The act of delivering food parcels and essential medicine to homes by the staff elicited a sense of gratitude, which in turn boosted their morale and inspired them to do more to serve their community.

> "…we worked together on the Health Task. In a reference document between the RSS and the HP, it was agreed that our role as RSS is not just limited to help in the distribution of medicines. Our role includes also communicating with people, comforting them, and providing them with psychological first aid if they need it. Through this process we were able to identify cases that need more specialized or more in-depth interventions such case management or counseling. I would like to emphasize that the reactions of the people were very positive in this aspect, especially the elderly.

They were very happy, and they would say "we are very happy that UNRWA is asking about our wellbeing and checking up on us". We at the RSS are grateful to the HP for this opportunity and I would say that the collaboration was very successful. It was so encouraging for us to feel people's appreciation". **Staff delivering MHPSS service**

3. Provision of UNRWA's emergency response required new ways of managing available resources:

The COVID-19 pandemic had a direct impact on the financial resources allocated towards the implementation of a comprehensive MHPSS response, in accordance with the established framework. The funds that were at hand were inadequate to address the supplementary requirements related to the pandemic. Subsequently, UNRWA orchestrated an urgent plea to solicit additional financial resources. During a three-month period, an emergency appeal was conducted and UNRWA subsequently mobilised internal funds to initiate the implementation of the MHPSS response. A comprehensive response, tailored to the requirements of the recipients, was not feasible until June 2020, when financial resources were obtained and personnel were provided with logistical assistance, such as mobile devices, laptops, and phone lines, to facilitate remote counselling.

In instances where the transportation of medications and PPEs from the central pharmacy at UNRWA headquarters was hindered, UNRWA resorted to procuring these items from the local market and other alternative sources. Furthermore, in light of UNRWA's inability to manage the expeditious home delivery of food aid to 1.15 million refugees, UNRWA sought the services of an external company.

"Regarding the medications, we didn't have any interruption but that's due to the efforts of our pharmacists who did a lot of anticipation work. Sometimes, there were medications that stopped coming to us as the headquarters stopped importing them but we used money from other projects to buy from the local market, the West Bank and Jordan". **Staff in MHPSS service set-up and emergency response**

According to GMB participants, governmental institutions lacked both a contingency plan and the financial resources necessary to adjust their services to remote modalities in response to the pandemic. Despite being a primary healthcare provider, UNRWA adapted its human resources policies to address the lack of a functional referral system to external partners. This involved the contracting of psychiatrists to provide specialised mental health services.

UNRWA provided its personnel who were deemed vulnerable, including those who were over 60 years old, cohabiting with family members over 60 years old, or with comorbidities such as hypertension, diabetes, or taking immunosuppressant drugs, with the alternative to work remotely from their homes. According to GMB participants of the health programme, patients who required critical mental health care (such as persons attempting suicide) were provided with remote psychiatric sessions, even when they were permitted to visit health centres for in-person services. The rationale behind this approach was attributed to the psychiatrist's own susceptibility, resulting in the patient receiving psychiatric treatment remotely via MS-Teams or Zoom, while the psychiatrist conducted the session from their residence. Between November 2020 and February 2021, remote psychiatric sessions were provided to 400 critical and high-risk cases, as reported by participants of the GMB.

> "We did something in 2020, before the introduction of vaccines, which is the introduction of a remote psychiatric session. The psychiatrist at the time was vulnerable himself. He was old aged, smoker and has a heart condition. We introduced a new modality whereby the client would come to the clinic according to his/her appointment and the psychiatrist would meet with him over MS-Teams while he's at home. The doctor would meet him with for an hour. At that time, it was difficult to refer to the ministry of health because they had strict measures and they were not accepting patients. They were closed similar to what was happening worldwide". **Staff in MHPSS service set-up and emergency response**

6.3.4   Activity 4: Identifying points for strengthening the MHPSS response in preparation for future pandemics:

In this activity, each participant was asked to identify at least one point for strengthening UNRWA's MHPSS response in preparation for future pandemics. The following are what participants mentioned:

1- Incorporating MHPSS module within the upgraded ICD-11 e-Health system: GMB participants mentioned that the current e-Health system, the electronic recording system for patient data used at UNRWA, does not have an MHPSS module. In Gaza, MHPSS staff have been utilising a basic in-house recording system for MHPSS services using Microsoft Access. Currently, UNRWA has developed a new e-health system to incorporate ICD-11 (International Classification of Diseases and Related Health Problems). This new version, which can also operate offline, has MHPSS module and will therefore, facilitate the work of MHPSS staff in recording patient data (screenings, interventions, referrals etc.).

2- Set new policies and develop SOPs utilising the lessons learned during the current pandemic: GMB participants highlighted the need to document all the practices and the lessons learned into SOPs that can inform and accelerate the response in future pandemics.

-    In a context such as Gaza, where wars and armed conflicts are recurring, it is important to develop SOPs taking into consideration the co-occurrence of a double crisis, a pandemic and an armed conflict, with the need to identify the most life-saving practices in such a situation.

3- Enhance staff support: According to GMB participants, staff were a key element in adjusting services promptly and implementing innovative responses such as home-delivery of essential medications and food parcels. They were working under the stress of contracting the virus and transmitting it to their loved ones. Enhancing staff care and addressing the mental wellbeing of staff post-pandemic should be prioritized.

4- Enhance HR capacity:

- GMB participants from the three core programmes mentioned that the skills acquired during the pandemic on remote counselling, in addition to trainings on psychosocial first aid and WHO-mhGap need further strengthening and expansion.

- Health programme participants emphasised the need to strengthen staff's capacity in telemedicine as UNRWA is planning to continue with this modality and integrate it with service delivery. Currently, the Monitoring and Evaluation (M&E) Department at UNRWA is conducting an evaluation based on data taken from UNRWA health programme and community feedback.

- RSSP participants suggested building on the knowledge acquired in using tools for remote working and service delivery. RSSP staff had the impression that the tools utilised for remote working and service delivery (e.g. MS Teams and Zoom), not used by UNRWA staff prior to the pandemic, were useful in the day-to-day communication between staff and their supervisors and in delivering remote MHPSS services. GMB participants suggested the need to identify additional tools, that proved to be efficient elsewhere, and train the staff on how to use them.

- GMB participants from the health programme pointed out that the current plan is to expand the staff's capacity in the WHO-mhGap by training the health staff on additional modules, namely: children and adolescents and elderly with dementia. According to participants, this will prepare them better for future pandemics because it will enhance their ability to identify cases in need for MHPSS services.

5- Allocate more funds to UNRWA: the needs of Palestine refugees in Gaza are huge and there is always room for providing more services and supporting more people. GMB participants had the impression that UNRWA staff is very capable to offer more but are constrained with the financial capacity of the Agency.

6- Seek additional partnerships with local organizations that provide MHPSS in Gaza: GMB participants talked about other organisations in Gaza that deliver MHPSS services. They gave an example of a local organization that developed a mobile application and was successful in reaching out to community members, women subjected to GBV in particular.

- Health staff at the workshop suggested mapping existing organisations in Gaza who provided MHPSS services during the pandemic, seek partnerships with local entities to share knowledge and expertise and collaborate with them to maximise UNRWA's response and improve access to MHPSS services in future pandemics.
- RSSP staff mentioned that the current partnerships are with stakeholders providing specialized psychiatric services. Partnership with local NGOs providing relief and social services should be sought.

6.4 Discussion

UNRWA's MHPSS Framework as a representation of UNRWA's response:

This study documented UNRWA's MHPSS response in Gaza during the COVID-19 pandemic bringing together participants from the three core programmes in a group model building workshop. GMB participants' accounts were analysed against UNRWA MHPSS Framework which was found to be a fairly accurate representation of UNRWA's response during the pandemic. The MHPSS Framework is not explicit, though, on how staff wellbeing relates to contact with people and whether or not they meet their needs. As shown in Figure 5, a reinforcing feedback loop is evident between variables describing staff wellbeing, service delivery and access to care. Interventions, such as home visits to distribute food aid and life-saving medications, made the community feel more appreciative of UNRWA staff which bolstered staff psychological wellbeing. Staff psychological wellbeing helped support and sustain HR capacity which in turn was linked to service delivery i.e. the implementation of MHPSS network/services. This maintained access to care which helped address MHPSS needs and in turn also supported staff wellbeing. Two pathways enabled this enforcing feedback loop namely: partnership with the external agency to distribute food aid and the collaboration between the RSSP and Health programmes in the Health Task to home-deliver medications; both have facilitated access to services which enhanced staff wellbeing.
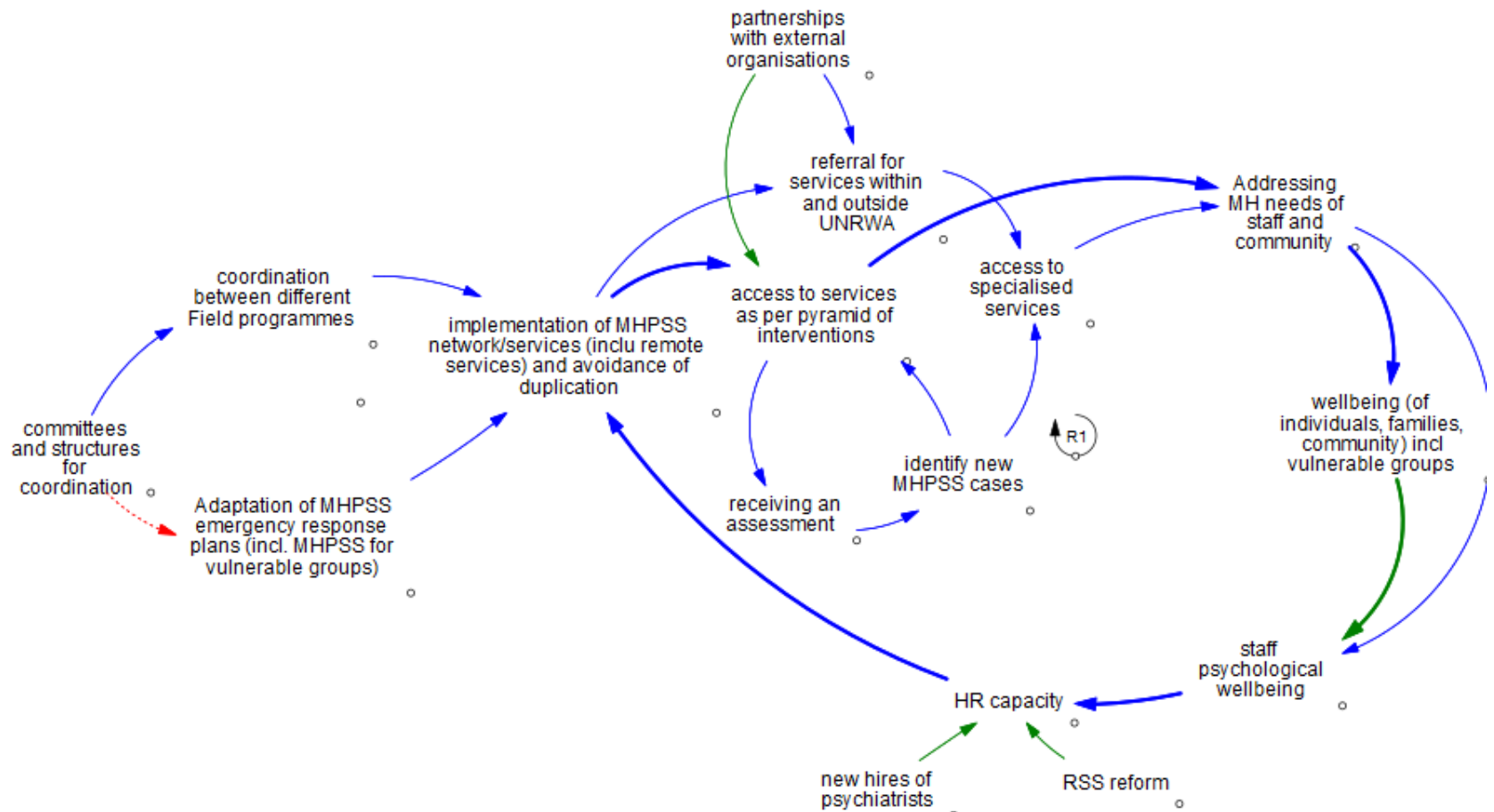
Figure 13: Feedback loop enabling MHPSS response during the pandemic. Green arrows depict connections formed during the health crisis. R: Reinforcing

In April 2020, another framework was developed by early career psychiatrists from 16 countries, with at least one psychiatrist representing a WHO region, to address the mental health care during COVID-19 (Ransing et al., 2020). The framework was developed over three phases starting with collecting the following information from each country: epidemiological information on mental health problems, preparatory plans, innovative measures adopted or will be implemented, available resources and pre-existing infrastructure, trainings and available funding (Phase 1), followed by the development of a priori conceptual framework categorized as per the WHO pandemic preparedness plan (WHO, 2005b) (Phase 2) and finally consolidating suggestions and modifications, using the delphi method, to develop the final mental health preparedness and action framework (MHPAF) in Phase 3. They also developed an emotional epidemic curve to understand the changes in emotional behaviour throughout the pandemic and recommend stage-specific measures. The components of the MHPAF were: 1- preparation and coordination, 2- monitoring and assessment, 3- reducing mental distress due to misinformation and myths, 4- sustainability of mental health care services and 5- communication. Compared to UNRWA's MHPSS Framework, the additional value of the MHPAF is its ability, with the emotional curve developed, to prioritize interventions and flatten the emotional epidemic curve thus, increasing the capacity of the health system and enhancing its performance. Moreover, the MHPAF emphasises the importance of having a mental health surveillance system that generates real-time data on mental health problems and populations at risk; a system currently lacking at UNRWA. UNRWA is upgrading the e-health system to incorporate ICD-11 (International Classification of Diseases and Related Health Problems). This new version will contain an MHPSS module and will therefore, standardize the recording procedure in the five fields of operation. The generated reports of the upgraded UNRWA e-Health will demonstrate the disease burden, compare mortality and morbidity data at different times, enable comparisons between fields or areas, help in designing effective public health policies and interventions and determining their effectiveness (UNRWA, 2019). The MHPAF relied on the perspectives of early

psychiatrists therefore, it does not take into account MHPSS activities outside health care. On the other hand, UNRWA MHPSS Framework guides the performance of all MHPSS activities taking place within health, relief and social services and education. During COVID-19 pandemic, addressing sources of distress outside the health care system is as essential to improve physical and mental health outcomes (Patrick Drake and Robin Rudowitz, 2022).

UNRWA's response to address MHPPS needs of PRs in general and vulnerable groups in particular

Participants' accounts showed that the three core programmes in Gaza adapted their MHPSS activities during the pandemic, focusing on promotion and prevention activities, supporting families and communities, and reinforcing positive coping mechanisms and stress management. As recommended by the "IASC Operational Considerations for Multisectoral Mental Health And Psychosocial Support Programmes during the COVID-19 Pandemic" (Inter-Agency Standing Committee (IASC), 2020), UNRWA provided multi-layered MHPSS, following the pyramid of interventions, acknowledging that different people would need support at different levels (Figure 6). To achieve that, UNRWA staff at the core programmes in Gaza resorted to novel models including online platforms to continue providing MHPSS, established new partnerships, and activated collaboration channels.
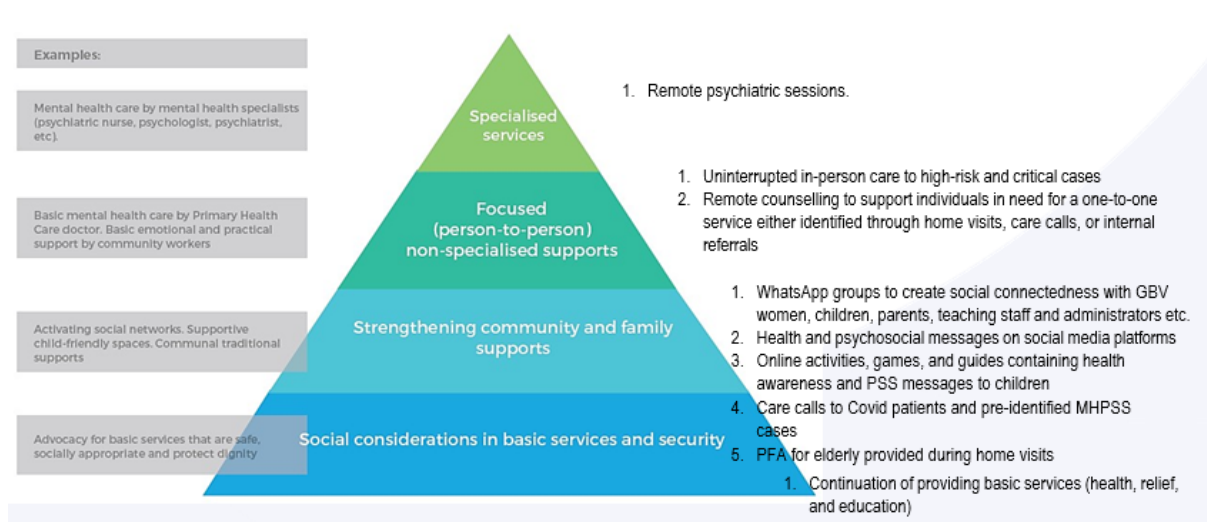
Figure 14: Examples of UNRWA multiple-level interventions as per the IASCMHPSS intervention pyramid

Informed by "the COVID-19 Strategic Preparedness and Response Plan for UNRWA" and WHO technical guidelines, UNRWA programmes acted promptly to adopt a range of adaptive responses. Expectedly, measures that had pre-existing policies and procedures addressed MHPSS needs as soon as they were deployed. As early as March 2020, UNRWA education programme activated its renowned Education in Emergencies (EIE) approach. This approach ensured an inclusive and equitable education for children by providing them with printed curriculum materials (thus, overcoming internet and electricity-related challenges), in addition to the online modality (UNRWA, 2020a). This was not the case with the response at the health programme. During the same month, health centres introduced triage, hotlines were set up in 22 health centres to begin implementing telemedicine (UNRWA, 2020a). GMB participants mentioned that UNRWA had to utilise part-time and JCP staff who were untrained to deliver MHPSS. Although UNRWA's primary intention of telemedicine was to provide medical consultations over the phone yet, the inability to maintain the proper integration of MHPSS within primary health care was a gap. Even for the fixed-term staff who were trained on mhGAP, the status quo-ending event such as the pandemic catalysed the quick shift towards telemedicine before health professionals were adequately trained on remote counselling. As pointed out by Tran et al., telemedicine is not merely the transition from

face-to-face to virtual service delivery. A successful deployment of telemedicine requires having health professionals who are trained at the personal and professional level to provide virtual care (Mallen et al., 2005; Tran et al., 2020).

MHPSS staff conducted focused interventions targeting vulnerable groups such as women subjected to GBV, children with protection needs and/or disabilities, NCD patients, orphans and adults with disabilities. In addition to providing in-person care and home visits, when possible, psychosocial counsellors, school counsellors and social workers provided MHPSS using WhatsApp groups and remote one-to-one counselling. Research evidence showed that digital support groups could be advantageous over on-site support as they may improve accessibility and affordability of mental health services (Yao et al., 2020). A recent meta-analysis concluded that more rigorous research is needed to know what works and for whom. Interestingly, the meta-analysis pointed out to a possible gender difference with women seemingly showing better outcomes using virtual interventions (Batastini et al., 2021). The same study emphasised that the success of a remote intervention for vulnerable people was largely dependent on the intervention site. Batastini et al. suggested establishing partnerships with community organisations to use their facilities as a private space for clients to attend their sessions (Batastini et al., 2021; Calkins H, 2021). Bo et al. reasoned that effectiveness and acceptability of online mental health interventions requires further evaluation. A study conducted on 714 clinically-stable COVID-19 patients in Wuhan (mean age 50.2 ± 12.9 years) showed that only half of the participants found online psychoeducational resources and remote counselling helpful. The authors argued that an on-site intervention for patients who have reading difficulties or limited access to online devices might be more effective (Bo et al., 2021).

This study offered the following advantages. First, there was an equal representation of participants from the three core programmes with equal distribution between participants providing MHPSS and those planning the service/ response. The workshop was conducted in Arabic; the native language of the participants. The workshop served as an opportunity to exchange knowledge and generate an understanding of the MHPSS response, at the

field level, and ways to strengthen it. As voiced by the GMB participants, the workshop gave them an insight of how different factors interacted to shape the MHPSS response.

According to Vugteveen et al., the method comes with its own limitation as it takes into account the participants' understanding and their own mental model (Vugteveen et al., 2015). Also, we do acknowledge that the hierarchy of staff present might have fueled participants' hesitation to share a different opinion than that of their supervisor. Finally, the lack of time to elaborate the full conceptual model during the workshop. The completion of the full model is very time-consuming and extending the time of the workshop was not feasible as participants had shorter working days at the time of the workshop, as the workshop took place during the Holy month of Ramadan, and they had other clinical and administrative obligations to attend to. To circumvent this, I will be sharing the final model with GMB participants and will be open for revising the model as per their feedback. Having validated the final model against voice recordings of the workshop, I do not anticipate any changes to the model.

6.5 Conclusion

Mental health needs of Palestine refugees were high before the pandemic and there is a perception that these needs have increased even further during the health crisis. UNRWA reorganized the mode of service delivery to continue providing its services and resorted to less conventional models in service delivery. Further studies are needed to validate the accessibility, effectiveness and acceptability of interventions, especially if they are going to be adopted post-pandemic. Research around the different MHPSS interventions deployed during the pandemic can inform UNRWA's policies, guidelines and service planning.

The GMB model by itself, without system modelling, does not offer an implementation component. It demonstrates the complexity of a system and the interplay of different factors. To generate actionable items, further studies on the weight of effect of different factors is needed. It did demonstrate, however, that a successful MHPSS response is accomplished with the successful implementation of all components of the UNRWA

MHPSS Framework. An additional finding is the impact of community wellbeing on enhancing HR capacity.

The context of Gaza is unique in so many ways but that does not mean that the results cannot be transferable to other humanitarian contexts. The response was analysed against UNRWA MHPSS Framework which adopts international guidelines (IASC guidelines on MHPSS in emergency settings). Therefore, elements of the framework that guided MHPSS response resemble those found in other systems that use IASC as their reference.

Chapter 7
Discussion and Conclusion

In this section, I emphasise the need of addressing social determinants to promote health equity and enhance health outcomes. I then discuss the EMR as a location where socioeconomic determinants play a significant role in driving diseases, particularly mental illness. I use educational attainment as an example, since it is a recurring issue in my three PhD studies, and discuss how it connects to health equality and, consequently, health outcomes. Section 7.3 discusses the relationship between mental health and non-communicable diseases (NCDs) and suggests the Collaborative Care model for managing these two illnesses in a clinical setting. Section 7.4 discusses the effects of the COVID-19 pandemic on the attainment of the SDGs and how the pandemic affected the social determinants of health and, consequently, health outcomes. The subsequent section gives advice for future pandemic preparedness based on UNRWA's pandemic experience. Sections 7.6, 7.7 and 7.8 provide suggestions for future research, policy and practice, respectively. I conclude by providing methodological implications and overarching reflections of the entire thesis.

7.1. Social determinants and their interlinkage with health equity and health outcomes

Earlier in Chapter 2, I talked about health equity and how it implies that everyone should have an equal and just chance to be healthy (Gómez et al., 2021). According to Marmot, the state of having health equity does not only mean that one should have the opportunity to reach his/her full health potential but also, no one should be prevented from reaching his/her potential due to their respective social position or any other scenario that can be defined in terms of society (Marmot, 2018). Opportunity and health equity are inextricably tied to one another. The factors that shape people's health, such as poverty, unemployment, inadequate education, inadequate housing, poor public transportation, exposure to violence, and neighbourhood deterioration, be it physical or social, are among the factors that contribute to health inequities (National Academies of Sciences & Medicine, 2017).

The WHO Commission on Social Determinants of Health outlined the evidence that preventable health inequalities — health inequities (discussed in detail in Chapter 2)— are impacted by social determinants or the conditions in which people are born, raised, reside, work, and age (WHO Commission on the Social Determinants of Health, 2008). These conditions are shaped by political, social, and economic drivers i.e., by power distribution, resource disparities, and wealth. The social determinants of health have a significant impact on health inequities, which can be found both within and between nations. There is a correlation between a country's socioeconomic status and its degree of health and sickness across all income brackets with the poorer segments of the population exhibiting more severe health problems (WHO, 2022). The WHO Commission was of the opinion that a society can be evaluated based on the quality of its population's health, the degree to which health is distributed equitably across the socioeconomic spectrum, and the degree of protection offered against disadvantage resulting from poor health (WHO, 2008). Because of the consequences that it has for everyday life, the economy, and civic life, health equity is essential to living a good life and developing a society that is lively (National Academies of Sciences & Medicine, 2017). Finally, to achieve health equity, it is important to address the social determinants and eliminate the hurdles to health, such as poverty, and prejudice along with its repercussions, such as disempowerment and lack of access to good jobs with fair pay, quality education and housing, safe settings, and health care (Gómez et al., 2021).

A substantial body of evidence has demonstrated that the social determinants of health influence a vast array of health and well-being outcomes, functioning, and quality of life (Healthy People 2030, 2022). Although biology, genetics, and lifestyle choices do play a part in the inequalities observed in the health outcomes of different population groups, the degree to which social, economic, and environmental variables influence many health outcomes is far greater. To simplify, Keyes and Galea in 2016 use the metaphor of a fishbowl to explain the connection that exists between a human and the conditions in which an individual lives. Regardless of how hard the fish tries to take care of itself individually, it will never achieve its maximum potential of health if the bowl it lives in is

dirty, or if the glass is broken and water is pouring out. This metaphor demonstrates the futility of addressing individual behaviours without taking into consideration contextual conditions, despite the fact that the life of a person is undeniably more complicated than that of a fish (Keyes & Galea, 2016). Evidence suggests that the social determinants of health account for 30- 55% of variation in health outcomes (WHO, 2022c).

The systematic review, Chapter 4, helped in identifying how social factors such as ethnicity and years of education, for example, increase the risk for the development of non-communicable diseases among adults with common mental disorders. The study adds to the global evidence-base on factors that have been found to be directly associated with NCD onset and therefore, the study can help policy makers and practitioners to tailor interventions to address these specific factors in orders to break the cycle between mental health disease and other NCDs.

7.2. The EMR: a region where social determinants play a significant role in driving diseases, especially mental health diseases

High levels of conflict and the associated displacement, sanctions, and occupation negatively impact the health of the entire Eastern Mediterranean Region. In all regions, gender disparity exists, but it is particularly pervasive in this region, affecting key social determinants of health and the development opportunities of all EMR nations. Global warming and environmental deterioration are also essential concerns for the Region, and the repercussions are already being noticed in the form of rising temperatures, dry spells, and soil erosion, while measures to reduce the impact and adapt to climate change will have a significant effect on the economies of oil-producing nations throughout the Region (WHO Commission on the Social Determinants of Health in the Eastern Mediterranean Region, 2021). Across the EMR, inequities in social determinants of health are found to result in inequities in health outcomes, particularly in mental health outcomes. This is made worse by the compromised accessibility and availability of proper mental health therapies and treatments (WHO-EMRO, 2020).

This PhD focused on Gaza specifically, where mental health was already a substantive concern, even prior to the COVID-19 pandemic. In Palestine, mental illnesses are one of

the greatest public health challenges. The WHO has proclaimed that the prolonged situation of mental ill health in the Gaza Strip is primarily due to the Israeli occupation. In the Gaza Strip, an estimated 210,000 people, or more than one in ten, suffer from severe or moderate mental health disorders. Over half of conflict-affected children suffer from post-traumatic stress disorder, and according to the WHO, the overall burden of adolescent mental disorders in the oPt is one of the highest in the EMR (Middle East Monitor, 2019b). Findings of a study, published by the Norwegian Refugee Council (NRC), revealed that 68 percent of pupils living in regions that are geographically close to the Israeli border fence exhibit clear signs of emotional distress. Children have also reported experiencing violence first-hand, as well as knowing people who have been wounded, killed, or have lost their houses, according to the NRC. The international NGO noted that 54% of respondents believed there was no chance for a better future, which is a cause for concern. In addition, the study found that an astounding 81% of youngsters struggle academically as a direct result of the stress caused by Israeli violent practices (Middle East Monitor, 2019a).

As discussed in Chapter 2, addressing social determinants need to adopt a life-course approach since exposure to stressors and vulnerabilities, regardless of the age group, can have a debilitating effect on mental health outcomes (Allen et al., 2014). Early education is one of the critical determinants whose effect could extend to later in adulthood (Hertzman et al., 2010). In the sections below, I will use education as an example of a social determinant that was recurrent in my three studies and is expected to contribute to health inequities and impact health outcomes.

7.2.1   Education exacerbating health inequity

Findings of the three studies in this PhD highlight the impact of social determinants in terms of shaping population's health and contributing to health inequities. In the first study, I examined the global evidence-based literature to identify the factors that increase the disease burden among people with common mental health disorders. Specifically, the factors that lead to the progression to NCDs. After screening over 19,000 articles from the literature, 12 studies met the inclusion/exclusion criteria and were considered for analysis.

As an example, one of the social determinants shaping population health, identified in my systematic review, is educational attainment. The systematic review found that the risk for diabetes onset was elevated amongst depressed participants with 12 years of education or less.

The above finding is in line with other literature that highlights the causal effect between education, on one hand, and health and wellbeing on the other (Feinstein et al., 2006; Grossman, 1997; Mirowsky & Ross, 2017; Winkleby et al., 1990). Based on findings from earlier studies, Egerter et al. in 2011 found that education can influence health in a variety of different ways that are all interconnected with one another. The authors recognize three primary pathways (Egerter S, 2011). First, educational attainment increases health knowledge, literacy, ability to cope and solve problems, which in turn influence health behaviours; Second, educational attainment shapes employment opportunities and related benefits. This, in turn, translates into safer working environments as well as benefits such as health insurance and paid time off for illness. Also, according to Rouse and Barrow an additional year of education results in a nearly 11 percent increase in annual income (Rouse & Barrow, 2006). Third, social and psychological factors, such as: sense of control, social status and social networks, are also influenced by educational attainment, and affect one's health (Cutler & Lleras-Muney, 2006; Lundborg et al., 2016).

Education can also affect health outcomes when considering the life-course of individuals and the social conditions they live in. According to available evidence, educational disparities become apparent at an early stage in one's life, which is reflective of broader societal inequities (Garcia, 2015). Early disparities in education are evidenced by the significant vocabulary gaps that exist between children whose families have a low income and those whose families have a middle or upper income. Children who come from families with low incomes may have a vocabulary deficit of 600 words by the age of 3, and this deficit can grow to as many as 4,000 words by the age of 7 (Christ & Wang, 2010). Reading and writing abilities are both directly impacted by these word gaps (Marulis & Neuman, 2010). Children who are not reading at grade level by the time they are 7 or 8 years old are much more likely to struggle academically (Chall et al., 1990).

Early literacy levels have been shown to have a correlation with both the likelihood of graduating from high school and the likelihood of participating in post-secondary education opportunities and therefore, following more secure and financially rewarding career paths compared to their peers who get stuck in dead-end jobs (Finnie & Meng, 2007). Therefore, paying attention to and investing in early childhood education is generally seen as an important way to reduce educational disparities (Barnett, 2013), contribute to social and economic wellbeing (Finnie & Meng, 2007) and hence, improve health (Grossman, 2006).

Prior to COVID-19 pandemic, estimates from 2016 indicate that 250 million, or 43%, of children in low-middle-income countries are unable to reach their full developmental potential as a result of the difficulties they endure during their early years (WHO, 2016). During the first eight years of life, termed as early childhood, the brain matures in all dimensions (Grantham-McGregor et al., 2007) and development occurs at the physical, social, emotional, intellectual, and motor levels (WHO, 2016). At this age, the growing brain is very malleable and susceptible to change as billions of neuronal networks are established, laying the foundation for lifelong health and well-being. The earliest years of childhood and the period till the completion of school are the most crucial for health disparities. The experiences of infancy and childhood build the groundwork for the remainder of life, and inequities at this period of life translate into health disparities throughout life. It is also the time when interventions have the greatest potential to improve outcomes and reduce disparities, resulting in lifelong advantages (WHO Commission on the Social Determinants of Health in the Eastern Mediterranean Region, 2021). In this PhD, study 2 (Chapter 5) discusses how the COVID-19 pandemic affected education of children in Gaza, especially those who are most financially deprived. In what follows, I offer an overview of how education was impacted by the pandemic and how it relates to inequities, and detail findings of study 2 in relation to this.

Unfortunately, the COVID-19 pandemic exerted a negative impact on education with 80-90% of children across the globe experiencing school closures (Van Lancker & Parolin, 2020). Resorting to remote modalities, the pandemic emphasised the unequal access to

knowledge and resources across the social gradient and even across genders (Shulla et al., 2021). Even in high-income countries such as the United States, students contended with unstable internet connections and Zoom fatigue, making the year 2020 a very difficult year for teachers and pupils alike (McKinsey and Company, 2021). While all student types experienced incomplete learning, certain groups were disproportionately impacted, highlighting the fact that incomplete learning was inequitable (McKinsey and Company, 2021). During the pandemic, students in the United States, in mostly low-income schools and in urban areas, lost more knowledge than their counterparts in high-income rural and suburban schools. Students of colour and students coming from low-income families suffered the most. Students in majority-Black schools were six months behind in in both mathematics and reading at the conclusion of the school year, while students in majority-white schools were just four months behind in mathematics and three months behind in reading. A whole generation of pupils may be adversely affected by the pandemic's cumulative impacts. Education achievement and attainment are not just associated with higher incomes, but also with improved health (Grossman, 2006), lower crime levels (Lochner & Moretti, 2004), and increased political engagement (Milligan et al., 2004).

In my study on the impact of the COVID-19 pandemic on social determinants of health in Gaza, participants reported that the education process was disrupted, especially for children of poor families who, due to financial barriers, did not have the means to access remote learning due to absence of internet access at home or lack of digital means such as laptops or smart phones. Looking at the literature, it is anticipated that even students in Gaza whom their parents could afford to provide internet connectivity at home, they also struggled due to power outages, weak and/or unreliable internet connectivity and the fact that usually there is more than one learner per household sharing the same device (Bashitialshaaer et al., 2021). According to the Borgan Project, Gaza is still operating at 2G system with Israel abstaining from expanding the coverage in Gaza and taking advantage of the political situation to tighten the blockade (The Borgan Project, 2021). A study by Al Mezan Centre in 2020 showed that the internet connection deteriorated even

further during the pandemic compared to previous years where the connection speed was only 8 megabytes/second compared to 14 megabytes/second in 2020 and 2014, respectively (Al Mezan Centre for Human Rights, 2020). A study in India showed that unreliable internet connectivity was a major source of anxiety among students (Chakraborty et al., 2021).

Research suggests that, in the short-term, there is a general concern regarding the detrimental effect of school closures on children and adolescents' developmental capacities such as establishing social connections with friends and peers (Masten & Coatsworth, 1998), and hence on their mental health (Parker et al., 2015). A poll of 16,370 parents across all 50 states of America in 2021 found that, since the start of the pandemic, almost 80% of parents have had concerns about their child's mental health or emotional and social health and development. Moreover, 35% of parents were very or extremely concerned about their child's mental health during the COVID-19 pandemic, and a similar number were worried about their children's emotional and social well-being. Parents of preschool and kindergarteners tend to worry less about their children's mental health than those of older children yet, worries of the latter group are widespread. While 30.7% of parents of elementary school children were generally worried, those of middle schoolers (37.5%) were very worried (McKinsey and Company, 2021).

Following the analogy of the impact of early literacy on future prospects, explained earlier, the long-term impact of missed days of schooling during the COVID-19 pandemic can have serious repercussions for the chances and prospects of pupils far into adulthood (McKinsey and Company, 2021). McKinsey et al assessed student learning in the United States during the pandemic and analysed the results of the i-Ready in-school examination administered by Curriculum Associates to more than 1.6 million elementary school children in more than 40 States. They then compared the performance of pupils in the spring of 2021 to that of comparable students before to the pandemic (from 2017- 2019). Comparatively, test-takers in 2021 were approximately ten points behind in mathematics and nine points behind in reading compared to test-takers in prior years. The knock-on effects could make it more difficult for students experiencing unfinished learning during

the pandemic to get an education and secure a job. The same study indicated that today's pupils stand to lose between $49,000 and $61,000 in lifetime earnings as a result of the pandemic's effect on their education if action is not taken to remedy incomplete learning. Moreover, as this generation enters the labour force, it is expected to have a yearly impact on the United States economy of between $128 billion and $188 billion (McKinsey and Company, 2021). Evidence from the Organization for Economic Cooperation and Development (OECD) indicates that school closure could reduce a learner's lifetime income and a country's Gross Domestic Product (GDP) by an average of 3 and 1.5 percent, respectively, over the remainder of the century (OECD, 2020; United Nations, 2020). Long-term, this will also impact health and health equity (Araújo et al., 2021; Armitage & Nellums, 2020).

In addition to the disruption in the education process, social workers and health care providers in Gaza, in study 2 and 3, also expressed their concerns regarding children showing signs of violence during the pandemic; another risk factor that could adversely impact children's health and development. While access to learning and continuing the provision of quality education are key issues for health across the life span, this theme pertains not only to the child and adolescent experience but also has indirect impacts on adults during the pandemic; for instance, many families were left with limited options for childcare services, and parents, especially women, faced additional pressure to manage their children's learning and development while also juggling their own work responsibilities (Russo et al., 2021). One of the challenges that the United Nations Educational, Scientific and Cultural Organization (UNESCO) highlighted during the COVID-19 pandemic is the parents' struggle to attend to their children's needs while they are learning remotely (UNESCO, 2021). In Chapter 5, I talk about mothers, in particular, juggling work, home duties and attending to family members' needs. Specifically, I talk about the experience of mothers in relation to distance and home-schooling of their children during the pandemic. The anxiety that was reported by interviewed working mothers in Gaza echoes with available data in the literature (Kirwin & Ettinger, 2022). In

Chapters 5 and 6, I also talk about another stressor that women in Gaza encountered during the pandemic; the increased prevalence of GBV.

Looking at findings from the systematic review, other social determinants such as, female gender, was also found to be associated with NCD onset. In Chapter 4, I present the risk associated with being a female with depression and/or PTSD and the risk for developing CVD and Asthma. Therefore, gender is another social determinant that has a significant effect on health outcomes. In a Region where gender inequity is highly pervasive, women are almost absent from COVID-19 decision-making groups and task teams. Analysis of the composition of COVID-19 decision-making task forces in seven nations of the EMR revealed six women and eighty men; women represented 7% of the task force membership (Van Daalen et al., 2020).

7.3. Interaction between mental health and NCD provision

Inequities in crucial social determinants of health are expected to result in broad mental health inequities that are exacerbated by lack of access to suitable therapies and treatments across the EMR. Due to poor levels of awareness, identification, and documentation of mental health illnesses, mental illness rates are likely to be substantially higher than what is reported. As is the case globally, depression and anxiety are the most prevalent diagnoses in the EMR (WHO Commission on the Social Determinants of Health in the Eastern Mediterranean Region, 2021). The underlying individual, community, and societal variables regularly link mental disorders with physical NCDs (Stein et al., 2019). In Chapter 4, I provide the data tying prevalent mental health disorders to the occurrence of NCDs by looking at causal factors that potentially increase the risk of developing cancers, diabetes, CVD and Asthma among people having depression and/or PTSD. Findings from the systematic review suggest that the chronicity of depression and PTSD could be associated with increased risk for cancer and asthma onset, respectively, and therefore treating depression and PTSD could prevent progression into the development of the latter NCDs. Moreover, the high association between depression and CHD suggests the need to target depression as primary prevention to prevent the progression into CHD. On the other hand, factors such as educational attainment, number of cigarettes smoked,

female gender, older age, elevated BMI and ethnicity may contribute to an elevated risk for developing NCDs among adults with depression and/or PTSD. Therefore, in order to reduce the incidence of NCDs, mental health and well-being should be targeted and prevention strategies focusing primarily on high-risk groups, where factors listed above are present, can and should be adopted.

There has never been a time when it was clearer that people who struggle with mental disorders require treatment methods that address their mental as well as their physical health in order to experience an overall improvement in their wellbeing and health (Ee et al., 2020). This is emphasised in the World Health Organization's mental health action plan for 2013–2020, and last year, the UN member states shifted their attention from the four major NCDs and risk factors to a five-by-five approach that incorporates mental disorders and environmental contributors (Stein et al., 2019). In order to accomplish this goal, it is necessary to implement an evidence-based therapy strategy that is both more comprehensive and integrated in its approach to mental and physical health (Ee et al., 2020).

7.3.1   Collaborative Care

Strong connections and interconnected causal processes between mental health disorders and other NCDs urge for a collaborative care strategy. Collaborative care has emerged as a crucial evidence-based strategy for integrating mental health services into primary care (Ngo et al., 2013). There is no universally accepted definition of collaborative care; nonetheless, collaborative care entails the presence of many health care professionals giving care to a patient, along with continuous, periodic communication and coordination between members of the treating team. According to all definitions, collaborative care fosters tighter working partnerships between primary care (such as family doctors, general practitioners and practical nurses) and specialty health care (such as Community Mental Health Teams). There are numerous methods for achieving this, making collaborative care extremely complex. The purpose of integrating or connecting primary care and mental health services so that they work better together is to improve communication and collaboration among health professionals (e.g., general practitioners, psychiatrists, nurses,

pharmacists, psychologists). This is intended to offer a person with mental health problems and disorders better community-based care, which is frequently less stigmatising, and the promotion of good practice helps beneficiaries continue engaging with services. Many general practitioners continue to believe that physical health issues (such as diabetes, heart disease, and smoking cessation) are their primary responsibility, while they view the treatment of mental disorders as the responsibility of psychiatrists and other mental health professionals. The goal of collaborative care is to improve the overall quality of care by ensuring that healthcare professionals collaborate to address the physical and mental health requirements of individuals (Reilly et al., 2013). Having said so, Stein et al suggest that mental health professionals need to also develop their knowledge and skills around the integration of physical conditions into mental health care (Stein et al., 2019).

Oftentimes, the terms "Integrated Care" and "Collaborative Care" are used interchangeably, yet there are slight but significant distinctions in approach (APA and Academy of Psychosomatic Medicine, 2016) with integrated care involving the highest degree of collaboration between mental health and other health care professionals (APA, 2017). In an integrated collaborative care model, patients with a chronic medical disease have a non-specialist case manager, who manages care by liaising with primary care practitioners and mental health professionals to tackle behavioural challenges, such as non-adherence to treatment or concomitant mental disorders (Patel & Chatterji, 2015). In this model, the case manager monitors risk factors, encourages effective communication with the clinicians (Rosenberg et al., 2014) and facilitates referrals to other services (Hannigan et al., 2018). This model entails the use of a unified treatment plan where documentation of medical information is kept in an integrated record system (Ee et al., 2020). This framework places an emphasis on individuals receiving person-centred care, and it offers the possibility of health systems concomitantly and integratedly providing non-communicable diseases (NCDs) and common mental health services (Patel & Chatterji, 2015).

Evidence, including randomised controlled studies of collaborative care shows that integrated care for mental disorders can enhance outcomes in patients with cardiovascular disease, diabetes, and other health conditions (O'Neil et al., 2015). Similarly, for the treatment of depression, anxiety disorders and severe mental illnesses, such as schizophrenia and bipolar disorders, collaborative care models are found to be more effective than conventional care models (Reilly et al., 2013; Simon, 2009; Unützer et al., 2002). A recent study in the United States where collaborative care was utilised at a primary health centre, between October 2018 and December 2020, to deliver health care and address the social determinants of health among residents belonging to a vulnerable community at Humboldt Park, Chicago, shows promising results (Reising et al., 2022). In this model, a licensed clinical social worker assists with care coordination by referring patients to services that address their financial, social, emotional and physical health needs. This entails referring patients to housing and food resources, linking them with charities, providing them with information around employment opportunities, recreational activities happening in the community, and community resources around intimate partner violence etc. Results of this study show that patients who engaged in the Collaborative Care model had improved depression and anxiety scores with 23% and 36% of the patients showing at least 50% reduction in their PHQ-9 and GAD-7 scores, respectively. The authors acknowledge the impact of shifting the modality of care to telehealth, as of March 2020, as factor that may have compromised the results (Reising et al., 2022).

In general, the majority of research evidence on collaborative care has been gathered from clinical settings in high income countries. Studies are required in low- and middle-income regions, to evaluate the contextual adaptability of such a model of care, along with the trainings required, and its cost effectiveness (Stein et al., 2019). It is worth mentioning that UNRWA already have an integrated mental health service within its primary care and social workers work with patients to identify resources within UNRWA that they could access. However, currently social workers are restricted to the latter tasks and their role could be enhanced. Examples of this include, social workers having an enhanced role in treatment and expanding their referrals to utilise resources within the community.

7.4. COVID-19 highlighting the interplay between social determinants, NCDs and mental health and halting the progress towards the SDGs

Particularly on impoverished and vulnerable people, health emergencies and epidemics have devastating economic impacts (WHO Commission on the Social Determinants of Health in the Eastern Mediterranean Region, 2021). Pandemics are usually followed by prolonged, multi-decade-long periods of reduced investment prospects, presumably as a result of an excess of scarcity of surviving labour force, and/or heightened impulses to save, possibly as a result of an increase in precautionary saving or a rebuilding of lost wealth (Al Mezan Centre for Human Rights, 2020; Jordà et al., 2020; Malmendier & Nagel, 2011). Furceri et al show that pandemics can alter inequity by negatively affecting the job prospects of certain groups of workers, notably those with low levels of education. Researchers found that those with a bachelor's degree or higher were barely impacted, while those with basic level of education had a decline of nearly 5% in their employment-to-population ratio over the same time period (Furceri et al., 2020).

There is a developing body of work on the anticipated aggregate effects of COVID-19, which draws on the history of other significant epidemics in the previous century (Barro et al., 2020; Brainerd & Siegler, 2003; Meltzer et al., 1999). Evidence from across the globe demonstrates glaring socioeconomic disparities in COVID-19 infection and mortality rates, which are a reflection of pre-existing social, economic, and geographic disparities. Poor health, poverty, low wages, congested living and working environments, being unable to work from home, and vocations involving caregiving or engaging with the public all increase the risk of COVID-19 infection and death (Shadmi et al., 2020). During COVID-19 pandemic, workers in low-income deciles have less flexibility to work from home than those in higher deciles, according to recent research (Furceri et al., 2020). Therefore, in the absence of procedures to mitigate these impacts, the extended lockdowns connected with efforts to stop the spread of COVID-19 can have a particularly negative effect on such personnel (Furceri et al., 2020). The COVID-19 pandemic had additional effects on social determinants and mental health. Russo et al adds that the COVID-19 pandemic exerted negative shifts in NCD risk factors such as the adoption of poor dietary

habits (Mattioli et al., 2020), increased smoking (Bommelé et al., 2020; Sidor & Rzymski, 2020), declines in physical activity (Arora & Grey, 2020; Kline, 2014) and NCD treatment initiation and adherence (Alexander et al., 2020). Also, there is evidence suggesting that the modifications to social determinants of mental health have affected mental health outcomes as the pandemic was found to be associated with increases in loneliness and the levels of anxiety and depression among adults (Banerjee & Rai, 2020; Kantor & Kantor, 2020), as well as disruption in social networks (Saltzman et al., 2020). This all underscores how COVID-19, and its effect on social determinants, influences health outcomes including NCD status and mental health.

As outlined earlier in chapter 2, the pandemic's effect extends beyond income-related losses to affect health and access to health care, levels of food security, access to equitable education and other SDGs (Shulla et al., 2021). Given the magnitude of the COVID-19 pandemic and the scope of the containment measures, the social and economic impacts in the Eastern Mediterranean Region have been enormously detrimental. This will further deteriorate health and health equity, diminish development, and halt the progress toward the Sustainable Development Goals (SDGs) (WHO Commission on the Social Determinants of Health in the Eastern Mediterranean Region, 2021).

In Chapter 5, I offer a detailed description of how the pandemic affected the refugee community in Gaza. Similar to the available global evidence on the impact of the pandemic, participants perceived an increase in economic hardship, community and household violence, increased levels of anxiety among women, children and the elderly along with an obstruction to accessing health care especially for those requiring tertiary care or specialized services such as cancer patients. In Gaza, unemployment was already surging prior to the pandemic and with the enforcement of lockdown measures and the closure of the Erez crossing, unemployment surged even further. Results presented in Chapter 5 show that the participants' perception was that daily-paid workers were mostly affected by the pandemic and the resulting lockdowns. In addition to the economic effects, existing social and health inequities have been highlighted, exacerbated, and given new dimensions by the COVID-19 pandemic.

In the midst of the COVID-19 health crisis, it is often difficult to provide for the ever-changing requirements of people who are residing in fragile settings (UHC 2030, 2020), and Gaza is no exception. With only eight years left in the lifespan of SDGs, their implementation cannot be delayed (Ekwebelem et al., 2021). As my PhD findings emphasise the need to address the social determinants of health in Gaza and hence, achieve the SDGs, it is also crucial to recognise the power of joint responsibility, which includes state and non-state actors such as the international community, humanitarian organisations, and the civil society.

7.5. Pandemic preparedness: strengthening UNRWA's health response

There is a wide-ranging debate as to whom should be prioritized in order to curb the spread of COVID-19 and to reduce mortality. Globally, policies were largely tailored to protect the clinically-vulnerable against contracting the virus. A recent review article by Haldane et al. show that the majority of countries re-evaluated their testing, surveillance, and vaccination distribution priorities to target individuals at long-term care facilities and older persons, although typically only after mortality rates in these settings had risen to alarming levels (Haldane et al., 2021). Such policies must be re-evaluated in light of protecting the wellbeing and livelihood of the population at large. Positive outcomes for physical and mental health should be ensured for everybody to include marginalised populations. In many nations, COVID-19 death rates have been disproportionately higher, not just among older populations or those identified as vulnerable based on medical grounds, but also among minority ethnic groups, socioeconomically-disadvantaged communities, and low-wage and migrant workers highlighting the interdependence between health equity and health outcomes (Shadmi et al., 2020). "High-performing countries", according to Haldane et al., are those who manage to preserve the capacity of their health systems while also safeguarding public health and livelihoods. This is achieved by activating wide-ranging responses across all of the domains of the social determinants, including whole-of-government approaches by creating multi-ministry task forces. For instance, such countries made efforts to lessen their citizens' exposure to risk by distributing financial aid and bolstering social services. These efforts were intended to

go hand-in-hand with proactive and stringent testing as well as contact tracing (Haldane et al., 2021). In several countries, lockdown was complemented by support measures such as, relief packages that assist companies in maintaining their financial viability and safeguard jobs, or provide food parcels and monetary assistance to low-income families and the unemployed (KPMG, 2020; Taylor Wessing, 2020; Tilleke and Gibbins, 2020; UK Government, 2022). Such regulations encourage people to properly comply to public health recommendations with the goal of preventing infections. This, in turn, helps to alleviate the load that is placed on health systems as a result of the requirement to provide high-intensity COVID-19 care (Haldane et al., 2021).

In Gaza, the Palestinian authority imposed early lockdown in the Strip which helped in delaying the transmission of the virus (Ghanem A., 2020). Eventually, virus transmission was inevitable and lockdown measures, in addition to social and physical isolation, were unattainable. In fact, lockdown measures added another layer of vulnerability to the humanitarian situation already present in the Strip as poverty, food insecurity (Food Security Cluster- Palestine, 2021) and unemployment grew, education was disrupted and violence ensued (AlKhaldi et al., 2021). This is not surprising knowing that the response strategies to address the socioeconomic consequences of the pandemic were modest compared to people's needs. For instance, the Palestinian Monetary Authority (PMA) asked banks to delay personal and corporate loan payments for 4 months and issued a one-time financial aid from the government for approximately 40,000 labourers affected by the pandemic in hard-hit industries (construction, tourism, services, and transportation) and 125,000 vulnerable households (OECD, 2020). The services that UNRWA provides under its health, relief and social services and education programmes address many factors under the domains of the social determinants of mental health such as education, housing and infrastructure, food security, gender-based violence etc. and this makes UNRWA a unique organisation. However, UNRWA's capacity to deliver services is constrained by its limited financial capacity since 2018 (Ager et al., 2018), which makes it difficult for UNRWA to meet the increased demands of the population during the pandemic. Moreover, UNRWA relied on pre-pandemic vulnerability assessment to determine the eligibility for relief services. Findings from this research suggests that the needs of people

who became socioeconomically vulnerable during the pandemic were not met by UNRWA's relief response. Consequently, UNRWA is urged to conduct vulnerability assessments during extended crises, such as the COVID-19 pandemic and raise emergency appeals based on updated figures.

"High-performing countries" also expand the capacity of their health systems in response to the changing epidemiological situation. This is achieved by increasing the infrastructure capacity and repurposing facilities to accommodate COVID-19-infected patients, re-allocating and recruiting additional health workers utilising the expertise of retired staff or trainees at times, providing essential services and postponing elective procedures, adopting and scaling-up digital technologies, providing financial and social staff support and capitalizing on the resources available at the private sector, whenever possible, to increase domestic production of medicines, equipment, PPEs, sanitizers etc. (Haldane et al., 2021). Findings from the current research suggests that during the pandemic, UNRWA adopted most of the aforementioned strategies. More can be done, however, in relation to bolstering staff support, especially as it was found to be integral to maintaining service delivery in study 3 (Chapter 6).

In light of the physical and psychological stress caused by the pandemic, countries took precautions to preserve, protect, and support its healthcare personnel. In addition to providing psychological help to maintain staff's wellbeing and boost their morale (New Zealand Doctor, 2021), in some countries (such as Japan, Mozambique, Singapore, and South Korea), healthcare professionals were supported by measures such as the organisation of work shifts to avoid long working hours without rest, issuing leaves of absence for recovery from physical illnesses and mental distress, and providing housing and child care near their workplaces (Haldane et al., 2021). In addition, other countries (such as, Thailand, Argentina, Ghana, Germany and Spain) reported providing some form of financial assistance to their health care workers, such as financial incentives (Zapata et al., 2020), bonuses (OECD Health Division, 2020), tax benefits (Ofori et al., 2021), classification of their COVID-19 infections as an work-related disease or injury, and designation of the cause of death as occupational (Eurogip, 2022). The pandemic has

established a precedent for the importance of the intrinsic value of health workers to functional health systems (Deussom et al., 2022). Future health emergencies can be averted by protecting health workers with the use of financial assistance, hazard pay, and licenced, safe child care (Mehta et al., 2021).

7.6. Implications for research

- Researchers can impact policy making indirectly by conducting mental health impact assessments. These assessments aim to study the impact of policies on populations' mental health thus, helping policy makers and legislators make evidence-based decisions (Shim & Compton, 2018).

- As established earlier, surveillance systems to document and update mental health data in the EMR are lacking. For this purpose, it is required to construct monitoring systems that include mental health-related data and disaggregated data to identify the levels and causes of health inequities that relate to mental health. Moreover, in a region where gender inequity is very prominent, it is necessary to evaluate the impact of gender inequity in relation to population health and pilot and evaluate programmes that aim to reduce violence against women and girls.

- Evidence in relation to collaborative care as a model that addresses the co-morbidity of NCDs and mental disorders in clinical settings is needed. This is especially of concern for countries in the EMR where the need for mental health services is high and a treatment gap exists.

- In order to allow different sectors to address the social determinants of mental health, researchers are encouraged to develop and validate an appropriate screening tool. Shim and Compton suggest developing a short, validated version incorporated into electronic health records as an effective approach to address social determinants of mental health (Shim & Compton, 2018).

7.7. Implications for policy

- The widespread effects of the COVID-19 pandemic have, in recent times, contributed to a worsening of existing disparities. The pandemic has made marginalised groups in

society more vulnerable than they were before, which is likely to result in worse gaps if concerted action is not taken to address the problem. Moving forward, policy makers are encouraged to consider universal basic income and reform labour law in order to protect people belonging to the lowest socioeconomic strata, especially those who work in essential services and in the informal sector (Paremoer et al., 2021). Diverse sectors, such educational, business and industry should be encouraged to consider and integrate health into their own policies. This can be accomplished by educating various sectors on the importance of social determinants and how they link to enhancing populations' health.

- Policy makers are encouraged to consider social prescribing as a strategy that is found to be an effective method for addressing the social determinants of mental health (Shim & Compton, 2018). In the UK, health practitioners at primary centres refer their patients to "link workers" to receive non-medical support. The link worker along with the patient develops a plan to meet the patient's needs and refers the patient to the relevant social service such as legal support to tackle issues related to poor housing, job centres and other services or support available in the community (The Health Foundation, 2022). Social prescribing encourages individuals to take responsibility for their health and well-being by promoting people's active participation in their local communities and statutory agencies for practical and emotional assistance. Being a member of a community group and receiving peer support reduces emotions of loneliness and anxiety. Therefore, social prescribing helps people to be more physically active, improves their mental health, improves their quality of life and lessens the burden of chronic diseases (Dayson & Bashir, 2014). It assists individuals in discovering a new sense of purpose by engaging in activities they may not have tried before, such as arts, cultural activities, walking, running, gardening, singing, etc (NHS England and NHS Improvement, 2020). Research evidence reveals that social prescribing is also beneficial for the health care system as it reduces a person's GP consultations by an average of 28% (Jamal et al., 2022; Polley & Pilkington, 2017). While social prescribing has shown promise in contexts such as the UK (Kimberlee, 2013; Woodall et al., 2018), more research is needed to understand its effectiveness, implementation, and sustainability in other contexts. As a result, it is critical that policy makers work with academics to investigate this field in order to fully

comprehend its potential advantages and limitations, such as or which patients and under what circumstances social prescribing works (Bickerdike et al., 2017).

- There is a need to close the gap between NCDs and MH by addressing the social determinants that link both conditions and drive health inequities. Policy makers are therefore encouraged to consider introducing Integrated Collaborative Care model as part of their commitment towards addressing NCDs and meet the global goal of reducing NCD burden by 2030 (Stein et al., 2019).

- The social mission of educational institutions is their contribution through their mission, programmes, and the performance of their alumni, professors, and leadership towards achieving health equity and addressing health inequities in the society in which they operate (Mullan, 2017). Who enters the workforce, which professions are created, and whether alumni choose high-need specialties, practice in underprivileged communities, and have the skills and bravery to advance health justice are largely determined by the education pipeline (Mullan et al., 2010). For this reason, it is incumbent upon academic institutions to design curricula for the next generation of health care workers that emphasise health equity and the social determinants of health.

- To address the expanding health, socioeconomic, and human rights concerns in the Gaza Strip, all relevant stakeholders should employ inter-sectoral methods. Policy changes in Gaza should be directed towards: (a) fostering internal and external political will and commitment, (b) creating a thorough development plan based on partnership and collaboration between different actors within the Strip, and (c) ensuring that the international community adopt more active and sustained roles to put an end to the Israeli blockade of the Gaza Strip and support the implementation of the developmental projects (AlKhaldi et al., 2021; PCHR, 2021).

7.8. Implications for practice

- Evaluate opportunities for the health system and workforce to take action on the social determinants of health. For example, by incorporating short validated screening tools around social determinants of mental health into electronic health records, expanding the treatment team to include social workers that can assess and refer patients to local

resources to address their social, physical, emotional and economic needs, and creating medical-legal partnerships where a lawyer is embedded in a mental health setting or a clinical environment.

- During the COVID-19 pandemic, more people became socially and economically vulnerable. UNRWA's need to perform an ongoing vulnerability assessment during a crisis, such as the COVID-19 pandemic, is essential so that service delivery is targeted to everyone in need.

7.9. Methodological implications

From a methodological standpoint, this thesis underscores four main significant points. First, the significance of gatekeepers in obtaining entry to a besieged area such as Gaza. The assistance of gatekeepers (in this case an UNRWA staff member) facilitated the establishment of rapport with study participants (mainly with community members), the introduction of the research to them, and the mitigation of any challenges that arose. This was found to be of significant importance in a scenario where individuals may exhibit reluctance in divulging information to an individual with whom they lack physical interaction. Second, the process of obtaining self-administered survey data from a remote location was found to be challenging in an area marked by frequent power outages and limited internet connectivity. Utilising tools like Kobo that collect data offline in the field with the assistance of field surveyors may result in increased participant enrolment and decreased response drop-out rates. An alternative strategy that could prove advantageous is to engage with participants at UNRWA facilities which necessarily have access to electricity and internet services. Third, it was demonstrated to be of significant importance to enlist a researcher who possesses a shared background with the study participants, is fluent in their language, and is capable of establishing a rapport with them. Finally, the participatory approach employed in data collection facilitated the expression of the studied population's experiences and perspectives, thereby empowering them to proactively devise solutions to their predicament.

7.10.　　　Overarching reflections

The main research question of the entire thesis revolves around the social determinants of mental health and how they affect population health. Three separate studies addressed this question from a different perspective. The systematic review, chapter 4, facilitated the identification of the association between social determinants, such as ethnicity and level of education, and the heightened susceptibility to non-communicable diseases in adults with prevalent mental disorders. This study contributed to the existing global body of evidence regarding the factors that are directly linked to the onset of non-communicable diseases (NCDs). As a result, policymakers and practitioners can utilise the findings to customise interventions that target these specific factors, with the aim of interrupting the cycle between mental health disorders and other NCDs.

Chapter 5 focused on the social determinants in the context of the pandemic and Gaza. It demonstrated that the pandemic and its associated public health measures had a noteworthy impact on the daily life of Gazans, as various layers of vulnerabilities coincided. The response of the community during the COVID-19 pandemic was distinct from their reaction to any previous threat encountered. The challenges faced by the Palestinian population have been exacerbated amidst the COVID-19 pandemic, necessitating measures beyond those of social cohesion to surmount this difficult period. The aforementioned stressors, namely financial strain, food insecurity, and gender-based violence, underscore the significance of broadening the scope of public health response beyond the realm of clinical disease prevention. This entails incorporating social and economic interventions that have the potential to augment individuals' mental well-being and mitigate their vulnerability to future adversities. The social determinants of mental health disorders render it imperative to address them alongside improving access to mental health services, as the latter alone may not effectively alleviate the global burden of these disorders.

Following the identification of social determinants linking mental health to the onset of NCDs in chapter 4, and an examination of how the pandemic impacted social determinants and potentially influenced health outcomes in chapter 5, chapter 6 investigated the degree

to which UNRWA's three primary programmes addressed the social determinants of mental health in Gaza. As per chapter 5, the study sought to investigate both clinical and non-clinical mechanisms for securing mental health, including through MHPSS interventions, deployed during the COVID-19 pandemic by reaching out to vulnerable groups. The UNRWA MHPSS Framework accurately portrayed UNRWA's pandemic response. An additional finding was the relationship between staff well-being, community relationships, and capacity to meet community needs which supported human resource capacity, and consequently maintained service delivery and access to care.

Taken altogether, the principal finding of the three studies indicated that prioritising the social determinants of mental health is crucial for enhancing public health outcomes through the implementation of a preventative health promotion strategy. Through this approach, it becomes possible to address the systemic determinants of health that are often overlooked, which can contribute to the development of disease and social inequality (Salas Quijada et al., 2023). The social determinants of mental health fall under the purview of various sectors beyond the health system and are influenced by the global, national, and local distribution of resources, power, and wealth (WHO Commission on the Social Determinants of Health, 2008) and the attainment of favourable health outcomes cannot be solely attributed to the health system (Maurice AT & Houeto DS, 2021). As Maurice and Houeto mentioned in 2021, enhancing the health status necessitates a collaborative effort among various sectors to attain improved health outcomes (Maurice AT & Houeto DS, 2021).

In agreement with Giacaman, the notion of balancing any future reform of the health sector in a conflict-affected context should be both realistic and achievable if relief, emergency, rehabilitation, and reconstruction endeavours govern policymaking (Giacaman et al., 2003). Particularly for Palestinians, the findings of this thesis indicated that UNRWA's ability to effectively manage the pandemic and address the refugees' needs in Gaza during the health crisis was constrained by its limited budget and the accumulating precarious social and political conditions of the Strip. More than ever, this pandemic demonstrated the need for a reform in the health sector in Gaza where the

Palestinian Ministry of Health (PMoH), UNRWA and other health stakeholders work together to improve health service delivery and adopt a strategy that prioritises long-term growth, durability, and readiness of the health system, rather than each working exclusively and relying on short-term, emergency measures whenever a crisis emerges.

This thesis supports Giacaman in a way that social and political determinants should be distinguished from each other and addressed concurrently for any sustainable and meaningful change to happen (Giacaman, 2018). Given that the health system in Palestine is expected to improve amidst a state of military occupation, it is imperative to call for a change in the political situation of Gaza. Indeed, there is a necessity for interventions that bolster healthcare systems in Gaza by addressing the impact of the blockade on healthcare. The continuation of the blockade will lead to the degradation of both the health of the inhabitants of Gaza and the deterioration of the infrastructure supporting the Strip (Smith, 2015). As mentioned in Chapter 2, the consequences of the siege do not only result in an increase in the prevalence of illnesses, but also inflict a profound emotional or "internal" wound on the affected population. Numerous health scholars (Becker et al., 2009; Giacaman et al., 2003; Giacaman et al., 2009) who researched the Palestinian health system noted that the presence of siege and occupation will continue to result in a crisis in the healthcare sector, despite the provision of international aid. According to Giacaman et al., international aid comes with its drawbacks; one of which is creating a dependency on resources it provides (Giacaman et al., 2009). As with other instances of conflict characterised by practises of underdevelopment and deprivation, it is imperative that Palestinians take charge of determining both the broader level resolutions affecting them and those that pertain specifically to healthcare provision. External parties should not be the ones to make these determinations for them (Cliffe & Luckham, 2000). In 2015, interviewed Palestinian healthcare providers suggested two key measures to improve the health of their respective population: firstly, the cessation of discriminatory practises that classify Palestinians as non-citizens and consequently exclude them from the Israeli state medical system; and secondly, the establishment of a legitimate, self-governing state with strong governmental institutions (Smith, 2015).

As mentioned in chapter 2, the PMoH is the primary healthcare provider in the occupied Palestinian territories (oPt), with UNRWA serving as a secondary provider for the healthcare needs of Palestinian refugees who were displaced during the 1948 and 1967 wars, both of which operate with a limited capacity. Additionally, several non-governmental organisations also offer healthcare services in the region (Giacaman et al., 2003; Hammoudeh et al., 2020). However, according to the Geneva Conventions, Israel, in its capacity as the occupying power, bears the responsibility of ensuring the health of the population, or at the very least, enabling access to healthcare services. The COVID-19 pandemic in the occupied Palestinian territories (oPt) raised an opportunity to further focus on accountability and access to healthcare. According to Hammoudeh et al., the international community, as well as the occupying power, have consistently neglected to acknowledge their responsibility for the injustices and lack of freedom experienced by the Palestinian people (Hammoudeh et al., 2020).

The trend with external funders is to prioritise aid allocation towards marginalised populations and short-term relief efforts, as opposed to investing in sustainable, systemic development; a trend that needs to be rectified. According to Smith, it is imperative for the global community to adopt a more proactive approach towards resolving the healthcare predicament in Gaza. The proposed measures involve exerting pressure on Israel to terminate the siege and facilitate unrestricted movement of individuals and commodities, alongside endorsing Palestinian endeavours that strive to establish a durable healthcare infrastructure. The proposed solution aims to mitigate the vulnerability of healthcare provision in Gaza, which is on the verge of collapse due to the captive nature of its population who rely solely on Israel, international organisations, and aid agencies for access to necessary goods and services, including health services (Hammoudeh et al., 2020; Smith, 2015).

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Appendices

Appendix 1: Prospero protocol

1. **Review title**: A systematic review studying the effect of mental health determinants on the incidence of main NCDs among adults with common mental health disorders.

2. **Original language title**: as above

3. **Anticipated start date**: August 1, 2019

4. **Anticipated End date**: February 28, 2020

5. **Stage of the review at time of submission:** Preliminary searches ticked as completed, pilot of the study selection process ticked as started.

6. **Named contact**: Mrs. Zeina Jamal

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10. **Organizational affiliation of the review:** Queen Margaret University

11. **Review team members and their organizational affiliations:**

    Zeina Jamal, PhD candidate, Institute for Global Health and Development, Queen Margaret University, Edinburgh

Alastair Ager (PhD supervisor 1), Institute for Global Health and Development, Queen Margaret University, Edinburgh

Rebecca Horn (PhD supervisor 2), Institute for Global Health and Development, Queen Margaret University, Edinburgh

12. **Funding sources/sponsor**: This work is part of Zeina Jamal's (the lead reviewer) PhD work which is funded by NIHR grant.

13. **Conflict of interest:** none

14. **Collaborators:** AN and MR

15. **Review question(s)**:

    a. Primary question: What are the individual, social and environmental mental distress determinants that lead to the development of NCDs (cardiovascular diseases, cancers, respiratory diseases and diabetes) among patients with common mental health disorders (depression and anxiety disorders including PTSD)?

    b. Secondary question: What are the tools used to assess the different individual, social and environmental factors relating NCDs to mental health among adults with common mental health disorders?

16. **Searches**:

    a. Databases: MEDLINE, PsychINFO, CINAHL and EMBASE.

    b. Reference lists of included studies and identified articles.

17. The search strategy for our systematic review was developed and validated with the advice and expertise of the Librarian specialist at Queen Margaret University. We searched each database by combining four different concepts related to non-communicable diseases along with 3 different concepts of mental health disorders,

namely: "cardiovascular diseases", "diabetes", "cancers", "chronic obstructive pulmonary disease" with "anxiety", "depression", "post-traumatic stress disorder". The search encompassed the combination of various terms for each concept and included both free text-words and MeSH (Medical Subject Headings) terms, besides different search options corresponding to each resource. Our searches were restricted to English. There were no geographical restrictions and no time frame limits. Studies to be considered are on adults ($\geq$ 18 years old) only.

18. **Types of research studies:** Only Cohort studies and Case-Control studies were included. Other quantitative types of studies such as Cross-sectional and Experimental design studies were excluded. Qualitative studies, Editorials, Commentaries, Grey Literature, reviews and meta-analysis were also excluded.

19. **Condition or domain being studied:** The effect of mental health determinants (individual, social and environmental determinants) on the incidence of main NCDs among adults, aged 18 and above, with common mental health disorders. Regarding NCD status, papers will be accepted if participants having any of the common mental health problems (depression, anxiety and/or PTSD) develop any of the NCD conditions (cancer, diabetes, chronic pulmonary disease or cardiovascular diseases) based on either self-report, clinical or biochemical assessments. Studies involving participants with comorbid physical or mental disorders will be excluded. Studies reporting on the incidence of NCDs without reporting the exposure (individual, social and/or environmental determinants) leading to the development of NCDs will also be excluded.

20. **Participants/population:** Studies conducted at the population or facility level among adults $\geq$18years will be included. Participants need to have a common mental health disorder. Identification of patients with common mental health disorders (CMDs) will be either via an established clinician-administered instrument (e.g. SCID, CIDI), clinical records, and/or using a validated self-report instrument (e.g. PHQ-9, GAD-7, HADS).

21. **Exposure**: studies have to be assessing the effect of individual, environmental and/or social factors on participants' health and the incidence of NCDs. The following are examples for each factor of interest.

   a. Individual factors: malnutrition, physical inactivity, drug abuse, harmful use of alcohol, low self-esteem, chronic medical/physical illness and criminal/anti-social behaviour.

   b. Social circumstances: loneliness, bereavement, family conflict/neglect, exposure to violence/abuse, low income/ debt/ poverty, unemployment and work stress.

   c. Environmental factors: poor civic amenities, injustice, discrimination/ social inequalities, gender inequalities, exposure to war or disaster.

22. **Study Selection and Data Extraction.**

   a. Screening process:

      i. Title and abstract screening: The main reviewer will screen titles and abstracts of identified articles. For quality check, another reviewer will screen independently 10% of identified articles according to the set eligibility criteria. The full text for citations will be checked if it is judged as potentially eligible by at least one of the two reviewers.

      ii. Full-text screening: Same strategy will be implemented at this stage. In case of disagreement, the reviewers will resolve it by discussion or with the help of the PhD supervisors. Agreement between the two reviewers for full text screening will be assessed by calculating the kappa statistic.

   b. Data Extraction

i. Data abstraction process: The main reviewer will abstract the data from eligible studies. Another reviewer will be abstracting data for 10% of eligible studies independently. They will resolve disagreement by discussion or with the help of any of the PhD supervisors. The team will use a data abstraction form for the purpose of data collection. The form will assist in collecting information on study design, research aim, participants, setting, mental health condition(s), mental health determinants studies, incidence of NCDs and other relevant findings.

23. **Quality assessment**: The Critical Appraisal Skills Programme (CASP) checklist will be used to assess the quality of the studies. The main reviewer, supervised by at least one senior researcher, will assess the risk of bias in each study.

24. **Data analysis**: Data sheets will be analyzed. Descriptive statistics will be conducted to determine the distribution of the included studies by exposure and outcomes based on the type of mental health disorder. Also, the effect size of different exposures for the development of NCDs will also be recorded and analyzed. Meta-analysis will be conducted if the data is homogeneous. But if heterogeneous in terms of methods/analysis, definition of outcome variable, type of exposure, way of assessing exposure, population setting and the findings, then it would be narratively summarized. The following summary measures would be included: Odds ratios (OR) and Relative Risks (RR) their 95% CI.

Appendix 2: Medline search strategy

# ▲	Searches	Results
1	TI, AB cardiovascular disease* OR CVD OR heart disease* OR vascular disease* OR cerebrovascular diseases	415,338
2	(MM "Cardiovascular Diseases") OR (MM "Pathological Conditions, Signs and Symptoms") OR (MM "Disorders of Environmental Origin") OR (MH "Endocrine System Diseases+") OR (MH "Nutritional and Metabolic Diseases+") OR (MH "Vascular Diseases+") OR (MH "Heart Diseases+")	3,753,932
3	TI, AB type 2 diabetes OR type ii diabetes or noninsulin dependent or non insulin dependent OR non-insulin dependent OR NIDDM OR adult onset diabetes OR maturity onset OR diabetes mellitus	415,051
4	(MM "Diabetes Mellitus, Type 2") OR (MM "Diabetes Complications/DI/ET/PX/EP/CO")	102,692
5	TI, AB neoplas* OR cancer* OR carcinoma* OR tumor* OR tumour* OR malignan* OR leukaemia OR leukemia OR lymphoma	3,805,137
6	(MM "Neoplasms/PX/ET/EP/CO/DI") OR (MM "Carcinogenesis")	77,036
7	TI, AB COPD OR chronic obstructive pulmonary disease OR lung disease OR pulmonary disease	238,793
8	(MM "Pulmonary Disease, Chronic Obstructive/CO/DI/EP/ET/PX")	10,078
9	(MM "Non-communicable Diseases/PX/EP") OR (MM "Communicable Diseases, Emerging/DI/EP/PX/ET/CO")	2133
10	TI, AB stress disorder OR PTSD OR Post-traumatic OR Posttraumatic OR psychological distress OR emotional distress	96,438
11	(MM "Stress Disorders, Post-Traumatic/CO/DI/EP/ET/PX")	16,533
12	TI, AB anxiety OR phobi* OR panic OR anxio*	60,099
13	(MM "Anxiety Disorders+/DI/CO")	10,301
14	(TI depress*) OR (AB depress*)	429,598
15	(MM "Depressive Disorder/CO/EP/PX")	15,364
16	(MM "Mental Health")	20,351
17	TI ("follow up" OR "follow-up") OR AB ("follow-up" OR "follow up")	895,827
18	TI longitudinal OR AB longitudinal	224,732
19	S1 OR S2 OR S3 OR S4 OR S5 OR S6 OR S7 OR S8 OR S9	7,384,756
20	S10 OR S11 OR S12 OR S13 OR S14 OR S15 OR S16	569,216
21	S19 AND S20 (publication type: observational study)	886
22	S19 AND S20 (no limiters applied)	100,223
23	S22 AND S18	3,439
24	S22 AND S17	9,104
25	S23 OR S24 OR S21	**9,153 (full text)**

Appendix 3: Data extraction sheet

duration of Cohort	Study design	# of Cohort/Case-Control popl'n	Gender (%F)	Age group	Type of MH assessed	MH measurement (validated tool/ self-report)	Determinants assessed	Method for assessing determinants	Type of incident NCD	NCD Outcome (biochemical assessment/	duration of Cohort	Study design	# of Cohort/Case-Control popl'n	Gender (%F)	Age group	Type of MH assessed	MH measurement (validated tool/ self-report)

Appendix 4: Online Survey Tool

Key	Value
q_info_unrwa_s taff	Are you an UNRWA health and social care worker? 0 = Yes 1 = No
q_info_age	What is your age?
q_info_plac e_w ork	What is your place of work? 0 = Gaza: Rafah 1 = Gaza: Jabalia 2 = Leb: Ein El-Helweh 3 = Leb: Burj AlBarajneh 4 = Other
q_info_plac e_re sidence	What is your place of residence? 0 = Gaza 1 = Lebanon 2 = Other

q_info_resid enc e_gaza	If you answered Gaza, please specify if you live in: 0 = Gaza: Rafah 1 = Gaza: Jabalia 2 = Other
q_info_resid enc e_lb	If you answered Lebanon, please specify if you live in: 0 = Ein El-Helweh 1 = Burj AlBarajneh 2 = Others
q_info_pales tine	Are you a Palestinian refugee? 0 = Yes 1 = No
q_demogra phic _nationality _hcp	What is your nationality? 0 = Lebanese 1 = Syrian 2 = Palestine 3 = Other
q_demogra phic _nationality	What is your nationality? 0 = Lebanese 1 = Syrian 2 = Palestine 3 = Other
q_demogra phic _gender	What gender do you identify with or as? 0 = Male 1 = Female 2 = Prefer not to say

q_demographic_marital_status	What best describes your marital status? 0 = Single 1 = Married/Living as married 2 = Separated/Divorced 3 = Widowed	
q_demographic_occupation	What is your main occupation? 0 = UNRWA Health or social care worker 1 = Technicians/clerks 2 = Professionals/managers 3 = Service and sale workers 4 = Crafts and tradespeople/skilled agricultural workers 5 = Machine operators and assemblers 6 = Elementary occupations 7 = Unemployed 8 = Housewife 9 = Self employed 10 = Other	
q_demographic_occupation_ot her	If you answer 'other', please specify what is your occupation.	
q_demographic_cov_servic	Are you currently involved in providing services for persons affected by COVID-19? 0 = Yes: health or social services 1 = Yes: other 2 = No	

e	
q_demographic _unrwa_wor k	How many years you have been working with UNRWA?
q_demographic _room_num bers	What is the number of rooms in the household you live in (excluding the kitchen and bathroom)?
q_demographic _residents_n um ber	What is the number of permanent residents in the household you live in (including yourself)?
q_demographic _hh_positio n	Are you the head of the household? 0 = Yes 1 = No
q_demographic _pregnancy	Are you, or is anyone you live with, currently pregnant? 0 = Yes 1 = No

q_demographic_caring_resp	Do you have caring responsibilities for any of the following people who live with you? Tick all that apply. 0 = Children below 1 years old 1 = Person suffering from a chronic condition 2 = Elder person/s 3 = Other

q_demo graphic _educati on	What is the highest level of education you have achieved? 0 = No formal education 1 = Primary school 2 = Secondary school 3 = Technical Diploma 4 = University Degree 5 = I prefer not to answer
q_demo graphic _employ ment_p rev_statu s	Were you in employment or education prior to the COVID-19 pandemic? Note: both of these can be formal or informal. 0 = Yes 1 = No
q_demo graphic _cov_co nseque nces	As a result of COVID-19, either due to poor health or other challenges within the period of the pandemic, have you: 0 = Had to move accommodation 1 = Lost my accommodation 2 = Isolated at my accommodation 3 = Isolated at an isolation centre 4 = Nothing has changed

q_demographic_disability	Do you consider yourself to be a person who has a disability? 0 = Yes 1 = No 2 = Not sure 3 = Prefer not to answer
q_demographic_pre_existing_disease	Do you have any diagnosed pre-existing health conditions? 0 = Yes 1 = No 2 = Not sure 3 = Prefer not to say
q_demographic_	Please, tick all that apply among the below: 0 = Communicable diseases (for example, malaria, tuberculosis, HIV) 1 = Chronic diseases (for example, asthma, diabetes, hypertension, cancer, heart disease) 2 = Mental health conditions (for example, epilepsy, depression) 3 = Other
q_demographic_disease_other	If you answer other, please specify:

q_demographic_disease_complications	Do you believe your illness puts you at increased risk of severe complications from COVID-19? 0 = Yes 1 = No 2 = Not sure	
q_stressors_food_enough	Which of these sentences applies the most to the food eaten by your household during the last two weeks? 0 = We had enough to eat of the kinds of food we wanted 1 = We had enough to eat but not always the kinds of food we wanted 2 = Sometimes we did not have enough to eat 3 = Often we did not have enough to eat	
q_stressors_food_runout	In the last two weeks, was there a time when you were concerned that you would run out of food for your household? 0 = Yes 1 = No	

q_stressors_food_bought	In the last two weeks, has it ever happened that the food you bought was not enough and you didn't have money to buy more? 0 = Yes 1 = No
q_stressors_food_eat_enough	Were there any foods you feel your family did not eat enough of in the last two weeks? 0 = Yes 1 = No
q_stressors_food_size	In the last two weeks, did you or any other adult in your household ever cut the size of your meal because there was not enough food? 0 = Yes 1 = No
q_stressors_food_skip_meal	In the last two weeks, did you or any other household members ever skip a meal because there was not enough food? 0 = Yes 1 = No
q_stressors_food_hungry	In the last two weeks did you or any member in your household not eat for a whole day or go to bed hungry because there was not enough food? 0 = Yes 1 = No
q_stressors_medications	In the last two weeks, was there a time when you or a family member were concerned that you would run out of medication you required? 0 = Yes 1 = No
q_stressors_medication_discontinue	In the last two weeks, was there a time when you or a family member had to discontinue taking a prescribed treatment (e.g. medications) because you ran out? 0 = Yes 1 = No

q_stressors_safe_inside	In the last two weeks, have you felt safe within your house? 0 = Yes 1 = No 2 = Not sure

q_stressors_out side_time	In the last two weeks, how much time have you spent outside your house/outdoor? 0 = Less than 1 hour 1 = Between 1-2 hours 2 = Between 2-4 hours 3 = Over 4 hours
q_stressors_em ployment_curre nt_status	Are you currently employed or in education? Note: both of these can be formal or informal. 0 = Yes 1 = No
q_wellbeing_ch eerful	Over the last two weeks, I have felt cheerful and in good spirits: 0 = All of the time 1 = Most of the time 2 = More than half of the time 3 = Less than half of the time 4 = Some of the time 5 = At no time
q_wellbeing_rel axed	Over the last two weeks, I have felt relaxed and calm: 0 = All of the time 1 = Most of the time 2 = More than half of the time 3 = Less than half of the

	time 4 = Some of the time 5 = At no time
q_wellbeing_act ive	Over the last two weeks, I have felt active and vigorous: 0 = All of the time 1 = Most of the time 2 = More than half of the time 3 = Less than half of the time 4 = Some of the time 5 = At no time

q_wellbeing_res ted	Over the last two weeks, I woke up feeling fresh and rested: 0 = All of the time 1 = Most of the time 2 = More than half of the time 3 = Less than half of the time 4 = Some of the time 5 = At no time
q_wellbeing_int erest	Over the last two weeks, my daily life has been filled with things that interest me: 0 = All of the time 1 = Most of the time 2 = More than half of the time 3 = Less than half of the time 4 = Some of the time 5 = At no time
q_wellbeing_co vid_status	Do you suspect that you have had, or currently have, COVID-19? 0 = Yes: I have tested positive 1 = I think so but I haven't been tested. 2 = No I tested negative 3 = I don't think so but I haven't been tested

	4 = Not sure
q_wellbeing_co vid_family	Do you suspect any of your family or friends have had, or currently have, COVID-19? 0 = Yes: they have tested positive 1 = Yes: they suspect they have COVID-19, but have not been tested 2 = No: they have tested negative 3 = No: they do not suspect they have COVID-19 4 = Not sure
q_social_cov_sy mpt	Suppose you or a family member showed symptoms of COVID-19. Who would you approach for assistance in this situation? Rank these options by placing them in order.
q_social_unsafe	Suppose you felt unsafe in your home. In that situation, who would help you find a safe place to stay? Rank these options by placing them in order.
q_social_loss_ec on	Suppose you suffered an economic loss, such as the loss of a job, or loss of an agricultural crop. In that situation, who do you think would assist you financially? Rank these options by placing them in order.

q_social_pharma_trust	Can pharmacists in this area be trusted at the professional level? 0 = Yes - most of them 1 = Yes - some of them 2 = Unsure 3 = No
q_social_unrwa_hcp_trust	Can UNRWA health care providers (such as doctors and nurses) in this area be trusted at the professional level? 0 = Yes - most of them 1 = Yes - some of them 2 = Unsure 3 = No
q_social_unrwa_soc_trust	Can UNRWA social and relief services staff in this area be trusted at the professional level? 0 = Yes - most of them 1 = Yes - some of them 2 = Unsure 3 = No

q_COVID-19_info_sources	Select the top three COVID-19 related information sources you most frequently consult. 0 = International organizations (e.g. World Health Organization, UNRWA) 1 = International news outlets (e.g. CNN) 2 = National organizations (e.g. the Ministry of Public Health) 3 = National news outlets 4 = Health professionals 5 = National or local leaders (including religious leaders) 6 = Friends and family 7 = Others
q_COVID-19_unrwa_com ms	Are you aware of any communications and public messages that UNRWA has issued around COVID 19? 0 = Yes 1 = No
q_COVID-19_clarity_com ms	How do you rate the clarity of the communication material?

q_COVID-19_unrwa_meas ures	Which measures have UNRWA encouraged you to take? Tick all that apply: 0 = Practicing good hygiene (e.g. handwashing) 1 = Wearing masks and/or face coverings 2 = Wearing protective equipment such as eye coverings or gloves 3 = Practicing physical distancing (e.g. being 2 or more meters apart from others) 4 = Practicing social distancing (i.e. only having contact with persons within your household) 5 = Practicing self-isolation if I have COVID-19 like symptoms 6 = None of the above 7 = Others
q_COVID-19_cov_meas_o thers	If you answer 'others', please specify.
q_ COVID-19_COVID_mea s _accept	Which of the below measures (if any) do you consider acceptable for protecting yourself from COVID-19? Tick all that apply: 0 = Practicing good hygiene (e.g. handwashing) 1 = Wearing masks and/or face coverings 2 = Wearing protective equipment such as eye coverings or gloves 3 = Practicing physical distancing (e.g. being 2 or more meters apart from others) 4 = Practicing social distancing (i.e. only having contact with persons within your household) 5 = Practicing self-isolation if I have COVID-19 like symptoms 6 = None of the above

	7 = Others
q_COVID-19_cov_meas_acc_others	If you answer 'others', please specify:
q_COVID-19_COVID_measures_practiced	Which of the below measures (if any) have you and your family practiced to protect yourself from COVID-19? Tick all that apply. 0 = Practicing good hygiene (e.g. handwashing) 1 = Wearing masks and/or face coverings 2 = Wearing protective equipment such as eye coverings or gloves 3 = Practicing physical distancing (i.e. being 2 or more meters apart from others) 4 = Practicing social distancing (i.e. only having contact with persons within your household) 5 = Practicing self-isolation if I have COVID-19 like symptoms 6 = None of the above 7 = Others

q_COVID-19_cop_meas_pract_others	If you answer 'others', please specify:
q_COVID-19_unrwa_response	Are you confident that UNRWA could respond to a COVID-19 outbreak?
q_COVID-19_unrwa_competence	During the period of COVID-19 pandemic, think about your contact with the healthcare system. How do you rate your level of satisfaction with the competence of providers?
q_COVID-19_unrwa_qualification	During the period of COVID-19 pandemic, think about your contact with the healthcare system. How do you rate your level of satisfaction with the qualifications of providers?

q_COVID-19_unrwa_elderly	During the period of COVID-19 pandemic, think about your contact with the healthcare system. How do you rate your level of satisfaction with the services provided for the elderly?
q_COVID-19_unrwa_politeness	During the period of COVID-19 pandemic, think about your contact with the healthcare system. How do you rate your level of satisfaction with the politeness of providers?
q_COVID-19_unrwa_comm	During the period of COVID-19 pandemic, think about your contact with the healthcare system. How do you rate your level of satisfaction with the clarity and honesty of communication with providers?
q_COVID-19_unrwa_confidentiality	During the period of COVID-19 pandemic, think about your contact with the healthcare system. How do you rate your level of satisfaction with the confidentiality of issues you shared with providers?
q_COVID-19_unrwa_listening	During the period of COVID-19 pandemic, think about your contact with the healthcare system. How do you rate your level of satisfaction with UNRWA staff actively listening to your health problems?
q_COVID-19_unrwa_time	During the period of COVID-19 pandemic, think about your contact with the healthcare system. How do you rate your level of satisfaction with the amount of time your health provider spent with you?
q_COVID-19_unrwa_competence_rss	During the period of COVID-19 pandemic, think about your contact with the Relief and Social Services providers at UNRWA. How do you rate your level of satisfaction with the competence of providers?

q_COVID-19_unrwa_qualification_rss	During the period of COVID-19 pandemic, think about your contact with the Relief and Social Services providers at UNRWA. How do you rate your level of satisfaction with the qualifications of providers?
q_COVID-19_unrwa_disability_rss	During the period of COVID-19 pandemic, think about your contact with the Relief and Social Services providers at UNRWA. How do you rate your level of satisfaction with the services provided for disabled persons?
q_COVID-19_unrwa_elderly_rss	During the period of COVID-19 pandemic, think about your contact with the Relief and Social Services providers at UNRWA. How do you rate your level of satisfaction with the services provided for the elderly?
q_COVID-19_unrwa_politeness_rss	During the period of COVID-19 pandemic, think about your contact with the Relief and Social Services providers at UNRWA. How do you rate your level of satisfaction with the politeness of providers?
q_COVID-19_unrwa_comm_rss	During the period of COVID-19 pandemic, think about your contact with the Relief and Social Services providers at UNRWA. How do you rate your level of satisfaction with the clarity and honesty of communication with providers?

q_COVID-19_unrwa_confidentiality_rss	During the period of COVID-19 pandemic, think about your contact with the Relief and Social Services providers at UNRWA. How do you rate your level of satisfaction with the confidentiality of issues you shared with providers?
q_COVID-19_unrwa_listening_rss	During the period of COVID-19 pandemic, think about your contact with the Relief and Social Services providers at UNRWA. How do you rate your level of satisfaction with UNRWA staff actively listening to your problems?
q_COVID-19_unrwa_time_rss	During the period of COVID-19 pandemic, think about your contact with the Relief and Social Services providers at UNRWA. How do you rate your level of satisfaction with the amount of time your provider spent with you?

q_care_hc_patie nts	All Patients 0 = Utilisation has been positively impacted 1 = Utilisation has stayed the same 2 = Utilisation has been negatively impacted
q_care_hc_patie nts_pos	In comparison to pre-January 30th 2020, rate how the proportion of all the patients has changed:
q_care_hc_patie nts_neg	In comparison to pre-January 30th 2020, rate how the proportion of all the patients has changed:
q_care_hc_wom en	Women utilising reproductive and family planning services 0 = Utilisation has been positively impacted 1 = Utilisation has stayed the same 2 = Utilisation has been negatively impacted
q_care_hc_seeki ng_women_pos	In comparison to pre-January 30th 2020, rate how the proportion of women utilising reproductive and family planning services has changed:
q_care_hc_seeki ng_women_neg	In comparison to pre-January 30th 2020, rate how the proportion of women utilising reproductive and family planning services has changed:
q_care_hc_denti st	Persons utilising oral health services (including emergencies): 0 = Utilisation has been positively impacted 1 = Utilisation has stayed the same 2 = Utilisation has been negatively impacted

q_care_hc_denti st_pos	In comparison to pre-January 30th 2020, rate how the proportion of Persons utilising oral health services (including emergencies) has changed:
q_care_hc_denti st_neg	In comparison to pre-January 30th 2020, rate how the proportion of Families utilising maternal and child health services (including immunization) has changed:
q_care_hc_mch	Families utilising maternal and child health services (including immunization): 0 = Utilisation has been positively impacted 1 = Utilisation has stayed the same 2 = Utilisation has been negatively impacted
q_care_hc_mat ernal_pos	In comparison to pre-January 30th 2020, rate how the proportion of Families utilising maternal and child health services (including immunization) has changed:
q_care_hc_mat ernal_neg	In comparison to pre-January 30th 2020, rate how the proportion of Families utilising maternal and child health services (including immunization) has changed:
q_care_hc_ncd	Persons utilising non-communicable disease services (e.g. for diabetes, cardio-vascular diseases, cancer) 0 = Utilisation has been positively impacted 1 = Utilisation has stayed the same 2 = Utilisation has been negatively impacted
q_care_hc_ncd_ pos	In comparison to pre-January 30th 2020, rate how the proportion of persons utilising non-communicable disease services (e.g. for diabetes, cardiovascular diseases, cancer) has changed:
q_care_hc_ncd_ neg	In comparison to pre-January 30th 2020, rate how the proportion of persons utilising non-communicable disease services (e.g. for diabetes, cardiovascular diseases, cancer) has changed:
q_care_hcw_co ntinuity_service	Continuity of service delivery 0 = Disrupted 1 = Not disrupted

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q_care_staff_co mms	Communication between staff and managers 0 = Increased 1 = Decreased 2 = Not affected	
q_care_staff_m orale	Staff morale 0 = Increased 1 = Decreased 2 = Not affected	
q_care_staff_ab senteeism	Staff absenteeism 0 = Increased 1 = Decreased 2 = Not affected	
q_care_staff_w orkload	Staff workload 0 = Increased 1 = Decreased 2 = Not affected	
q_care_teamwo rk	Teamwork at the health facility 0 = Increased 1 = Decreased 2 = Not affected	
q_care_financial _resources	Availability of financial resources 0 = Increased 1 = Decreased 2 = Not affected	
q_care_meds_a vail	Availability of medications 0 = Increased 1 = Decreased 2 = Not affected	
q_care_devices_ equipment	Availability of medical devices and equipment 0 = Increased 1 = Decreased 2 = Not affected	
	Availability of personal protective equipment 0 = Increased 1 = Decreased 2 = Not affected	

q_care_ppe	
q_care_hc_lab	Persons utilising laboratory tests (includes all types of tests) 0 = Utilisation has been positively impacted 1 = Utilisation has stayed the same 2 = Utilisation has been negatively impacted
q_care_hc_lab_pos	In comparison to pre-January 30th 2020, rate how the proportion of Persons utilising laboratory tests (includes all types of tests) has changed:
q_care_hc_lab_neg	In comparison to pre-January 30th 2020, rate how the proportion of Persons utilising laboratory tests (includes all types of tests) has changed:
q_feedback_survey_clarity	How would you rate the clarity of the survey questions?
q_feedback_survey_questions	How would you rate the number of survey questions?
q_feedback_survey_photovoice	How would you rate the photo and voice note components of the study?
q_feedback_study_length	How would you rate the length of the study overall?
q_feedback_study_comment	Do you have any additional comments on the study?

q_feedback_app_use	How do you rate using the web-application?
q_feedback_app_design	How do you rate the design of the web application?
q_feedback_app_comment	Do you have any additional comments on the application?

Appendix 5: Key informant Topic Guides

Key informant topic guide – HQ and field office staff

Please can you briefly introduce yourself, and your current role within the organization.

Prompts: occupation, how long have they been in this role, has this changed since COVID-19

From your position, how did you perceive the emergence of COVID-19? How did you perceive UNRWA's readiness to manage a potential outbreak?

Prompts: ease of collecting and analysing information related to COVID-19 (centrally, field levels), ease of liaising with different departments within a specific UNRWA field (Gaza/Lebanon) to act promptly, the extent whereby UNRWA is able to anticipate and cope with unplanned events (e.g. escalation of number of cases within camps), the extent whereby UNRWA is able to respond in an effective and acceptable manner, the ability to mobilise or move resources at short notice, the type and level of expertise needed to respond to the situation, any particular challenges affecting system readiness in Lebanon

What steps did the organization take to respond to the COVID-19 pandemic?

Prompts:

a) what public health measures were being considered (introducing shielding measures or infection, prevention and control) and what were the debates and decisions surrounding these? What steps were taken to ensure implementation?

b) for each of the steps, how were decisions made and who was involved, what expertise did these persons bring, what was the relative timeline of steps,

c) are emergency plans in place: what types of emergencies are covered, how have they been developed and updated, by whom, who fed into that process, have they been used for COVID response, what data is used;

d) what financial and other resources does UNRWA rely on in emergencies, how are these secured, what is the role of other local authorities and NGOs in securing these

e) how is communication with communities taking place, how is communication between the different levels of UNRWA taking place,

f) what values guides the steps of this response? And in general emergency response and delivery of services?

g) is the economic crisis in Lebanon affecting your response?

What is the role of the COVID-19 coordination body?

Prompts: how was the coordination body established, why, what is its role and remit, what communication pathways and methods does it use, who does the coordination body respond to, how does the organization (or the coordination body) receive feedback from patients or community members

What policies have been developed in relation to the COVID-19 pandemic? What has informed the development of the policies?

Prompts: link to other international policies (e.g. WHO, World Bank, UN Agencies) and national policies, do policies differ by setting, what is applicability across settings, do specific policies exist for specific population groups (e.g. elderly, those with pre-existing conditions),

Given the link between severe COVID presentation and NCDs, what are your institutional priorities in relation to NCDs? Think about both current challenges and potential preparation for future outbreaks.

Prompts: How do COVID-19 policies link to policies and services on NCDs including management and prevention (from preventing and managing risk factors, to managing onset of disease, to prevention and management of complications), what kind of policies are these, what stakeholders do they involve (prompt around multi-sectoral approaches), are there implementation barriers to prevention and what opportunities exist

Given the link between COVID presentation and MH issues for individuals and families, what are your institutional priorities in relation to MHPSS? Think about both current challenges and potential preparation for future outbreaks.

Prompts: how do COVID-19 policies link to policies and services on MHPSS, including management and prevention (from preventing and managing risk factors, to managing onset of disease), what kind of policies are these, what stakeholders do they involve (prompt around multi-sectoral approaches), are there implementation barriers to

prevention and what opportunities exist (e.g. to prepare the service and the population fur future outbreaks)

For field office staff: What is your relationship with UNRWA HQ? What is your relationship with local authorities?

Prompts: what are the communication mechanisms, how frequent is communication, who is information shared with, what kind of information is shared, how is the public and community involved in communications and decisions, if additional resources are required how do you secure these, if new measures need to be introduced who would have the power to advocate for these or implement them, what influences whether or not decisions are adopted by the wider UNRWA system, how do UNRWA or local systems cater to persons with intersecting vulnerabilities (e.g. due to age, gender, disability), how are views from these latter groups considered when making public health decisions

For Gaza: What local responses are being put in place in response to COVID-19? Comment on how this matches/not wider UNRWA response.

Prompts: challenges to rollout of UNRWA response, how does the community perceive and respond to UNRWA

For Lebanon: What is the national response to COVID-19? Comment on how this matches/not wider UNRWA response.

Prompts: challenges to rollout of UNRWA response, how does the community perceive and respond to UNRWA

How has the economic crisis in Lebanon impacted upon the spread and impact of COVID-19, and the measures UNRWA has introduced to manage this?

What are the challenges of preventing and managing COVID-19 in Lebanon given the ongoing economic crisis?

Prompts: devaluation of currency and effect on resource availability, purchasing, aid, patient ability to secure medication and/or reach clinics

<u>Key informant topic guide – Health, social and relief worker topic guide</u>

Please can you briefly introduce yourself, and your current role within the organization.

Prompts: occupation, how long have they been in this role, do you feel heard in your role, what training opportunities and skills have you acquired, how inclusive is the workplace, has anything relating to your role or work changed since COVID-19

[In Lebanon: has anything in your role changed due to economic crisis]

From your position, how did you perceive the emergence of COVID-19? How did you perceive UNRWA's readiness to manage a potential outbreak?

Prompts: ease of collecting, analyzing, and/or receiving up-to-date information related to available resources and to COVID-19 from HQ and field office, ease of liaising with different departments within a specific UNRWA field (Gaza/Lebanon) to act promptly, the extent whereby UNRWA is able to anticipate and cope with unplanned events (e.g. escalation of number of cases within camps), the extent whereby UNRWA is able to respond in a contextually accepted manner;

What steps did the organization take to respond to the COVID-19 pandemic?

Prompts: guidance and guidelines, communication with providers and with communities, measures to stop transmission (e.g. infection control, WASH)

[For Lebanon]: How has the economic crisis in Lebanon impacted upon the spread and impact of COVID-19, and the measures UNRWA has introduced to manage this?

How have communities in your camp been affected by COVID-19 and/or the measures that have been introduced to address the pandemic?

Prompts: food security, housing, crowdedness, education, social and family relations, employment, violence, how do UNRWA or local systems cater to persons with intersecting vulnerabilities (e.g. due to age, gender, disability), how are views from these latter groups considered when making public health decisions

How do you feel about the current response to the COVID-19 pandemic?

Prompt: the role of UNRWA within this, trust in the measures and messages, acceptability of measures, ability and willingness to act on public health advice, are communications clear, what is the local understanding of COVID-19 and enacted response by UNRWA

Thinking about your current work, what services have been affected by the above measures?

Prompts: access to the population, interaction with them, service continuity, quality of care, priority and allocation of resources, communication and relationship with patients, effects on health outcomes

Reminder: as possible, focus on tracer conditions (MCH, NCD) and also vulnerable groups, prompt consideration of gender (e.g. do you feel the experiences of female and male NCD patients differs, why?) or other factors (e.g. what challenges exist for persons with physical and/or cognitive disabilities)

Thinking about your current work, how would you describe the availability of resources in the context of COVID-19?

Prompts: PPE, sanitation, medications, equipment, finances, monetary and food assistance for the community

[For Lebanon] What are the challenges of preventing and managing COVID-19 in Lebanon given the ongoing economic crisis?

Prompts: devaluation of currency and effect on resource availability, purchasing, aid, patient ability to secure medication and/or reach clinics

What challenges and stressors do you face in your role in the current time?

Prompts: professional life (duties, workload, support, supervision, training, relationships with colleagues, personal mental health), personal life and relationship with work, relationship with patients, recent challenges in Lebanon due to economic crisis

Thinking on the stressors that you have mentioned, how are you coping?

Prompts: alternative sources of income, food security and health, family and social networks, sources of identity (religious, Palestinian)

Key informant topic guide – Community leaders

Please can you briefly introduce yourself, and your current role within the community.

Prompts: occupation, how long have they been in this role, organizations they work with

What constitutes local leadership in this community?

Prompts: experience, education, skills that make for a leader, how is someone recognized as a leader and by which groups

What is your connection with UNRWA, if at all?

Prompts: have they worked together or collaborated/received services, perceptions of the organization and its role within the Palestine community, trust in the organization – for what, when?

In your view what does UNRWA represent for the Palestinian community?

Prompt: right of return, current support

How do you feel about the current response to the COVID-19 pandemic?

Prompt: the role of UNRWA within this, trust in the measures and messages, acceptability of measures, ability and willingness to act on public health advice, are communications clear, what is the local understanding of COVID-19 and enacted response

How are community leaders involved in the COVID-19 response?

Prompts: trust in the measures and messages, acceptability of measures, are communications clear, perceptions of overall coordination between national and UNRWA and other organizations

[In Lebanon] How do you feel about UNRWA's response to the economic crisis in Lebanon? How does this link with the organization's response on COVID?

What kind of stressors are you facing in your daily life? How have they been shaped by this pandemic? In Lebanon, how have these been shaped by the economic crisis?

Prompts: role within community and family, health (e.g. in relation to existence of any other conditions, being able to seek care), stressors in daily life (food security, education, occupation, income, housing, neighborhood and environment, social cohesion and networks), family health and wellbeing, community health and wellbeing, conflict within local communities

Thinking on the stressors that you have mentioned, how are you coping?

Prompts: alternative sources of income, food security and health, family and social networks, sources of identity (religious, Palestinian)

Appendix 6: Coding Tree

1. Demographic factors
   a. Gender
   b. Age-related stressors
2. Economic factors affecting mental health
   a. Employment status (inclu. unemployment and job insecurity)
   b. Financial strain and loss of income
   c. Food insecurity
3. Neighbourhood factors
   a. Access to recreational facilities
   b. Built environment and housing conditions
4. Environmental factors
   a. COVID-19 pandemic
   b. Violence and distress
5. Social and cultural factors
   a. Access to education
   b. Community and relationships
      i. Amongst community
      ii. With and within UNRWA
   c. culture
6. Interventions addressing social determinants
   a. Interventions addressing physical and MH
      i. NCD related
      ii. MCH related
      iii. Other vulnerable groups
   b. RSS interventions (inclu food insecurity)

The first five codes with their sub-codes were used to deductively code interviews based on the Framework of Social determinants of mental health. Code 6 was used to answer

RQ2 pertaining to UNRWA's policies and strategies to address the vulnerabilities of PRs during the pandemic.

Appendix 7: Information sheets

Study Title: Strengthening Response to Pandemics within UNRWA Mental Health: Insights through Group Model Building

Investigator: Mrs. Zeina Jamal, PhD Candidate, Institute for Global Health and Development, Queen Margaret University, UK.

❖ **Information sheet**

You are invited to participate in a research study that aims to address the ability of UNRWA to maintain the delivery of mental health services during the COVID-19 pandemic within its primary care provision in Gaza. The study aims to understand whether MHPSS services were able to continue being delivered and respond to the community's mental health needs, including those who already suffer from NCDs, during the pandemic. This will be achieved by exploring the perceptions of UNRWA HQ, Field, health and relief and social services staff of how MH services were delivered in Gaza starting from December 2019 onwards. The research will consider the enacted policies and mitigation strategies utilised to sustain the delivery of MH services within the UNRWA health programme. It will also explore opportunities that exist to strengthen MHPSS emergency preparedness in light of the lessons learned during the current pandemic.

You will be asked to participate in a 2-day group model building workshop. The purpose of these meetings is to explore the perception of UNRWA HQ, Field, health and relief and social service staff on how mental health services were delivered in Gaza during the COVID-19 pandemic.

The GMB meetings will take place over 2 days with an overall duration of 4 hours (2 hours each day). You are assured that your participation is entirely on a voluntary basis and that you have the right to withdraw your consent or discontinue participation at any time without penalty. Furthermore, your agreement to participate will not carry any personal material benefits or rewards. Yet, it is anticipated that the workshop will help formulate an understanding of challenges in access to, and delivery of, mental health services for Palestine refugees residing in Gaza during the COVID-19 pandemic and the strategies that have been adopted by UNRWA to sustain MHPSS integration within the health programme. Note that no foreseeable risks or discomforts are anticipated from your participation in this study.

If you have any questions, please contact me, Zeina Jamal, on the following email: zjamal@qmu.ac.uk ; or Whatsapp on: +447760508759. If you have any concerns about the study now or in the future you may also contact my doctoral supervisor, Professor Alastair Ager (aager@qmu.ac.uk).

<u>عنوان الدراسة</u>: تعزيز خدمات الصحة النفسية ضمن إستجابة الأونروا للأوبئة: رؤى من خلال بناء نموذج جماعي

الباحثة: أ. زينة الجمل ، طالبة دكتوراه ، معهد الصحة العالمية والتنمية ، جامعة كوين مارغريت ، المملكة المتحدة.

❖ **معلومات حول الدراسة**

أنت مدعو للمشاركة في دراسة تهدف إلى تقييم قدرة الأونروا على الحفاظ على تقديم خدمات الصحة النفسية أثناء جائحة كوفيد -19 ضمن خدمات الرعاية الأولية في غزة. تهدف الدراسة إلى فهم ما إذا كانت خدمات الصحة النفسية والدعم النفسي الاجتماعي قادرة على الإستمرار أثناء الجائحة و الاستجابة لاحتياجات الصحة النفسية للمجتمع، بما في ذلك أولئك الذين يعانون من الأمراض المزمنة غير المعدية. سيتم ذلك عن طريق البحث في تصور العاملين في مقر الأونروا الرئيسي وموظفيها الميدانيين العاملين في غزة و العاملين في قسم الصحة و قسم الإغاثة والخدمات الاجتماعية حول كيفية تقديم خدمات الصحة النفسية والدعم النفسي الاجتماعي في غزة اعتبارًا من ديسمبر 2019 فصاعدًا. سيأخذ البحث بعين الإعتبار السياسات المطبقة والاستراتيجيات المتبعة للحفاظ على تقديم خدمات الصحة النفسية ضمن برنامج الأونروا الصحي. كما سيتم بحث سبل تعزيز الإستعداد للطوارئ وتحديد الفرص و المجالات للإستمرار في تقديم خدمات الصحة النفسية والدعم النفسي الاجتماعي في ضوء الدروس المستفادة من الجائحة الحالية.

سيُطلب منك المشاركة في ورشة عمل بناء نموذج جماعي لمدة يومين (ساعتان كل يوم). ستعقد ورشة العمل على مدار يومين متتاليين وستجرى عن بعد عبر MS-Teams. سيدور النقاش خلال ورشة العمل حول تصور المشاركين (أي موظفي الأونروا العاملين في المقر الرئيسي، في ميدان غزة، و العاملين في قسم الصحة و قسم الإغاثة والخدمات الاجتماعية) كيف كانت تقدم خدمات الصحة النفسية في غزة خلال الجائحة.

إن مشاركتكم هي على أساس طوعي تماما ولديكم الحق في سحب موافقتكم أو التوقف عن المشاركة في أي وقت من دون عواقب. علاوة على ذلك، فإن موافقتكم على المشاركة لا تحمل أي فوائد مادية، شخصية أو مكافآت. ومع ذلك ، فمن المفترض أن المعلومات التي يتم جمعها خلال ورشة العمل قد تساعدك بشكل مهني في محاولة لتقوية خدمات الصحة النفسية في الأونروا، وخاصة في حال حصول أوبئة أخرى مستقبلاً.

إذا كان لديك أي أسئلة ، يرجى الاتصال بي، زينة الجمل، على البريد الإلكتروني التالي: <u>zjamal@qmu.ac.uk</u> ؛ أو Whatsapp على الرقم: 447760508759+. إذا كانت لديك أية مخاوف بشأن الدراسة الآن أو في المستقبل ، فيمكنك أيضًا الاتصال بمشرف الدكتوراه الخاص بي ، البروفسور <u>aager@qmu.ac.uk</u> Alastair Ager.

Appendix 8: Consent forms

Consent to Participate in the Group Model Building (GMB)

Study Title: Strengthening Response to Pandemics within UNRWA Mental Health:

Insights through Group Model Building

Investigator: Mrs. Zeina Jamal, PhD Candidate, Institute for Global Health and Development, Queen Margaret University, UK.

You are invited to participate in a two-day Group Model Building (GMB) workshop that aims to address the ability of UNRWA to maintain the delivery of mental health services during the COVID-19 pandemic within its primary care provision in Gaza. The study aims to understand whether MHPSS services were able to respond to the community's mental health needs, including those who already suffer from NCDs, during the pandemic.

Who can participate? 10- 12 UNRWA staff will be invited to the workshop. Participants include UNRWA HQ and Field staff involved either in the set-up of mental services across UNRWA or in charge of the emergency response to the pandemic in Gaza. Additionally, UNRWA staff providing MHPSS in Gaza will also be invited.

What does participation imply? You will be asked to participate in a two-day Group Model Building workshop (2 hours each day). The workshop will take place over two consecutive days and will be conducted remotely over MS-Teams. The discussions will explore the perceptions of UNRWA HQ, Field, health and relief and social service staff of how MH services were delivered in Gaza starting from December 2019 onwards. The research will consider the enacted policies and mitigation strategies utilised to sustain the delivery of MH services within the UNRWA health programme. It will also explore opportunities that exist to strengthen MHPSS emergency preparedness in light of the lessons learned during the current pandemic.

Will the workshop be audio-recorded? With your consent, the GMB workshop will be audio-recorded. Audio recordings of the GMB sessions will be treated confidentially and transcripts will be anonymised to ensure that no participant can be identified in any reports from the study. Audio-recordings of the workshop will only be accessed by the researchers only. All audio-recordings will be destroyed immediately on completion of the study. If you do not consent to audio-record the workshop, you can still participate in the workshop and notes will be taken alternatively.

How will information I provide be used? This Group Model Building Workshop is part of the PhD work of the researcher, Zeina Jamal. Information collected during the workshop will be published as research and used in academic presentations. Individual privacy and confidentiality of the information provided by participants will be maintained in all published and written data analysis resulting from the study.

Am I obligated to participate? If at any time you would like to stop participating, please tell us. You are assured that your decision to discontinue participation will not entail any penalties. Furthermore, your agreement to participate will not carry any personal material benefits or rewards. Yet, it is assumed that information collated during the workshop may assist you professionally in attempts to strengthen mental services, especially during future pandemics.

If you have any questions, please contact me, Zeina Jamal, on the following email: zjamal@qmu.ac.uk ; or Whatsapp on: +447760508759. If you have any concerns about the study now or in the future you may also contact my doctoral supervisor, Professor Alastair Ager (aager@qmu.ac.uk).

❖ **Declaration**

I have read the consent form for the above named study and confirm that I am willing to participate. I understand that my participation is on a voluntary basis and that I have the right to withdraw my consent or discontinue participation at any time without penalty.

Are you interested in participating in this workshop? ☐

(Participant to tick in case of agreement, and cross out in case of disagreement).

Do you agree with recording this workshop? ☐

(Participant to tick in case of agreement, and cross out in case of disagreement).

طلب موافقة للمشاركة في ورشة عمل لبناء نموذج جماعي (GMB)

<u>عنوان الدراسة</u>: تعزيز خدمات الصحة النفسية ضمن إستجابة الأونروا للأوبئة: رؤى من خلال بناء نموذج جماعي

الباحثة: أ. زينة الجمل ، طالبة دكتوراه ، معهد الصحة العالمية والتنمية ، جامعة كوين مارغريت ، المملكة المتحدة.

أنت مدعو للمشاركة في ورشة عمل لبناء نموذج جماعي (GMB) لمدة يومين تهدف إلى تقييم قدرة الأونروا على الحفاظ على تقديم خدمات الصحة النفسية أثناء جائحة كوفيد -19 ضمن خدمات الرعاية الأولية في غزة. تهدف الدراسة إلى فهم ما إذا كانت خدمات الصحة النفسية والدعم النفسي الاجتماعي قادرة على الإستمرار أثناء الجائحة و الاستجابة لاحتياجات الصحة النفسية للمجتمع، بما في ذلك أولئك الذين يعانون من الأمراض المزمنة غير المعدية.

من يمكنه المشاركة؟ سيتم دعوة 10-12 من موظفي الأونروا لحضور ورشة العمل. يشمل المشاركون العاملين في مقر الأونروا الرئيسي وموظفيها الميدانيين العاملين في غزة المشاركين إما في إنشاء خدمات الصحة النفسية في الأونروا أو المسؤولين عن الاستجابة الطارئة للوباء. بالإضافة إلى ذلك ، سيتم دعوة موظفي الأونروا الذين يقدمون خدمات الصحة النفسية والدعم النفسي الاجتماعي في غزة.

ماذا تعني المشاركة؟ سيُطلب منك المشاركة في ورشة عمل بناء نموذج جماعي لمدة يومين (ساعتان كل يوم). ستعقد ورشة العمل على مدار يومين متتاليين وستجرى عن بعد عبر MS-Teams. سيدور النقاش خلال ورشة العمل حول تصور المشاركين (أي موظفي الأونروا العاملين في المقر الرئيسي، في ميدان غزة، و العاملين في قسم الصحة و قسم الإغاثة والخدمات الاجتماعية) كيف كانت تقدم خدمات الصحة النفسية في غزة اعتبارًا من ديسمبر 2019 فصاعدًا. ستتم مناقشة السياسات المطبقة والاستراتيجيات المتبعة للحفاظ على تقديم خدمات الصحة النفسية ضمن برنامج الأونروا الصحي. كما سيتم بحث سبل تعزيز الإستعداد للطوارئ وتحديد الفرص و المجالات للإستمرار في تقديم خدمات الصحة النفسية والدعم النفسي الاجتماعي في ضوء الدروس المستفادة من الجائحة الحالية.

هل سيتم تسجيل الورشة صوتيا؟ بموافقتك ، سيتم تسجيل ورشة العمل GMB صوتيًا. سيتم التعامل مع التسجيلات الصوتية لجلسات GMB بسرية تامة وسيتم إخفاء هوية المشاركين و ضمان عدم التعرف على أي من المشاركين في أي منشور علمي أو تقرير حول الدراسة. لن يتم الإطلاع على التسجيلات الصوتية لورشة العمل إلا من قبل فريق

البحث فقط. سيتم إتلاف جميع التسجيلات الصوتية فور الانتهاء من الدراسة. إذا كنتم لا توافقون على التسجيل الصوتي، بإمكانكم المشاركة و سوف يتم تدوين المعلومات خطيا.

كيف سيتم استخدام المعلومات التي أقدمها؟ ورشة عمل بناء النموذج الجماعي هذه هي جزء من عمل الدكتوراة للباحثة زينة الجمل. سيتم نشر المعلومات التي سيتم جمعها خلال ورشة العمل كعمل بحثي يستخدم في العروض الأكاديمية. سيتم الحفاظ على الخصوصية الفردية وسرية المعلومات المقدمة من قبل المشاركين في جميع تحليلات البيانات المنشورة والمكتوبة الناتجة عن الدراسة.

هل أنا ملزم بالمشاركة؟ إذا كنت ترغب في أي وقت في التوقف عن المشاركة ، فيرجى إخبارنا بذلك. إن مشاركتكم هي على أساس طوعي تماما ولديكم الحق في سحب موافقتكم أو التوقف عن المشاركة في أي وقت من دون عواقب. علاوة على ذلك، فإن موافقتكم على المشاركة لا تحمل أي فوائد مادية، شخصية أو مكافآت. ومع ذلك ، فمن المفترض أن المعلومات التي يتم جمعها خلال ورشة العمل قد تساعدك بشكل مهني في محاولة لتقوية خدمات الصحة النفسية في الأونروا، وخاصة في حال حصول أوبئة أخرى مستقبلاً.

إذا كان لديك أي أسئلة ، يرجى الاتصال بي، زينة الجمل، على البريد الإلكتروني التالي: zjamal@qmu.ac.uk ؛ أو Whatsapp على الرقم: 447760508759+. إذا كانت لديك أية مخاوف بشأن الدراسة الآن أو في المستقبل ، فيمكنك أيضًا الاتصال بمشرف الدكتوراه الخاص بي ، البروفسور Alastair Ager aager@qmu.ac.uk.

❖ **إقرار**

لقد قرأت نموذج الموافقة للدراسة المذكورة أعلاه وأؤكد أنني على استعداد للمشاركة. أفهم أن مشاركتي تتم على أساس طوعي وأن لدي الحق في سحب موافقتي أو التوقف عن المشاركة في أي وقت دون عواقب.

هل أنت مهتم بالمشاركة في هذه الورشة؟ ☐

(يرجى من المشارك وضع علامة √ في حال الموافقة، أو X في حال عدم الموافقة على المشاركة).

هل توافق على تسجيل هذه الورشة؟ ☐

(يرجى من المشارك وضع علامة √ في حال الموافقة، أو X في حال عدم الموافقة على التسجيل الصوتي).

Appendix 9: GMB Workshop Script

<u>Day 1</u>

Time	Activity	Activity content
14:00	Welcome and workshop overview	**Presentation (10 minutes):** ZJ will introduce the workshop's aims and will outline the activities planned for day 1 and 2.
14:10	Introductions	Participants will then introduce themselves before starting the workshop
14:20	Hopes and fears exercise	**Activity (5 minutes):** Participants are going to access a link on "jamboard" to participate in this activity (their identity remains confidential upon accessing the link). They will be given the chance to express their hopes for the sessions and any worries. **Discussion (5 minutes):** ZJ will reflect on notes and reiterates expectations around the study and around confidentiality and privacy.
14:30	Reference Modes	**Activity (45 minutes)** The focus of study would be from December 2019 (start of the pandemic) onward. 1) Clarify periods of relevance: ZJ will propose three periods: Start of the pandemic (December 2019), followed by community transmission period of COVID-19 virus in Gaza (August 2020) and the current situation in Gaza (anticipated to be October 2021). 2) Clarify variables which we wish to map out. Clarify that we are concerned about the situation in Gaza only. May include: a. Availability of MHPSS human resources b. MH service coverage c. Stigma related to COVID-19 d. MHPSS services outside the health programme e. Partnership with external MH providers f. Referrals within UNRWA/ outside UNRWA g. Funding availability for MHPSS h. Data reporting on MHPSS 3) Utilising "jamboard" again, participants will engage in drawing reference modes for each variable over time. ZJ will attempt to engage all participants in the discussions and will identify key problems to be captured later by the dynamic model.

| 15:15 | Variable elicitation and development of a seed model | **Activity (45 minutes)**

ZJ will ask participants to reflect on the trends above and identify key variables related to the performance of UNRWA's MH services during the pandemic. A list of variables of relevance to how MH services were delivered, whether MH services addressed MH needs of patients (including those with co-morbid NCD conditions) etc. will be developed. Participants will be utilising "jamboard" to participate in this activity.

The following key questions will be asked by the facilitator in order to help participants identify key variables:
1. What were the elements/ factors that acted as challenges/enablers for UNRWA to sustain MHPSS within the health programme in Gaza?

2. How did UNRWA provide MHPSS especially to vulnerable groups in Gaza (e.g. NCD patients) during the COVID-19 pandemic?

3. How did the emergency preparedness plans put in place enable UNRWA to continue access to and the delivery of MHPSS during the different stages of the pandemic (at the beginning, during and after community transmission)?

Suggestions made by participants will be included in the drawing of the model in order to visualize what is meant. ZJ will then check to see if everyone agrees with the proposed relation. If someone disagrees, ZJ will ask for clarification and will try to determine what the group thinks the relationship should be. If a discussion goes on too long, ZJ can choose to temporarily 'park' this item and continue with another part of the model. ZJ will check with the participants the polarity (positive or negative) of the relationship if possible.

At the point where a feedback chain becomes closed, ZJ will check with the entire group to see if the chain as a whole is correct. |
| 16:00 | End of Day 1 | |

In preparation for Day 2, ZJ will compile all the data retrieved through the day's activities and the discussions and will start building the model on Vensim.

Day 2

Time	Activity	Activity content
14:00	Review the outputs of day 1	**Debrief of Day 1 (20 minutes)** ZJ will present the outputs of the previous day and the variables identified. Also will share the Vensim model that's developed thus far.
14:20	Model refinement activity	**Activity (40 minutes)** After the introduction of the cleaned Vensim diagram, ZJ will ask the participants to reflect on the diagram and whether the assumptions are realistic so far. ZJ will guide the participants into refining the different sectors of the model and will be live-editing the model on Vensim. The refinement will be carried out using a set of questions that ZJ would have developed by then based on earlier discussions and the research questions of the study.
15:00	Break	
15:10	Areas of fragility and intervention	**Activity (50 minutes)** ZJ will ask the participants to consider the causal loop diagram and identify 1) which of the areas identified are 'weak' and 2) which areas are of immediate and medium term priority for intervention. Once areas are confirmed, ZJ will ask the participants to decide on what actions may be appropriate to strengthen MHPSS service delivery and how to strengthen the emergency response to maintain access to MHPSS and respond to MHPSS needs in future pandemics. At the end where the model looks complete and research questions addressed, ZJ will check with the entire group to see if they agree on the developed model and whether it looks correct as a whole.
16:00	End of Day 2	

Appendix 10: Construction of UNRWA MHPSS Framework on Vensim:

To draw the framework on Vensim, I revised UNRWA MHPSS Framework document and created the following table.

For each component of the Framework, I extracted from the text the variables pertaining to it and the links to construct.

Framework element	Variables of importance	Link to look for
Multi-layered approach	- Access to different types of service (basic vs. specialised) - Opportunities to learn and strengthen coping in those affected - Referral for services	- Referral for services should ensure access - Access to all services (basic + specialised) should ensure response to mental health needs
PAIR model	- Assessment system that assesses MH status - Interventions addressing MH needs (including prevention and promotion) - Referral for services (internally and externally)	- Assessment system for MH status is able to identify new MH cases and monitor MH status of beneficiaries - Interventions reaching PRs at the individual, family and community level to improve wellbeing - Interventions (basic such as PFA and specialised) should address a range of needs including for vulnerable groups (e.g. NCD patients, women, and children) -referral to services to ensure access
Staff safety, well-being and self-care	- Presence of enabling environment and support within UNRWA - UNRWA providing tools for basic self-care (PPEs in this case)	Enabling environment supports staff wellbeing Enabling environment secures staff physical wellbeing Staff wellbeing (physical and psychological) supports HR capacity
Capacity Development	- training of staff on different types of interventions (interventions for community and staff) - Appropriateness of training	- trainings improve staff capacity - trainings and their appropriateness influence service quality
MHPSS in emergencies	- MHPSS emergency response plans	- emergency response plan guides response to MHPSS

		needs utilising the usual MHPSS interventions (basic and specialised)
Strategic partnerships	- partnerships established with external organisations - partnerships with research entities	- partnerships to create HR capacity (training + share knowledge and expertise around MH and wellbeing of community) - partnership that create referral pathways for community and staff support - partnership to gain operational and technical knowledge for meeting PR needs
Coordination	-coordination between HQ and UNRWA field offices - coordination between different programmes within the field - committees and structures for coordination - products for coordination (SOPs, training requirements and manuals)	- coordination to improve implementation of the MHPSS framework and avoid duplication or inconsistency - coordination to standardise quality across fields and within each programme - coordination creates common products to assist in implementation
Resourcing	- core programme funding - emergency appeal funding - sufficiency of funds for MHPSS	-funding supports intervention implementation -sufficiency of funding enables effective MHPSS response

Appendix 11: Reverse Business Continuity Guide for UNRWA health services (10th May 2020)

Major premises (Things that do not change throughout)		1. Triage at outpatient, 2. Appointment before visiting HC, 3. Telemedicine (all HC with hotline), 4.PPE for all staff & clients** 5. Physical distancing & Frequent hand hygiene and respiratory etiquette, 6. Crowd control, 7. HC cleaning		
	NCD (including MHPSS)	**MCH (including FP)**	**Outpatient**	**Other Services**
Now (Phases 1-2)*	-Distribution of NCD and mental health related medications to all NCD patients including home delivery -Avoid health center visit by elderly (>60 years) **PSS**: hotline support to registered cases	ANC -High risk pregnancy Child Health -Immunization PNC -GDM, DM and/or HTN FP - Provision of FP supplies (except IUD)	**-Triage installment** -Pharmacy in operation for NCD medicines and other urgent cases	Dental: Closed Physiotherapy: Closed
Next (Phases 2-3)*	**NCD consultation** -Lab test, BP measurement and consultation -Priorities given for 1. Those with late complications 2. Uncontrolled cases 3. Having other acute conditions from outpatient service **Mental health follow-up:** -Mental health medicine distributions (If not yet) - Urgent consultation (telephone) - Home visit for high-risk cases (PSS)	**Antenatal care (ANC)** -New pregnant registration -Last gestational period in third trimester (32wk and above) -Lab test according to TI **Child Health** -Registration for newborns and growth monitoring during vaccination. **Post-natal care (PNC)** -For all post-natal **Family planning (FP)** -Provision of FP supplies (including IUD)	**Through appointment visit only** -Consider receiving urgent cases after hotline consultation with appointment and triage at the entry -**Max** 10 cases per MO per hour -Physical distance/control crowdedness -Cold cases such as low back pain and other chronic conditions etc. can wait for next phase or can be provided regular medicines similar to NCDs **Lab services** Open for MCH and NCD tests and others requested for emergency cases in outpatient clinic	**Dental:** -Priorities to those preventive care and emergency with severe inflammation, and pain -not more than 10 cases per day for curative care **Physiotherapy:** -Complicated cases -Acute cases
After (Phases 3-4)*	-Open for NCD assessment visits and follow up with lab tests -Follow up on mental health gap cases -Perform tests for NCD patients as TI -Gradually resume full services including those not mentioned above (MHPSS screening, NCD physiotherapy, radiology etc.)	-Gradually resume full services those not mentioned above, maintaining appoint system through hotline, physical distancing and PPE	-Gradually resume full services including those not mentioned above maintaining appoint system through hotline, physical distancing and PPE	-Gradually resume full services

*Below are the proposed phased approaches suggested by Jordan UN agencies. This may not fit to all offices and differs depending on the types of installations, **so this remains as a guide you to navigate when using above table**. For example, limited staff ceiling (e.g. 30% of total staff) is for office based function and may not be applicable to health centres setting.

Phase 1
   i.   Office is essentially closed.
   ii.   Only staff with movement permits able to physically move to the office.
        a.   Primarily security or finance staff that can only carry out certain tasks at the office.
   iii. Static security guards remain in place at the premises.
Assumptions:
   1.   Those with permission to move can only do so as per the Government imposed curfew.

Phase 2
   i.   Critical staff whose functions are required to prepare the office for the return of others, e.g., Admin, Finance, Fleet Management, etc.
   ii.   Such staff should physically prepare the office as per WHO guidelines (e.g., disinfection, reorganising layouts, and temperature checking of entrants)[1].
   iii. Staff may wish to work on a rotational basis within these critical units.
Assumptions:
   1.   No movement allowed with private vehicles. Only official UN vehicles may move (i.e., possible need for shuttle services to/from office).
   2.   Movement still restricted to 1000-1800hrs window, as per Government imposed curfew.
   3.   Staff considered vulnerable[2] should not return even if part of a critical unit.

Phase 3
   i.   Resumption of essential activities; agency's "centre of gravity" is returned to the office.
   ii.   Limited staff ceiling (e.g., 30% of total staff).
   iii. Possible rotation of staff within units.
   iv. Priority given to staff who cannot work from home.
   v.   Mixture of small in-person meetings and online.
   vi. No external visitors or non-essential service staff (e.g., gardeners, cafeteria).
Assumptions:
   1.   No movement restrictions or curfew – public transport, ride-sharing services, and private vehicles all have freedom of movement.
   2.   Social distancing and COVID-19 related basic hygiene still practised at individual level and facilitated by office.
   3.   Schools still closed meaning some essential staff may still need to work from home.

Phase 4
   i.   Full return to office, including: Access for visitors; resumption of all activities/programmes; no limitations on meetings or gatherings in person; regular working hours; full office service staff.
Assumptions:
   1.   Social distancing and basic hygiene still practised in general.
   2.   Schools still closed, so some staff may still request to work from home.

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1 **https://www.who.int/docs/default-source/coronaviruse/advice-for-workplace-clean-19-03-2020.pdf?sfvrsn=bd671114_6&download=true**

2 For example, vulnerable staff may include those aged over 60; those living with family members aged over 60; those with comorbidities, such as hypertension, diabetes, or taking immunosuppressant drugs.

**Use of masks for clients in health centres

Health centres will operate in coordination with national authority guidelines on the use of masks. If national guidelines require populations to wear masks in public places including services delivery points, we should ensure clients wear a mask in health centres. For the proper control the use of mask, below measurements are recommended.

- UNRWA health centres should ask clients to come with a face mask/face cover when they make an appointment for health consultation through hotline.
- This does not mean that all those coming without a mask should be returned home because of the absence of mask.
- At the entrance of the health centres (i.e. triage point), anyone comes without a mask should be evaluated, and clients will be given a mask if s/he has an appointment, has acute symptoms, or seeks essential services (e.g. vaccination). Others (like "cold" cases will be asked if they can bring and wear a personal mask to enter.
- Patients who are provided with masks from us must be told that "this is a special case and you have to bring your mask next time".
- Only one person allowed to accompany the patient, this will reduce the overcrowding and use of mask.
- Health centre staff should be oriented well on the needs to use of mask by clients, and mitigate the improper use of resources.

Moreover, please consider the following to ensure physical distancing

- provision of notices to patients at health facilities informing them of the rules for the current phase, and what to expect;
- provision of training (and refreshers) to staff and perhaps also to patients on correct use of PPE; and
- process to identify and train staff members at each facility who can monitor and enforce the physical distancing rule.

Appendix 12: UNRWA's actions in response to the pandemic displayed per elements of the framework:

The multi-layered approach and the PAIR Model are very intertwined together in terms of actions and response. For this reason, I will start by explaining these two components of the Framework together and then proceed with the remaining elements of the Framework.

1. <u>Multi-layered approach and the PAIR Model:</u>
4. <u>The provision of basic services (health, education and relief) was not halted at any time during the pandemic</u>

    UNRWA health centres continued the provision of primary health care, including to patients with respiratory symptoms, with life-saving services prioritised.

    o UNRWA operated via a triage system to isolate patients presenting to the health centres with respiratory symptoms from others and those needing non-critical care were provided with health consultation via telemedicine.

    o UNRWA adopted a phased-approach response that specified the type of services available at health centres and the category of patients receiving a face-to-face service. Services that were labelled as less critical (e.g. dental and laboratory services) were halted, except for urgent cases. As the local authorities relaxed lockdown measures, normal operations at health centres were resumed. Details of the phased-approach response is in Appendix 11.

    o Treatment was not interrupted for patients with chronic conditions such as patients with non-communicable diseases (NCDs) and others who need psychotropic medications. Staff from the health programme and RSSP collaborated in the "Health Task" whereby they home-delivered a 3-month stock of life-saving medications to patients over the age of 70 and to patients with type 1 diabetes. When lockdown was over, medicine was delivered through someone nominated by the patient to come and collect the needed medications from UNRWA's pharmacies.

    o Emergency medical teams were utilised for home-visiting urgent and critical cases.

Education services continued. School children at UNRWA schools were learning remotely from March- September 2020. After September 2020, a hybrid model combining learning at schools and learning remotely was adopted.

- o According to GMB participants from the education programme, accessing remote learning, which is a basic service, was challenging for children and their parents. UNRWA provided self-study materials in order to ensure an inclusive education to all children with psychosocial messages integrated within the self-study modules.

The RSSP offices were closed throughout the pandemic with only essential staff present at the offices to ensure the continuation of delivering relief services. Maintaining basic services, such as food distribution, for the beneficiaries was a challenge during the pandemic.

- o RSSP in Gaza adopted a new modality that ensured the home delivery of food aid to 1.15 million beneficiaries. Due to shortages in available funds, the delivery of food aid was delayed and people did not receive all food items in the first distribution cycle yet, they were compensated in subsequent cycles. For more details, see section on "Resourcing" and "Strategic partnerships".
- o Other basic services such as cash distribution continued to be offered to eligible refugees in Gaza and an online registration system to register newborns, marriages etc. was put in place

5. Measures taken to limit foot traffic to UNRWA health centres affected the screening and identification process of new MHPSS cases and the category of beneficiaries entitled for a face-to-face service.

- o In reference to the phased-response, in phases 1 and 2, MHPSS screening was halted and only essential services were provided. Hence, new MHPSS cases were limited to patients calling and asking for the MHPSS service. When this happened, patients were referred to psychosocial counsellors for assessment and remote counselling. According to the GMB participants,

self-referral to MHPSS services was not very common though. In phases 1 and 2, psychosocial counsellors mostly followed-up with cases that were registered and identified pre-pandemic. When the number of COVID-19 infected persons were high, it became a priority to provide consultation for COVID-19 patients and their families (if needed). As mentioned during the GMB, in phase 1, remote counselling was only limited to critical cases only. High risk cases such as the elderly were not followed up with.

- o In phases 2-3, psychosocial counsellors were permitted to home-visit high risk cases (such as GBV cases or elderly patients) if reaching them remotely was difficult. Also, psychosocial counsellors provided remote consultations for new MHPSS cases that were classified as urgent or high risk only.

- o In phases 3-4, normal MHPSS service delivery was resumed as screening services were put back in place. GMB participants mentioned that the current version of the GHQ-12 (General Health Questionnaire) that they usually use for screening has now additional two questions about GBV to maximize the identification of GBV cases.

6. School counsellors followed up with MHPSS cases that were identified pre-pandemic as the identification of new MHPSS cases depended on the children's presence at schools.

- o Pre-pandemic, MHPSS cases would be identified while children attend UNRWA schools. During the pandemic, identifying new MHPSS cases was hindered during the period of exclusive remote learning.

- o School counsellors monitored the mental health of pre-existing patients by conducting care calls to children previously identified as needing additional psychosocial support, including children with disabilities.

- o Upon return to school, school counsellors were then able to resume screening and identifying new MHPSS cases.

7. Unlike the Health and the Education programmes, social workers from the RSSP were in more contact with the beneficiaries and hence, were able to continue identifying new MHPSS cases throughout the pandemic.

   o The collaboration of the social workers from the RSSP with the Health Programme in the home-delivery of essential medications, the Health Task, enabled them to provide Psychological First Aid (PFA) to visited patients and identify those who need additional MHPSS support.

   o Social workers were also helping psychosocial counsellors by conducting care calls to Covid-infected individuals, and their family members if/when they also needed support, on a daily basis, for fourteen days. See section on Collaboration for more details.

8. Interventions to support communities and families, with a focus on vulnerable groups, were implemented by MHPSS staff at the core programmes.
   Interventions centred around prevention/promotion, reinforcing positive coping mechanisms and complemented by focused, non-specialised interventions. Monitoring and responding to protection concerns (especially for women and children) was ensured.

   o At the core programmes, multiple interventions were implemented during the pandemic such as:

      ▪ individual and group counselling sessions for GBV women: Psychosocial counsellors established WhatsApp groups for groups of beneficiaries presenting with similar MHPSS needs/conditions. For example, a WhatsApp group for women subjected to GBV, consenting to join, was established. Psychosocial counsellors used this group to maintain contact with these women during the pandemic, check-up on them, and provide them with general advice on coping and stress management.

      ▪ Also, social media platforms were utilised by MHPSS staff in the three core programmes to post awareness messages on coping skills

during the pandemic and stress management, addressing stigma related to COVID-19, ways of protection against the virus, healthy parenting tips to interact constructively with children during the pandemic etc.

- Social workers from RSSP and school counsellors conducted individual and group counselling sessions for people with disabilities, including children with physical impairments and/or psychosocial needs, and to orphans.

- School counsellors provided online recreational activities for all students and games adapted for children with physical and intellectual difficulties. They conducted group counselling sessions for parents and teachers around different topics ex: parenting during the pandemic, stress management etc.

- Utilising social media platforms to spread contact details of MHPSS staff working at the RSSP, health and education and encourage beneficiaries to reach out for help.

- Refer to section on "Collaboration" for more Information around specialized assessments.

o Challenges to provide remote counselling to vulnerable groups were present and were overcome by conducting home-visits.

- Challenges around maintaining confidentiality and causing no harm to beneficiaries receiving remote counselling were voiced by the GMB participants. The reasons behind that were either due to the inability of the beneficiary to secure a private place to maintain confidentiality during the session, or the beneficiary feeling unsafe to talk especially if the perpetrator is present at home (the case for some women subjected to GBV), and/or the lack of having a private mobile device by the beneficiary (this is especially the case for children who do not have mobile phones of their own) whereby confidentiality was at risk.

- When health centres were open for high risk and critical cases to attend, psychosocial counsellors and social workers were able to follow-up and offer face-to-face interventions. GMB participants had the impression that for some women, leaving the house to attend the counselling session at the health centre was a challenge because they had to give a valid excuse to other family members living in the same household for why they needed to leave. That was difficult when most of the places were closed and going out had to be for very valid reasons.

- To overcome these challenges, psychosocial counsellors from the health programme and social workers from RSSP performed home visits for high risk and critical cases starting phase 2 of the 4-phase-response approach.

9. In the exceptional circumstances of the pandemic, UNRWA provided specialised services utilising the services of psychiatrists

    o During the Covid pandemic and because governmental institutions were limiting foot-traffic to their premises, UNRWA hired psychiatrists on a yearly contract. Psychiatrists performed online counselling for critical and high-risk cases. Psychiatrists who were vulnerable themselves (those aged over 60; those living with family members aged over 60; those with comorbidities, such as hypertension, diabetes, or taking immunosuppressant drugs) provided remote psychiatric sessions utilising MS-Teams and Zoom platforms. According to GMB participants, 400 critical and high-risk cases were provided with remote psychiatric sessions between November 2020 and February 2021.

10. UNRWA's ability to provide MHPSS interventions via the multi-layered approach depended on staff training (See the section on staff capacity).

2. <u>Staff safety and wellbeing were directly affected by the COVID-19 pandemic and the wellbeing of the community:</u> As mentioned earlier, the COVID-19 pandemic affected the epidemiological situation of Gaza which then influenced the "staff psychological wellbeing", "staff physical wellbeing", and "the presence of an enabling environment and support within UNRWA". Looking at the right side of the diagram, the pressure arising from "addressing the mental health needs of staff and community" compromised staff psychological wellbeing.

- <u>To support staff psychologically:</u> supervisors provided remote supervision regularly to support practitioners to address a variety of challenges related to service delivery during the pandemic and to check on their wellbeing.

- Also, psychosocial counsellors at the health programme, school counsellors and social workers at the RSSP offered individual and group counselling for the staff members in their respective programmes.

   o GMB participants reported during the workshop that the wellbeing of community members impacted staff psychological wellbeing. The appreciation the staff felt when they home-delivered food parcels and essential medicine motivated them, for instance, and raised their morale.

- <u>To support staff physically:</u> UNRWA provided staff with PPE to protect them from contracting the virus at its facilities and during fieldwork (e.g. during distribution of medicine and food parcels). In terms of policies, UNRWA staff who were classified as vulnerable (those aged over 60; those living with family members aged over 60; those with comorbidities, such as hypertension, diabetes, or taking immunosuppressant drugs) were given the option to work from home (See phased-approach response in Appendix 11).

   o GMB participants at the health programme mentioned that when patients with critical issues were allowed to visit health centres for a face-to-face service, they still received a remote psychiatric session. The reason was due to the fact that the psychiatrist himself was vulnerable and therefore, the patient would attend the health centre and receive the psychiatric

session over MS-Teams or Zoom while the psychiatrist himself was providing it from home.

Therefore, the presence of an enabling environment within UNRWA that protected staff psychological and physical wellbeing was demonstrated at UNRWA facilities and within UNRWA policies.

3. <u>Capacity development:</u>

- <u>Staff training was a key determinant for whether new MHPSS cases could be identified and provided with the proper intervention</u>. As seen in Figure 4, the pathway from "HR capacity" to "addressing MH needs" emphasises the need to have human resources that are appropriately trained on the WHO-mhGAP and the stepped-care model in order to identify and support individuals with mental health needs.

    o In the exceptional circumstances of the pandemic when foot traffic to health centres was limited, UNRWA had to utilise the services of part-time staff and staff on temporary contracts, who are mostly medical doctors and nurses, at triage points and at hotlines providing telemedicine services. Because these staff members were not on fixed-term contracts, they were not trained on the WHO-mhGAP. Therefore, the limited HR capacity of available health staff meant that identification of MHPSS cases was limited therefore, not all MHPSS needs were met.

    o The same pathway is relevant to social workers from the RSSP. The RSSP had undergone a reform prior to the inception of the pandemic. This reform included introducing a new cadre of staff, social workers, who were trained to provide psychosocial services. The training took place between October 2019- February 2020. Therefore, the training that was given to social workers at the RSSP increased available MHPSS staff within UNRWA. Social workers' collaboration in the "Health Task" and the care calls to

Covid-infected individuals and their families enabled the identification of new MHPSS cases.

11. <u>MHPSS staff were trained on remote counselling in order to continue providing MHPSS during the pandemic</u>

During the pandemic, trainings on remote MHPSS service delivery and the ethical considerations around remote counselling were given to MHPSS staff to increase their capacity.

- o MHPSS supervisors in the three core programmes received their first training in April 2020 followed by another training in June 2020. Trainings, offered by external partners and internal trainings utilising a ToT approach to counsellors, improved staff competencies in conducting remote counselling.
- o UNRWA supported MHPSS staff logistically to enable remote counselling (Refer to Resourcing)

- Although UNRWA is a primary health care yet, in the absence of a functioning referral pathway to external partners, UNRWA contracted with psychiatrists to provide specialized services.

4. <u>MHPSS in Emergencies:</u>

<u>With no pandemic preparedness plans, UNRWA staff were "learning by doing".</u>

- GMB participants mentioned that UNRWA's plans addressed emergencies arising from conflicts and had no emergency plans in place to address a pandemic.

- o With no pandemic preparedness plan of its own, UNRWA did not have SOPs and technical guidelines to follow during a pandemic.

  - i. UNRWA adopted the WHO strategic preparedness and response plan during COVID. Therefore, technical advice from the HQ were aligned with international recommendations and guidelines.

- o Looking at the diagram, coordination at the field level between different programmes to provide MHPSS services enabled the implementation of MHPSS network/services. According to GMB participants, field programmes were "learning by doing".

5. Strategic partnerships:

   <u>Partnerships with pre-pandemic stakeholders continued and new partnerships were</u>
   <u>sought.</u>

   - GMB participants mentioned that governmental institutes had no contingency plan, nor the financial capacity, to adapt their services, for example to remote modalities, during the pandemic. When referrals to external partners who usually provide specialized treatments was compromised, UNRWA hired psychiatrists on a yearly contract.

   - Partnerships with research entities were fostered during the pandemic as UNRWA utilised the expertise of external partners to train their staff and to learn more about best practices and stay up-to-date with the changing guidelines and recommendations.

   - For the delivery of food parcels, UNRWA contracted with an external company. As mentioned by GMB participants, the home-delivery of food aid to 1.15 million refugees within a short period of time was beyond UNRWA's capacity.

6. Coordination:

   - GMB participants had the impression that the HQ monitored the implementation of the MHPSS Framework and provided technical guidance to adopt the phased-approach response.

   - Informed by national guidelines, MHPSS field coordinators, supervisors along with focal points from the core programmes adjusted the implementation of UNRWA MHPSS Framework, facilitated internal referrals and prevented duplication of services.

     o GMB participants mentioned that in the unusual circumstances of the pandemic, a term of reference (TOR) between RSSP and the Health Programme and another between RSSP and Education programme gave social workers at the RSSP the responsibility to carry out specialized assessments and provide focused, non-specialised interventions to high-risk and critical cases.

- o Case management teams were also put in place whenever there was a need to provide a multi-disciplinary MHPSS response.
- Coordination extended to utilising other programmes' facilities:
  - o Because RSSP offices were closed, except for essential staff, social workers were working from home for the entire period of the pandemic. The RSSP and the health programme coordinated together to allow social workers of the RSSP to utilise office space at the health centres to offer face-to-face MHPSS intervention to high risk and critical cases.

7. Resources:

- UNRWA mobilised funds internally to enable the prompt implementation of the MHPSS response. With more funds needed, UNRWA raised emergency appeals to:
  - o Provide logistic support for staff offering remote services: UNRWA provided school counsellors at the education programme and social workers at the RSS programme with mobile phones and phone credit in order to facilitate a remote MHPSS service, as per their scope of service, starting September 2020.
  - o Procure medications and PPEs from the local market and other alternative sources when delivering medications and PPEs from UNRWA's central pharmacy at HQ was compromised
  - o Install triage points, adjust the internal layout and install hygiene stations at health centres and offices
  - o Install additional phone lines for MHPSS staff at health centres and RSSP offices to reach out to beneficiaries, follow up on existing cases, and refer to other services if/when necessary.
  - o Contract with an external company to home-deliver food aid

Appendix 13: Published article

BMC Public Health

Social determinants and mental health needs of Palestine refugees and UNRWA responses in Gaza during the COVID-19 pandemic: a qualitative assessment

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Abstract

Background: Due to pre-existing difficulties, refugees are especially susceptible to the negative effects of the pandemic; nonetheless, the pandemic's effect on this group is still unclear. The purpose of this study was to determine the effects of the COVID-19 pandemic on the mental health of Palestine refugees in Gaza by identifying the role of social determinants. During the pandemic, the United Nations Relief and Works Agency for Palestine Refugees in the Near East (UNRWA) enacted a number of policies and measures. The purpose of this research was to assess their efficacy and acceptability.

Methods: This qualitative study took place between August and November 2020. Twenty-nine key-informant interviews were conducted remotely with UNRWA Headquarters, field and clinical staff in Gaza and with community members, aged ≥18 years and residing in Rafah and Jabalia camps. We sought informed consent verbally or via email. Data was coded based on the framework for social determinants of mental health.

Results: Interview results indicated that the relationship might be unidirectional, with COVID-19 causing the degradation of living conditions and vice versa, with living conditions exacerbating the COVID-19 situation by facilitating virus transmission. In other instances, the association between mental health determinants and COVID-19 might be bidirectional. In terms of experiencing violence and anxieties, women, children, and daily-paid employees were significantly more disadvantaged than other groups in the community. UNRWA modified its service delivery techniques in order to continue providing essential services. In general, UNRWA's strategies throughout the pandemic were deemed beneficial, but insufficient to meet the needs of Gazans.

Conclusion: The pandemic highlights the need to go beyond disease treatment and prevention to address social determinants to improve refugees' health and reduce their susceptibility to future shocks. UNRWA has rapidly implemented telemedicine and mental telehealth services, making it imperative to assess the efficacy of these novel approaches to provide care at a distance. A long-term option may be to employ a hybrid strategy, which combines online and in-person therapy.

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Introduction

Background

The Arab-Israeli war officially started with the Nakba and the founding of Israel on May 15, 1948. By 1948, the Jewish forces had systematically depopulated 500–600 Palestinian villages and/or cities; threatening the lives of Palestinians, permanently expelling and sending into exile about 750,000 Palestinians [1]. By mid-2021, the population of Palestine refugees has grown to reach 13.8 million, scattered around the world [2]. Following the United Nations Partition Plan in 1948, Gaza city, and the area surrounding it, was allocated to the Arabs. Since then, this area became populated by internally-displaced Palestinians that were living in poverty in impoverished camps and were later offered aid by the United Nations for the Relief and Works Agency in the Near East (UNRWA) starting 1949 [3]. Since its establishment in 1949, UNRWA has been mandated to provide assistance to Palestine refugees in Syria, Lebanon, Jordan, Gaza and the West Bank (including East Jerusalem). In addition to providing health care, UNRWA provides education, relief and social services, microfinance and emergency assistance [4].

Between 1948 and 1967, the Gaza Strip witnessed several armed conflicts between Israeli forces and Arab guerrillas fighting against Israel; it was taken by Israel the first time in 1956 and reverted back to Egyptian control a year later, and was occupied again by Israelis in June 1967 after the Six-Day War that took place back then. The territory remained occupied by Israelis from 1967 to 2005 after the first and the second Intifada, which took place in 1987 and 2000, respectively, that forced Israeli troops to gradually retreat and transfer governmental control to the Palestinian Authority (PA) [3]. During the occupation of the Gaza Strip, the Israeli forces limited the movement of people and the exchange of commodities with other parts of Palestine. It restricted access to land and sea borders resulting in weak health and social services [5]. After the PA took control over the Strip, violence escalated between different Palestinian political groups, which led to the transfer of power in Gaza to Hamas in 2007. Hamas, listed as a terrorist group by Israel, the United States and the European Union, brought sanctions onto the Strip [3]. Since 2007, Israel, followed by Egypt, have enforced a blockade on the Gaza strip, thus crippling the lives of Palestinians even further and depriving its inhabitants from basic commodities such as fuel, food, and medicine. Since the blockade, Gaza was subjected to four

major military operations by Israeli troops, with the last taking place in August 2022 and lasting for 3 days [6].

Approximately, 1.95 million Palestinians reside inside the 365 km^2 area of the Gaza strip, of whom 1.47 million are registered refugees with UNRWA whereby 37.1% are living in 8 highly populated camps [4], compared to 871,000 registered refugees in the West Bank who live in 19 camps. This profile emphasizes the highly populated, scarce-resource setting of the Gaza strip [7]. Palestine refugees living in Gaza, especially those living in camps are at the bottom of the socioeconomic ladder [8]. In 2019, a year before community transmission of COVID-19 in Gaza, the level of unemployment was surging high reaching 45.1% [9]. Estimates of the same year by UNRWA show that 620,000 Gazans survive on $1.60 per day and nearly 390,000 Gazans live in absolute poverty [10]. The blockade, the dire socioeconomic status and the frequent exposure to violence have pushed Palestinians further into despair, with negative impacts on mental health and wellbeing [5].

Gaza has one of the youngest populations globally, with 64.2% of the population in 2021 being under 25 [11, 12]. The majority of studies on anxiety and depression in Gaza were conducted on children and adolescents [13–15]. A study in 2008, which included adult participants, was conducted on 200 parents and 197 children (aged 9–18 years) living in areas subjected to ongoing shelling and other military violence in Gaza. This study showed high rates of post-traumatic stress disorder (PTSD) and anxiety in both groups, with exposure to war trauma significantly deteriorating the mental health of both parents and their children. In this study, 77% of children were likely to present with PTSD using the Children's Revised Impact of Events Scale (CRIES-13) cut-off score of 30 and 60% of parents were likely to have PTSD with potential clinical significance as assessed using the PTSD-Checklist with a cut-off of 50 [16]. Similar results around PTSD rates amongst adolescents were published a year earlier. Data from 2007 showed that 68.9% of adolescents had PTSD, 40% had moderate to severe levels of depression and 94.9% had severe anxiety [8]. According to the Lancet Commission on Global Mental Health, the origin of most of mental disorders go back to childhood and adolescence [17]. A review in 2015 showed that the prevalence of PTSD among children after a single episode of assaultive violence in a high-income context, such as that reported after being subjected to a mass shooting in the United States, varies between 8 and 91%. This huge

variation raises methodological concerns such as the scale and diagnostic criteria used, the pre-incident psychological status and the timing of which the assessment took place as the prevalence of psychiatric disorders usually decreases over time [18]. For these reasons, it is difficult to compare prevalence estimates between different studies, using different diagnostic tools, and after varying time points post-event. Nonetheless, in 2016, data from UNRWA on protection and related services showed that the prevalence of depression and PTSD amongst Palestine refugees in general was greater than global figures [19].

In 2012, the United Nations published a report on the future of Gaza warning that by 2020 the territory will not be a liveable place if no remedial action to end the siege is taken [20]. Since the siege did not end, Palestinians living in Gaza continue to face multi-faceted psychosocial vulnerabilities, which the SARS-CoV-2 pandemic is likely to exacerbate. Countries and settings that were already experiencing a humanitarian crisis are particularly affected by the negative medical, economic, and psychological aspects of the pandemic [21]. The deterioration of mental health of different population groups during the COVID-19 pandemic has been documented worldwide [22]. According to the United Nations High Commissioner for Refugees (UNHCR), the pandemic itself and its associated mitigation and prevention measures has added to the deterioration of the mental health status of refugees [23].

Global evidence suggests that mental health disorders in populations worldwide are socially determined to a great extent [24, 25]. Social determinants of mental health are defined as the driving force that shapes wellbeing at the individual and community levels. They are the social, economic and environmental factors that affect the onset and prognosis of mental health illnesses. They also increase the risk for physical illnesses and worsen the patients' prospects [26]. In 2018, the Lancet Commission on Global Mental Health and Sustainable Development provided a new conceptualization of social determinants of mental health, bringing together distal and proximal factors and associating them with the Sustainable Development Goals (SDGs) in an attempt to drive the reduction of global mental health while progressing towards the attainment of SDGs.

As the refugee population in Gaza is already facing a convergence of stressors, the detrimental effects of the pandemic on mental health and its social determinants amongst this vulnerable group is important to explore. Specifically in this research, we aimed to explore the impact of the COVID-19 pandemic on the social factors and daily living conditions affecting the mental health of Gazans living in Rafah and Jabalia camps, and

to document views around the effectiveness of UNRWA's policies and services that were enacted by UNRWA during this stressful period, in order to address the vulnerabilities of the study population and design targeted interventions.

Methods overview

This was a qualitative study and the data in this paper is a subset of a bigger dataset obtained in another study that took place in Gaza and Lebanon's fields of operations on the effectiveness, equity, acceptability, and scalability of the strategies enacted by UNRWA during the COVID-19 pandemic, and underlying health system and community capacities supporting strategy implementation [27]. In the overall research, interview questions explored contextual differences between Lebanon and Gaza in relation to COVID-19 response strategies and the arrangements made to ensure continuity of services (with a particular attention to mental health and non-communicable diseases (NCDs) services). Also, interviewees were prompted to reflect on the stressors experienced and coping strategies adopted during the pandemic (Supplementary material-1). The overall sample size of the original dataset is 45 key-informant interviews across Gaza and Lebanon. At the time of data collection, Palestine refugees in Lebanon were facing a multi-layered crisis, compounding the pandemic woes. The political unrest, economic collapse and the Beirut blast on August 4, 2020 created a different set of challenges for Palestine refugees in Lebanon and prompted a different response from UNRWA. For this reason, we restricted our scope in the current manuscript to data extracted from 29 key-informant interviews of UNRWA-Headquarters (HQ), staff, and community leaders/members based in Gaza only.

Key-informant interviews
Participants and sampling
ZJ carried out interviews with UNRWA HQ, Gaza Field Office, Health and Relief and Social Service UNRWA staff and with community leaders/ members residing in Jabalia and Rafah camps. Inclusion and exclusion criteria are detailed in Table 1. The reason why these camps were selected is because they are the most densely populated refugee camps in Gaza and are geographically dispersed across the Strip. The sampling strategy was guided by principles of data saturation and diversification. The latter was important to reflect various views, levels of knowledge and experience. Determining the sample size needed to reach data saturation in qualitative research is largely debated in the literature with recommendations around recruitment starting with a minimum of 15 participants [28] to between 30 and 60 participants

Table 1 Participants' inclusion criteria

Participant category	Eligibility criteria
UNRWA staff	a) actors in the Health Programme and in the Relief and Social Services Programme engaged in routine and/or COVID-19 related service delivery at the clinical, area, field, or the headquarter level b) in position for 1 year or more and c) ≥18 years old
Community members/ leaders	a) Palestine refugees i.e. registered with UNRWA b) residents of either Rafah or Jabalia camps c) ≥18 years old

by others [29]. In the current study, participants were selected using purposive, convenience and snowball sampling.

Recruitment

The Research Coordinator at UNRWA (SA) was in charge of recruiting key-informants (UNRWA staff and community leaders). SA contacted all potential key informants working at UNRWA explaining the study and inviting them to reply to the study team if they wish to participate. Also, SA contacted community leaders at each camp, explained what the study is about and explained all procedures of informed consent including the voluntary participation, the possibility to withdraw at any point and the absence of any benefit or harm from UNRWA for those who wish to participate or not. In order to avoid any feeling of coercion, SA told community leaders that they can confirm whether they would like to participate or not in a subsequent call. ZJ contacted each participant who agreed to participate to inform him/her about the study and seek the participant's consent. Upon giving consent, ZJ agreed with each participant on a date/time and means for carrying out the interview. The interviews were carried out for 3 months starting August 2020. Details of recruited participants are outlined in Table 2.

Data collection

All interviews were conducted remotely by the researcher ZJ via Microsoft Teams(MS-Teams) or WhatsApp.

Interviews were conducted either in Arabic or English (upon participant's preference) and lasted 45 minutes on average. They were audio-recorded upon the participant's consent, translated, and transcribed, verbatim and at the same time, directly to English. The transcription was carried out by the field researcher MW and FF and were verified by ZJ. Participants utilised their own phones or laptops when interviewed. The interviews were carried out in a private place that the participant was comfortable at which was either at their office or their place of residence.

Interviews with UNRWA staff members (at HQ, field, area and camp levels) addressed the policies and services that were enacted by UNRWA during the COVID-19 pandemic, the impact of the pandemic and the containment measures adopted by UNRWA on the Palestinian community, the arrangements to continue routine service delivery, including mental health and psycho-social support (MHPSS) and NCD services and the stressors and coping mechanisms practiced by staff during the pandemic. Interviews with community members focused on identifying community stressors and enacted coping strategies, trust in UNRWA and acceptability of the COVID-19 related health response, and ability and willingness to act on public health advice. Interview questions were developed by the study team to answer the research questions of the study. Before starting data collection, a pilot interview with an UNRWA staff was carried

Table 2 Participants of Key-Informant Interviews

Participant category	Participant details	Number
UNRWA Headquarters (HQ) staff	Members of the COVID-19 Coordination Body (e.g. representatives from Protection, Planning, Security and Risk Management (SRM) among others) who were responsible for the overarching coordination and core administrative functions	4
Field and area level[a]	Staff at the health, social work, planning, protection, operations, and emergency departments in Gaza Field Office	9
Health and social care professionals (camp-based) [a]	Doctors (general or specialist), Nurses, Pharmacists, Head of health centers and coordinators, Social and relief service workers, and Psychosocial counsellors at either Rafah or Jabalia health centers	12
Community members/ leaders	Community leaders (e.g., political, religious or leaders of NGOs) and members	4

[a] Participants recruited from the Gaza Field Office and those working at the health centres were responsible for context specific operations and for ensuring the service delivery and continuity of health and social and relief services at Jabalia and Rafah camps
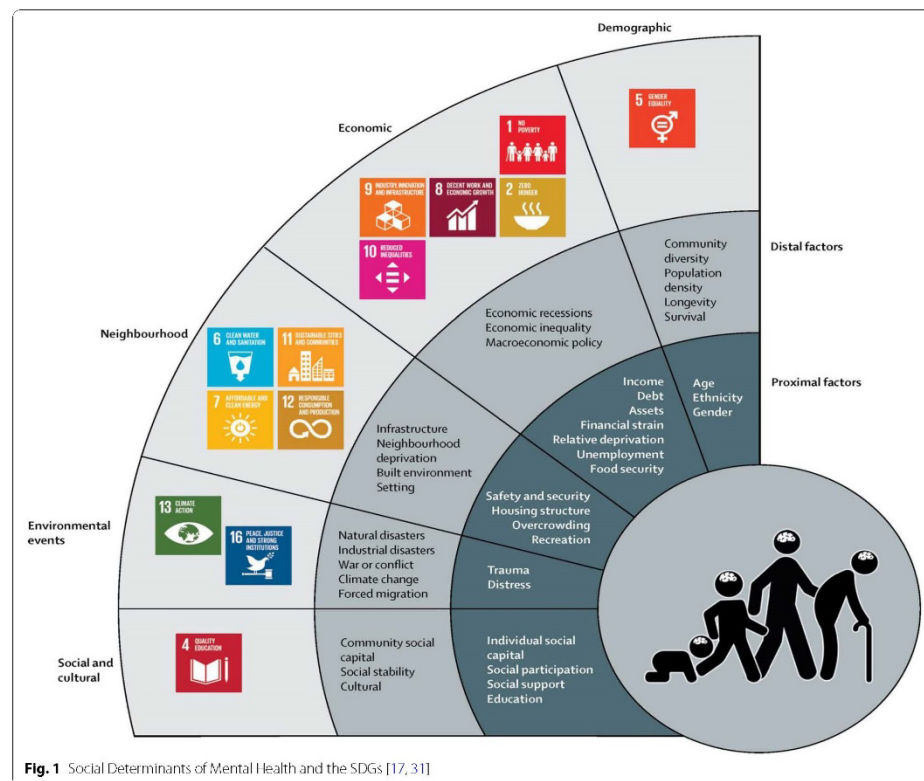
Fig. 1 Social Determinants of Mental Health and the SDGs [17, 31]

out to ensure clarity of the questions. The interview guide for the different participant groups is found in Supplementary material-1.

Analysis

Data was analysed using thematic content analysis, using a combination of inductive and deductive approaches. The analysis of interview data was done following the outlined steps:

- Becoming familiar with the dataset: This phase involved reading and re-reading the transcripts and sometimes going back to the original audio-recordings. The purpose of this phase was to become immersed and deeply familiar with the information presented in the interviews.

- Coding of the interviews: Interviews were uploaded on Dedoose Version 7.0.23 for coding and subsequent analysis [30]. ZJ coded the interviews, and held several deliberations with KD to finalise coding tree and add new codes when relevant. The codes were developed to cover the elements of the conceptual framework on Social and Cultural determinants of Mental Disorders and the Sustainable Development Goals (Fig. 1). An additional code and subcodes were added to answer the second research question on UNRWA's strategies. Using an inductive approach, information on UNRWA's strategies were extracted.

- Generating themes and presenting the analytic narrative: Initially, ZJ started collating related codes and began developing initial themes around them. After that, ZJ started reviewing the generated themes, looking for patterns and overlap and weaving

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together the narrative so that the final list of identified themes genuinely "tell the story" behind the data. This whole process was iterative as ZJ was going back and forth to the raw data for deeper understanding and reflection and to collate relevant excerpts that illustrate the ideas presented.

Results

The analysis of the 29 interviews identified four major themes and 9 subthemes. The first three themes fit well with the proximal and distal factors outlined earlier in the framework on social determinants of mental health (Fig. 1). They describe the relationship between COVID-19 and the determinants of mental health. Evidence from interview data shows that the relationship could be one way, with COVID-19 leading to the deterioration of living conditions, and vice-versa i.e. with living conditions worsening the COVID-19 situation by favouring virus transmission. In other situations, the relationship between determinants of mental health and COVID-19 could be bidirectional. For instance, unemployment and financial strain were negatively impacted by the pandemic and breaking lockdown measures to secure income favoured virus transmission. Theme 4 discussed the services and strategies that UNRWA enacted in response to the pandemic and outlines the community's views around those strategies, in terms of effectiveness and acceptability.

Theme 1: determinants which deteriorated as a result of COVID-19

Participants' experiences during the pandemic illustrate how this health crisis have worsened their mental wellbeing by negatively impacting the conditions in which they live in. Violence at the community level and reported cases of Gender Based Violence (GBV), especially against women and girls, increased during the pandemic; both of which were attributed to the lockdown measures. Limited resources during the pandemic meant also that households had increased food insecurity.

a) Violence

Precautionary measures to curb the spread of COVID-19 pandemic instigated episodes of violence between the public and the police. As the police were trying to enforce lockdowns, they often clashed with the people as they were trying to break the forced confinement.

"There were conflicts between people and the police for not complying with the instructions due to COVID... people were fed up and they didn't abide

by the instructions, which caused conflicts with the police. Frankly speaking, unhealthy meals were provided to patients at the governmental isolation areas. Also, if there was an infection, the authorities will quarantine the whole building and keep everyone locked up, without providing them with their food need, so people ran away. People were suffering both ways, whether quarantined at their homes or at the government isolation centres... In short, the pandemic affected three aspects: social, economic and psychological." Psychosocial counselor_Jabalia 4

b) Gender-based-violence

Interview data with UNRWA HQ staff suggest that GBV, particularly violence against women and girls, became more common during the pandemic, mainly due to home confinement and forced lockdowns.

"Data indicates that we have an increase in domestic violence related to abuse within the family particularly on females. I think that is also affecting the mental health during the pandemic". Headquarter staff_1.

"Of course, home quarantine generates a lot of family violence as a result of psychological pressure on people. Home quarantine is not easy especially when it is obligatory". RSS_Jabalia 3

iii) Food insecurity

The COVID-19 pandemic increased the number of people in Gaza suffering from food insecurity. Reduced income impacted Gazan's ability to buy foods and UNRWA's in-kind assistance was delayed for those eligible and was only given to a segment of the society while in reality, the majority of people were in need of such aid.

"Definitely this pandemic has affected food security and as I mentioned before, the majority of the Palestinian people live on an irregular daily work. A person for example, cannot leave his job, stay at home and deprive his family from many basic needs just to abide by the protective measures against coronavirus. The economic situation is very difficult for many people". RSS-Jabalia 2.

"People stuck at home due to Coronavirus and this in itself has affected people negatively, as they don't have enough food. I am talking about the majority (almost two-thirds of the community)." Psychologist_Jabalia 4.

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Food insecurity impacted people who were under forced confinement at home as there was no contingency plan to regularly provide food for such families. Even those who were quarantined at hotels and isolation centres complained about the food, saying that the food served was not fresh nor was it nutritious.

> *"People were quarantined for a week and no one asked about them. They were trying to call the free number, but there was no answer... they [UNRWA staff] answered their calls, but after 10 days, then they brought food and aid. They provide aid to the quarantined, but frankly, irregularly. A large family needs to eat every day and only one meal is not enough. For example, my sister was quarantined, the first day they brought her rice, the second day they brought her cheese and milk, but what about the children? Where is the bread, where is the flour, where is the milk? Third and fourth day they did not bring anything, and so on". Community member_Jabalia 1*

iv) Accessing education

The education process got disrupted during the pandemic. Remote learning requires proper resources and infrastructure to carry it on. Interviewees said that UNRWA schools were offering remote learning as schools were closed most of the year 2020. However, not all students were able to access remote learning in a resource-scarce setting such as Gaza. First, the internet connection is very bad and parents cannot afford to buy laptops or iPads for their children.

> *"I was hoping UNRWA would do more, but you know in Gaza, we have limited resources. However, at least, to provide students with school books, how students can study without having textbooks. Okay they are available on the internet, but in Gaza, not all people have mobiles, iPads or laptops. Also, the distant learning curriculum is very difficult and intense and not all parents are educated. UNRWA currently started to distribute school books to parents, as there's nothing more they can do." Psycho-social worker_Rafah 5.*

In addition, a school principal in Jabalia mentioned also that some parents do not have smart phones which could have been a replacement in the absence of computers and other expensive devices.

Interviewed MHPSS staff noted that children showed elevated levels of aggression because they were confined at home with limited opportunities to learn and play.

> *"This pandemic has greatly affected children and they were showing very violent behaviours with-*

> *out control. There were no schools, no electricity, no technology, and not all parents are educated to help their children with distance learning". Psychosocial counselor_Jabalia 4.*

> *"Parents also have noticed negative behaviours among their children as schools and streets were the only breathing space for them. I always recommend people to spend more time with their children, engaging them in doing useful things using simple materials" Psycho-social worker_Rafah 5*

e) Social support, community ties and good work relationships

Interview data draw on examples of social capital or community ties that were displayed during the pandemic. For community members, UNRWA is perceived as a pillar of stability that provides necessary services and support for Palestine refugees in Gaza.

> *"UNRWA is considered as a pillar... our lives depend on UNRWA and the services it provides whether it is health services, coupons for food, education etc. We rely on UNRWA in everything. We fully trust UNRWA even now during the pandemic" Community member- Jabalia 1.*

Within UNRWA, the solidarity that the staff have shown and the cooperation between different stakeholders to act collectively to serve the Palestinian community are examples of social capital.

> *"Working from home is not an easy job and it is a big challenge for me and my family to provide the services required for that, in addition to the many tasks, we were asked to achieve... we serve our people, this is considered a patriotic and religious duty." Social Worker_Jabalia 3.*

> *"There was coordination between some associations and UNRWA. Some NGOs provided quantities of food parcels and medicines... and this is what I saw in reality". Community member_ Jabalia 1.*

> *"...We currently work in cooperation with the ministry of health and some NGOs. We have a list of NGOs with their contact details and addresses. If we detect a critical case over phone, we contact the NGOs and give them the case's address and contact details and explain to them the exact condition of such case in order to make a home visit to them" Physician_Rafah 1.*

Interview data show that one of the stressors that people went through during the pandemic was the fact that physical and social distancing separated people from their social support network. The concept of physical and social distancing is foreign for Palestinians as they usually draw on the social support of friends and family to overcome emergencies.

"We are a conservative society, as family relations are great, but the COVID-19 pandemic was a shock to the Palestinian community. New concepts were introduced to people that were not desirable for them, such as social distancing, not shaking hands, wearing masks and gloves on a daily basis, preventing weddings, condolences and praying in mosques, many things. But we must change our perceptions and behaviours in order to protect ourselves from this disease." Community members_Rafah 2.

One interviewee said that social support remained during the pandemic. COVID-19 prevention measures did not prevent people from helping each other.

"… neighbours help too. There is a family interdependence among people, even if UNRWA does not afford aid, people help each other." Community member_Jabalia 1.

However, not all participants agreed on that. UNRWA staff had the impression that the social stigma against COVID-19 patients was common in Gaza. The stigma was reinforced through malpractices by the health authorities when dealing with a newly identified case, the spread of fake news and misinformation and the day-to-day interactions between members of the community. As a result, stigma has created health inequalities, reduced social interactions and support during the pandemic.

"I think there is a stigma in the community due to a number of mistakes made when dealing with cases by local authorities… when someone is tested positive for COVID-19, the local authorities go to pick him/her with an ambulance and a police car, so you can hear the ambulance sirens all the way to them and they also take their family members to be isolated in isolation centres. Accordingly, this caused a very negative reaction from the community and looked like it is a charge to be infected with COVID-19". Gaza Field Office staff 5.

"Honestly, yes, they're suffering from stigma, and that's putting psychological pressure on them. People tend to isolate the infected people with COVID-19 and they are afraid to make any contact with them

even after they recover". Psychosocial counselor_Jabalia 4.

Stigma related to mental health illnesses was perceived by psychosocial workers at UNRWA to have reduced in the past few years. People with poor wellbeing seem to be seeking professional help more than before. During the pandemic, UNRWA staff had the perception that people were more accepting to receiving psychological help should they need it.

"Previously, people felt stigma to have mental issues or refused to go to psychiatrists, but nowadays people accept the situation and doctors were transferring patients to the psychiatrist clinics without any problems". RSS_Rafah 5.

At the level of UNRWA, staff supported each other very much during the pandemic. The support received from colleagues and from the higher administration boosted the staff morale and enhanced their job performance.

"…It [the pandemic] made them [UNRWA staff] closer to each other and they shared their concerns. I did a lot of things to support the staff "you are great", psychodrama and a breakfast gathering. I think that the relationship between the staff is now way better than before, as they have time to sit and talk to each other. UNRWA's staff members were also exchanging roles aiming at providing the service." Psychosocial counselor_Jabalia 4.

"Moral support yes and this support really gave us a big push forward to continue working. Our administration at first announced if anyone of you is sick or afraid of getting sick from this disease, he/she may not work and can simply stay at home. But we insisted on working, since this is a humanitarian act that we cannot leave. The administration was very supportive as the line manager and the director of our department were in contact with us. Especially our department manager who was constantly communicating with us, and this indicates his sincerity at work. Personally, when I spoke to him one day and informed him that my car at work was broken and I could not work in this way, he understood and responded to me in an hour as he lent me his car which he uses for work and gave it to me so that I could continue my work to the fullest." RSS_Jabalia 3.

Theme 2: determinants which aggravated COVID-19
Interviewed participants mentioned how the Gaza strip is densely populated and houses are overcrowded.

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Also, several interviewees talked about the lack of proper services and infrastructure within the Strip. Lack of ventilation, poor lighting, unreliable electrical supply, and poor internet connectivity were examples of environmental conditions that were mentioned in the interviews to affect people's wellbeing and health in general.

Interviewed UNRWA staff mentioned that over-crowdedness favours virus transmission, worsens mental health, especially during lockdown episodes, and poses a health risk for elderly and NCD patients who cannot distance themselves away from other people.

> *"It [COVID-19] will be spread in a very fast way because of the highly populated areas, we are talking about the camps. I don't know if you know how it is in the refugee camps in Gaza, it is very crowded. And if we are talking about physical distancing, it will not be possible at all. Even in the same house, you will find 10- 12 persons living in a small space".* Gaza Field Office staff 3.

> *"We have an abnormal population density in Gaza Strip. For example, we work in camps, and houses are very narrow, in one house there are ten or eleven people, or more, so imagine how difficult to quarantine people in houses like these. Thus, you find people standing at the doors of their houses. The houses are bad and there is not enough electricity, but anyway this is the bitter reality"* RSS- Rafah 3.

> *"The houses are small and in poor condition, there is no ventilation or electricity".* Gaza Field Office staff 4.

These hard living conditions were also reported by UNRWA staff, especially females, as an obstacle to carry out work-related tasks and a source of stress. Female staff members reported challenges related to juggling their work with housework, childcare and attending to family needs while performing work-related tasks using unreliable internet connection.

> *"It greatly affected me to stay at home, because I have small children and sometimes, they are not able to provide me the right atmosphere for work. Just working at home has affected me a lot, and sometimes I get busy with some guests and family, and at the same time my manager calls me asking me for a specific task to fulfill. This affects me and causes a big tension on me. Often when I go to my family house, I take my laptop or my cell phone with me because I might need it to work there. Despite all of this, we were implementing what was asked of us,*

> *but at the expense of my time, my children and my home".* RSS_Jabalia 2.

> *"We were doing our job online via the Internet despite the frequent internet cuts, and it was very difficult for us".* RSS- Rafah 4.

Theme 3: determinants with bi-directional relationship with COVID-19

Almost all participants, UNRWA staff and community members alike, mentioned that the Palestinians in Gaza were heavily affected economically during the pandemic. The additional expenses that UNRWA endured due to the pandemic stretched its limited resources and threatened staff's salaries.

> *"Recently, the Director of UNRWA operations in Gaza, said two days ago, that they will give the staff half a salary next month, due to UNRWA's limited resources. He also requested the support of donors and European countries to enable UNRWA to continue providing its services to citizens."* Nurse_Rafah 7.

The Palestinian community in general suffered economically as many people in Gaza rely on daily-pay. This has pushed Palestinians to break the lockdown rules in order to go to work and provide to their families. Due to the economic hardship, people had to prioritise spending, favouring buying food over face masks, for instance. Such practices increased the stress level amongst people as they struggled to make ends meet and they knew they were susceptible to contract and/or spread the virus.

> *"Many people will die of hunger if they do not go to work. For example, if there is closure in Gaza including the markets, people cannot stay at home, as they want to work and gain money for their families. As a result, people break the lockdown measures because it is difficult to stay at home, and people don't have any other sources of income but their jobs... The economic situation is very difficult, some people do not have the price of the face masks, and there are some people who are taking antidepressants and antipsychotic medications to get through this period"* Community member_Jabalia 1.

Unemployment rate was already high in Gaza prior to the pandemic. Many employers closed their businesses during the pandemic, increasing joblessness even further and adding to the psychological challenges that people were going through. Even at UNRWA, daily-paid staff were threatened to lose their jobs or go through extended periods of reduced income especially at the beginning

of the pandemic when services got disrupted and before allocating these staff into new tasks. For example, daily-paid staff were allocated later on to help in food parcel distribution and medicine home-delivery; both of which responses were implemented later on into the pandemic.

"Yes, sure, it [employment] was greatly affected, and it is known that unemployment is high. The situation during the pandemic is abnormal, and the general situation got worse, as many factories and shops have closed and suspended the work of their employees. This actually has worsened the psychological wellbeing of people as unemployment rate increased. "RSS_Jabalia 3.

"Gaza was significantly affected by UNRWA's economic crisis... This also has affected the staff efficiency, in a way or another because there is no job security.... the daily-paid staff was affected in the beginning of the pandemic, as some of them have been laid off". RSS- Rafah 5.

Theme 4: UNRWA's response strategies
Interview data showed that, during the pandemic, UNRWA-Gaza deployed response strategies to counteract the impact of some of the social, economic and health-related stressors. With a focus on preventing COVID-19 transmission, UNRWA maintained access to health services by reconfiguring service provision; establishing medical points and introducing telemedicine services. Vulnerable groups, at risk of contracting the virus and with higher likelihood of displaying severe COVID-19 symptoms, were protected even further, as UNRWA introduced flexible working schedules for staff and introduced home-delivery of life-saving medications to prevent interruption of treatment. Patients with mental health illnesses were prioritised; allowing face-to-face interventions for some cases and establishing a hotline service. At the economic level, UNRWA rearranged the method of food parcel distribution in a way that protected staff and people from contracting the virus. Participants reported mixed views around all these response strategies. In general, interviewees said that strategies were generally effective yet, not enough to protect all segments of the society and meet their needs.

f) Enhancing safe access to health care

Early on in the pandemic, UNRWA Gaza revised its mode of service delivery to continue providing health care to its beneficiaries. Social distancing was ensured inside the health centres and stations for sterilizing the hands were put in place. Later on, UNRWA established a triage system whereby schools were converted into medical points that accepted patients presenting to the clinic with respiratory symptoms. Interviewed UNRWA staff and community members reported positive feedback, saying that community members showed a great deal of acceptance of this new mode of service delivery.

UNRWA introduced a telemedicine service in order to limit foot traffic at health centres, thereby limiting the spread of the virus amongst community members and staff. One community member from Jabalia said that UNRWA provided the Clinic Friend's Committee with phone numbers and names of physicians that the committee in turn distributed to community members. Patients could call, for free, UNRWA health centres and receive consultation over the phone and then collect the medicine from the health centre later on. Those that required urgent medical attention were also visited at home by emergency teams.

"...for the treatment of children or adults, there was a free number that they [UNRWA] gave it to everyone. In this regard, we held a meeting in the committee and we took these free numbers and sent them to social media and every other means that can reach patients, so that people know that there is a free number for the clinic, and through this number a person can call UNRWA and tell them about their illness and then provide them with treatment. Names of doctors were also listed to be in contact with people, and each doctor goes to the patient. Of course, this is for emergency cases". Community member_Jabalia 1.

The same participant however said that people complained that no one was answering their calls or the line was busy most of the time. Another participant from the same camp had the impression that the service provided by the emergency teams did not last for long.

"At the beginning, the visit to the patient's house operated for a week after that UNRWA stopped this method. UNRWA was not at the level required. UNRWA is expected to provide support and relief greater than that." Community member_Jabalia 2.

Another participant from the UNRWA clinic's friends committee had the perception that the majority of community members preferred seeing their care provider in person over a remote service.

Providing health services to all segments of the society seemed to be disrupted for at least a month after the community transmission of the virus in late August 2020. A psychosocial worker from Jabalia camp said that she received complaints from patients for not receiving proper health care. Particularly during

the transmission period, UNRWA prioritized NCD patients over other patient categories labelled as less urgent cases.

"Because my work involves communicating with people, I receive several complaints. You know, patients are not limited to NCDs and pregnant women; we have many patients with other diseases who must come to the clinic to get the necessary treatment. In my opinion, I think it would have been better, if we applied work shifts, three shifts instead of two, to enable all patients to come to the clinic to get their treatment or to enable all patients, not just NCDs patients to access the telemedicine service, like patients who need general medications, like ointments and flu medicines. There is also a category requires care, like those who need to change wound or surgical dressings." Psychosocial counselor_Jabalia4.

g) Protecting vulnerable groups

Vulnerable groups, known to be at a greater risk of severe and fatal COVID-19 disease, such as older adults and patients with chronic conditions, were supported by UNRWA. Measures to prevent both groups from contracting the virus were put in place, thus lessening the stress level experienced amongst these groups; For example, staff members who are either elderly with respiratory disease and/or have NCDs had the freedom to work from home during the community transmission period of the virus.

"(during community transmission) UNRWA was very flexible with both staff with chronic diseases such as NCDs and elderly staff members. These two groups can stay home, if they want to" Nurse_Rafah 7.

Patients with NCDs were asked to stay at home and had their medications delivered to their place of residence instead of attending in person to the health centres, not only to protect them from contracting the virus, but to ensure that there was no interruption of treatment.

"UNRWA was very supportive during the pandemic. I am only 45 years old and UNRWA started delivering my medication for hypertension ever since the pandemic started. UNRWA staff were putting themselves under risk in order to deliver medicine to us at home. The delivery was prompt and everyone received his medications on time" Community member_ Jabalia 1.

"They [NCD patients] stopped attending the clinic

on the 24th of August. Before this period, not all NCD patients can come to the clinic, only those aged 42 or below and who are in a good health. Currently, we do not allow any of them to attend the clinic again, alternatively we are following them up over the phone... Also we are delivering medication packages to NCD patients' homes in order to reduce the number of patients coming to the clinic." Psychosocial counselor_Jabalia 4.

It was reported however that the care pathway for NCD patients was disrupted during the pandemic. Exit permits outside the Strip became more difficult to obtain and Gazans with chronic conditions, mainly cancer patients, who are in need of medical treatments outside the Strip, faced dramatic limitations in accessing proper care.

"In terms of health, some patients have been affected, like cancer patients who want to get treatment outside Gaza, for example in Jerusalem, and that requires complex coordination with the concerned authorities" Nurse_Rafah 7.

Medical visits became less frequent due to UNRWA's scaling down of non-urgent visits. Also, primary and secondary preventive measures of NCDs were halted. This disruption in the care process suggests a potential worsening of the chronic conditions along with the mental wellbeing of the patients.

"...In general, we suspended all the regular medical tests for patients with chronic diseases." Nurse_ Rafah 7

h) Improvising a new method for the delivery of food parcels

UNRWA Relief and Social Services Department usually provides food parcels for registered refugees who qualify according to a certain vulnerability checklist. During the pandemic, UNRWA continued to distribute food parcels but had to improvise a new distribution method that involves minimum contact in order to protect the community as well as the staff. In order to do that, emergency teams were formed that included staff working in different departments. The reconfiguration of the distribution process incurred delays and that negatively affected the people who urgently needed such assistance. The perception of delay in distributing food parcels was shared by UNRWA staff and community members.

"There was also a delay in delivering subsidies (coupons every 3 months) to people for certain reason, as I got to know. Accordingly, this was a

problem for people, who depend heavily on such coupons… people live under very difficult circumstances". RSS- Rafah 5.

"The biggest problem is the food basket (coupon). This assistance has stopped for months, and some people are completely dependent on it…There is a delay in providing health services and food aid." Community member_ Rafah 2.

A community leader in Jabalia complained that some of the distributed food parcels were expired or close to their expiration date. Another community member who had over 25 years' experience in volunteer work and was a member in Rafah said that the quantity of the food distributed was not enough; a view that was contradicted by another community leader in Jabalia, who is also a member of UNRWA Clinic Friends committee.

"… UNRWA increased the quantities of food parcels and delivered medicines, and any request that people asked for from UNRWA was met. This is what I saw in reality." Community member_ Jabalia 1

i)   Prioritizing mental health services

In general, all participants agreed that the pandemic was burdensome for Palestinians and had an adverse effect on their mental health. Protection and suicide cases were dealt with as emergency cases and were therefore granted permission to receive counselling face-to-face and were also referred to other departments or entities, depending on the severity of the case and the needs of the patient. The issue of specialists' availability was voiced by few participants as a longstanding problem that dated from before the inception of the pandemic.

"… at the beginning of the pandemic, Gaza registered a large number of [mental health] cases… we coordinated with doctors and triage nurses that urgent cases, such as suicide and protection cases must come to the clinic because they require direct intervention… Before the pandemic, unfortunately there were only one or two psychiatrists to deal with the cases having mental issues in all of UNRWA's clinics in Gaza. This psychiatrist will come to the clinic once or twice a month. We receive many cases that require psychiatrist consultation and therefore, we requested to have at least one psychiatrist at the clinic. May be our doctors can prescribe psychotic medications, but some cases require the intervention of a psychiatrist." Psychosocial counsellor_ Rafah 5.

Prior to the pandemic, Palestinians in Gaza relied almost entirely on the services and aid provided by UNRWA as many residents are refugees themselves.

"The percentage of refugees in Gaza Strip is very huge, and UNRWA represents the main pillar on which they depend on, especially in light of the conditions in which Gaza Strip lives such as: siege, poverty, power cuts, division and many problems." Community member- Rafah 2.

In the wake of the pandemic, UNRWA has done the best it can, utilizing its limited resources, to meet the increased needs, including mental health needs, of Gazans.

"We have circulated our numbers, so that refugees can contact us whenever they need a consultation or help in this regard [MHPSS]. We divided Gaza into five areas; North Gaza, city of Gaza, middle of Gaza, old city of Gaza and Rafah and for each area, there is a psychosocial counsellor, so any refugee has any inquiry or concerns can contact them". Head of Health Center_ Rafah 1.

"We received many protection and violence cases in June and July and we have no time to handle all of them." Psychosocial counselor_Jabalia 4.

Both psychosocial counsellors in Rafah and Jabalia camps mentioned that their work scope included providing counselling and awareness to patients presenting with respiratory symptoms (including those identified as infected with COVID-19), to NCD patients, and to other beneficiaries who visited the clinic up until the period of virus transmission, when all services became delivered over the phone. Staff support was also provided by psychosocial counsellors.

"… You know, during the lockdown, all the family members were staying at home and this definitely had increased family problems, violence, GBV and suicides… The psychosocial workers also started in March to provide support and conduct self-care and stress relieving sessions for all staff members including cleaners and clerks". Gaza Field Office staff 5.

UNRWA's response in Gaza, however, was not enough to alleviate the economic and social instability. Certain population groups were perceived to have been more acutely disadvantaged by the pandemic more than others. Increased violence, anxieties and worries were observed amongst women, children and workers in the informal sector and their mental health needs were not entirely met.

"… I say we're relatively limited in what we can do, you've got too many people in Gaza with PTSD given what they've gone through in the last 20 years, so we have to be realistic about our ability. We weren't able to meet the needs before this. So we're less equipped to meet increased needs during it. They are massive needs and we do what we can, but we were under no illusions." Headquarter staff 3.

UNRWA adopted a hotline service for people to seek assistance during the crisis. That included a special hotline for GBV cases whereby women call and seek help. GVB victims are then referred to the Protection Department for further assistance.

"… we have a hotline to provide social support and a hotline for GBV cases; women who are subjected to gender-based violence. We were receiving calls from people who exposed to gender-based violence and such cases were transferred to the protection department. We installed the hotline to enable people to contact us to get our guidance and help, even if we can't reach them." Headquarter staff_2.

Discussion

Recent evidence shows that the Coronavirus pandemic has halted for some time the advancement towards achieving the SDGs by 2030 [32, 33]. The UN Department of Economic and Social Affairs published a report the SDG Report 2020 during the UN's 75th anniversary. In this report, the UN mentioned that the pandemic has attenuated the implementation towards many SDGs and worse, in some cases, it has turned back decades of progress. Populations most affected by the pandemic are world's poorest and most vulnerable populations such as people in the informal economy, children, older people, people with disabilities, migrants and refugees [34].

Looking through the lens of social determinants of mental health (Fig. 1), the current study contributes to our understanding of the pandemic's effect on refugees, notably in the exceptional setting of Gaza; a setting marked by a high and longstanding levels of instability at the political, social and economic fronts. In reference to the framework (Fig. 1), we notice that the pandemic and/or its corresponding protective measures exerted an adverse effect on mental health using multiple pathways. First, the pandemic prompted an interaction between different factors from different domains thus, contributing to ill mental health. For example, interview findings showed that the stay-at-home orders and closure of non-essential businesses increased financial hardships and led to increased levels of unemployment in Gaza, which in turn, increased social disparities and hindered people's

ability to provide the means for their children to access online schooling thus, adversely affecting the mental health of children and prompting actions of violence and aggressiveness amongst school-aged children. Second, the pandemic exerted a direct impact on social determinants in all domains leading to adverse consequences on mental health. For example, interview findings showed that the pandemic increased the incidence of GBV against women. Evidence from the literature showed that levels of GBV and domestic violence have increased in the occupied Palestinian territory during the pandemic [5, 35]. In November 2020, UNRWA reported an increase in Gender-Based violence (GBV) cases against women and girls during the pandemic, in all fields of operation. The severity of physical assaults and psychological abuse reported by women was found to be greater than usual and was found to be associated with lockdown measures and movement restrictions [36]. Another observation on the interaction between the pandemic and social determinants pertain to the pandemic's effect on factors related to the Social and Cultural domain (Fig. 1). Social cohesion, the sense of shared identity and the support received from the social circle are elements that are usually found in the Gazan community and Gazans often draw upon when facing and managing threats [37]. In the current study, the presence of a supportive work environment, reported by some of the UNRWA staff, and the act of giving help to fellow community members, reported by some UNRWA staff and community members, suggests that the presence of such a positive social support could have positive psychological consequences [38]. However, the nature of the threat that imposed social and physical distancing eroded to a great extent the social cohesion and support that Gazans usually rely on during crisis. Stigma and social isolation, primarily experienced by the COVID-19 survivors and their families, suggests a negative impact on the physical, mental, and emotional wellbeing amongst this group [39, 40] and could worsen the psychological wellbeing especially for those who had already mental health difficulties prior to the pandemic. A recent study in occupied Palestine found that, in a social distancing era, close social support becomes vital for mental health and exerts a stronger contribution to positive wellbeing than the general sense of belonging to a community and trust in government [41].

Refugee communities worldwide experienced stressors similar to those experienced by refugees in Gaza, such as increased GBV, financial strain, food insecurity, and poor access to education and were all found to exert a negative impact on mental health during the pandemic [42–45]. Protective measures, such as physical distancing, were found to be very challenging, if not impossible, for refugees living in different encampments across the world

[46]. For Gazans, physical distancing was practically impossible, especially those living in overly populated camps. According to the WHO head of office for the occupied Palestinian territory (oPt), Gaza remains a very challenging environment making a variety of measures to curb the spread of the COVID-19 virus were unattainable in Gaza. This is due to over-crowdedness and shortages in everything, including electricity, medications and other supplies [47]. Also, the poor socioeconomic status of the majority of Gazans and their reliance on daily pay mostly made the enforcement of long durations of lockdown very challenging and unacceptable by the community. The proximity of households, lack of resources, including financial resources, and lack of jobs and savings were challenges identified in another study on internally displaced populations (IDPs) of Mali. Unlike in Gaza, the government of Mali, with the help of other humanitarian actors, responded by providing financial aid and creating some income-generating activities [48]. The absence of an appropriate mechanism to ease the economic pressure on Gazans was particularly burdensome and fuelled a climate of uncertainty. As a result, lockdown measures in Gaza were met with protests [5].

The Israeli forces seized the opportunity of the pandemic to tighten the blockade even further. This has further contributed to the worsening of the economic situation in Gaza and undermined the living condition of Gaza's 2 million residents. Between March 2020–September 2021, Israel imposed a "Coronavirus closure" at the Erez Crossing, the only crossing point between Israel and Gaza, thus restricting the movement of people and goods even further. Except for a small number of patients in need for a critical medical treatment, movement of people was completely halted including those who travel for work-related purposes [49]. The same report mentioned that by March 2021, the number of people granted permission to cross the Erez Crossing did not exceed 6% of what was allowed the year before. Previous data published by the WHO indicated that about 9000 patients annually need to obtain Israeli exit permits to receive medical treatments outside the Strip, a quarter of this number is allocated to cancer patients [50]. Obstructing the freedom of movement for patients impedes access to proper health care and poses devastating consequences on patients with chronic conditions, especially cancer patients, and on the general health and wellbeing of Gaza residents [51].

Findings from this study were in agreement with those published Hammoudeh et al. [5]. In particular, women, children and daily workers were reported to be the most disadvantaged population groups. The increased financial strain, violence especially GBV, food insecurity and other stressors that were secondary to the pandemic serve as a stark reminder of the need to broaden the public health response beyond disease prevention to include social and economic interventions to improve people's mental health and to decrease their vulnerability to future shocks. The fact that mental health disorders are socially determined means that improving access to mental health services without addressing the social determinants behind mental illness will not reduce the global burden of these disorders. Therefore, we recommend the implementation of multi-sectoral strategies and provision of comprehensive primary care that address social determinants. At the level of UNRWA, further collaboration between the Health Programme and the Relief and Social Services Programme is encouraged. For instance, including social workers in mental health training, taking place at the Health Programme, will enable social workers in identifying people with increased mental health needs and refer them back to the health centers for treatment. Another example would be to develop a brief, validated screening instrument for social determinants of mental health and incorporating it into patients' medical records. This would help health professionals in looking further upstream on the conditions that predispose individuals to mental health conditions and take action long before they occur [52]. Assessment of the social determinants, particularly during times of prolonged crises and emergencies such as COVID-19 pandemic, will aid in the identification of beneficiaries that have become entitled to receive assistance. Finally, UNRWA is encouraged to establish partnerships with local agencies and community groups to implement social prescribing. Social prescribing is another strategy that is found to be an effective method for addressing the social determinants of mental health [52]. Social prescribing encourages individuals to take responsibility for their health and well-being by promoting people's active participation in their local communities and statutory agencies for practical and emotional assistance. Being a member of a community group and receiving peer support reduces emotions of loneliness and anxiety. Therefore, social prescribing helps people to be more physically active, improves their mental health, improves their quality of life and lessens the burden of chronic diseases [53]. It assists individuals in discovering a new sense of purpose by engaging in activities they may not have tried before, such as the arts, cultural activities, walking, running, gardening, singing, etc. [54]. Research evidence reveals that social prescribing is also beneficial for the health care system as it reduces a person's GP consultations by an average of 28% [55].

UNRWA's lack of adequate financial support by the international donors posed a new challenge to continue providing essential services, while the refugee needs increased simultaneously due to the pandemic. This

has led to the disruption of GBV services, for example, between March and April 2020 [36]. During the pandemic, UNRWA resorted to telemedicine to maintain patient care, reduce foot traffic at the health centres and the subsequent exposure to the virus, and to ensure continuation of treatment. Evidence in favour of telemedicine to manage chronic diseases isn't conclusive. A global survey, addressed to 202 health professional in 47 countries, to evaluate the effect of COVID-19 pandemic on the routine care for chronic diseases found that diabetes, chronic obstructive pulmonary disease and hypertension patients were the most affected by the reduction in face-to-face care and inability to manage risk factors especially when morbidities co-exist [56]. Stronger evidence from studies conducted worldwide showed that the use of telemedicine could be helpful in patients' assessment, disease diagnosis and treatment. There is evidence that patients with diabetes, cancer, transplanted kidney and those who needed prenatal care were managed using telemedicine and patients reported general satisfaction using this mode of service delivery [57–60]. As such, telemedicine has the opportunity to provide continuous follow-up care for NCD patients and other patients, whether during a pandemic or not. However, it remains important to prioritise outpatient visits based on disease severity in order to avoid non-COVID-19-related mortality and morbidity [61, 62]. Some barriers related to patients' privacy and quality of care have been reported. As a result, more research is needed to assess this method in terms of its efficacy and quality of care [63]. Another concern is the fact that the use of such mode of service delivery could be impractical or not regularly feasible in settings that lack resources and/or have weak infrastructure [64]. Finally, telehealth is useful in overcoming barriers to access such as transportation and time spent commuting yet, it can be intimidating and confusing for older adults and other marginalized communities such as low-income households and people with disabilities [65]. As pointed out by Tran et al., telemedicine is not merely the transition from face-to-face to virtual service delivery. A successful deployment of telemedicine requires having health professionals who are trained at the personal and professional level to provide virtual care [66, 67].

In the case of mental health services, UNRWA restricted health visits to emergency situations only and resorted mainly to mental telehealth services and counselling over the phone for people reporting mental distress and for COVID-19 infected individuals. Evidence has shown that refugee populations, people with poor socio-economic status and those with previously diagnosed PTSD and depression have an increased risk for mental disorders during the pandemic, including the worsening of PTSD and depression [68, 69].

Eighty percent of health professionals in the global survey, mentioned earlier, reported a decline in the mental health status of their NCD patients [56]. During the pandemic, teletherapy became popular and health systems, such as UNRWA, were required to revamp their modes of service provision and deploy teletherapy on a short notice. Adequate training and workflow efficiency are practical elements that need to be present, especially in the absence of a framework to delivering mental health care through teletherapy [70]. In the current study, interviewed psychosocial workers mentioned that remote mental health services, although is a great tool during emergencies yet, it cannot permanently replace face-to-face therapy. This is in agreement with other studies that showed that the absence of non-verbal communication between the therapist and the client in teletherapy limits the ability to connect, build rapport and establish trust [71]. Moreover, permanently replacing face-to-face therapy with remote therapy would add to the feelings of loneliness and isolation and deteriorate mental health even further [72]. One study that was conducted prior to the pandemic found that the use of a hybrid approach, a combination of an online and face-to-face therapy, improved the promptness by which patients could be seen (timeliness of care) and the likelihood patients attend outpatient visits [73]. Perhaps a similar model could be useful as a long-term solution.

Based on previous research conducted prior to the pandemic, a remote interdisciplinary approach that involved social workers and psychologists was found to be effective and helpful for people in distress [74, 75]. Since the current pandemic was shown to affect people's mental and physical health needs and alter their social circumstances, policymakers and health care providers are urged to consider setting up and promoting programs that operate remotely based on existing collaborative care models [76]. Such programs are useful in addressing patients' changing mental health needs while targeting their evolving medical and social circumstances.

Strengths and limitations
First, the identified themes reflect the opinion of interviewed participants and cannot be generalized; however, the daily stressors and difficulties encountered by Palestine refugees in this study were very similar to the challenges encountered by other refugee communities elsewhere. Therefore, the results of our study could be transferable to other contexts with similar characteristics. Second, interviews were conducted remotely as travel restrictions were put in place in

order to minimize the transmission of the Virus. It is well-known that building rapport with participants is an essential component for a successful interview and a delicate process whereby body language and non-verbal cues are important. For many participants, however, remote interviewing provided them with a space to express themselves, the personal stressors they were going through and disclose their emotions. Third, the poor internet infrastructure in Gaza often resulted in interruptions during the interviews. All interviews that were interrupted were rescheduled to another day so that all consenting interviewees were given the chance to participate. Finally, interviews were carried out either via MS Teams or as WhatsApp calls. Allowing the candidate to choose to connect via diverse mediums enhanced recruitment and made participation possible for those with low computer literacy.

Conclusion

Palestinians have historically lived lives of hardship- surviving in a context of occupation, chronic adversity, lack of resources and limited infrastructure. Similar to other refugee communities, the impact of the pandemic and its corresponding public health responses on Gazan's health and daily life was significant. Due to scarce resources, the Gazan community had fewer means to withstand the economic and social repercussions of a pandemic. The pandemic served as a stark reminder of the need to broaden the public health response beyond disease prevention to address social determinants in order to improve people's health and decrease their vulnerability to future shocks. The implementation of public health measures, such as extended periods of lockdown and physical distancing, were economically and socially not feasible. Strategies enacted by UNRWA, such as the triage system and home-delivery of medications, were welcomed by the community. Food support, in-kind assistance, access to online education were inadequately provided to protect all segments of the society. Telemedicine and mental tele-therapy need to be evaluated if they were to continue being adopted post-pandemic and/or for better preparation for a similar crisis; the use of a hybrid approach, a combination of an online and face-to-face therapy, could be useful as a long-term solution.

Abbreviations

CRIES-13: Children's Revised Impact of Events Scale-13; GBV: Gender-based violence; HQ: Headquarters; IDPs: Internally displaced populations; MHPSS: Mental health and psycho-social support; NCDs: Non-communicable diseases; oPt: occupied Palestinian territory; PTSD: Post-traumatic stress disorder; QMU: Queen Margaret University; SDGs: Sustainable Development Goals; SRM: Security and Risk Management; UNHCR: The United Nations High Commissioner for Refugees; UNRWA: The United Nations for the Relief and Works Agency in the Near East.

Supplementary Information

> **Additional file 1.**

Authors' contributions
KD, SW, GL, and ZJ conceived and designed the study and actively liaised with SA, ZK, SB, and MH for fine tuning before the implementation phase. SB initiated first contact with UNRWA staff and community leaders and members at Rafah and Jabalia camps and explained all procedures of informed consent. ZK facilitated the recruitment of UNRWA staff in Gaza. ZJ conducted all interviews and MW and FF translated and transcribed interview data under the supervision of ZJ. KD, GL and ZJ were in charge of data analysis. All authors contributed to the drafting and review of this manuscript. KD, SW, GL and ZJ had access to all data generated in this study. All authors read and approved the final version of this manuscript and the corresponding author, ZJ, had the final responsibility to submit this manuscript.

Availability of data and materials
Interview recordings and transcriptions that were collected and analysed during the current study are not publicly available in order to protect respondents' confidentiality and to safeguard personal or sensitive information that the respondents might not want to publicly disclose. Data are however available from the corresponding author upon reasonable request and with permission of UNRWA HQ.

Declarations

Ethics approval and consent to participate
All methods were carried out in accordance with relevant guidelines and regulations including the Declaration of Helsinki. We received ethical approval from Queen Margaret University (QMU) and UNRWA ethics committees. We sought informed consent from participants prior to enrolling them to the study. We assured participants that they have the right to withdraw from the study at any time and that participation did not entail rewards and will not affect their relationship to UNRWA. For interviews that were audio-recorded, recordings were done on a digital voice recorder, with interviews being transferred to secure (QMU) storage immediately post completion; if notes were taken during interviews, these were transferred to or created in Microsoft Word and immediately also transferred to QMU storage post completion of interviews. Interview audio on the device was deleted post transfer, and any physical notes were destroyed post transfer.

Consent for publication
Not applicable.

Competing interests
The authors declare that they have no competing interests.

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