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Digitalized Psychosocial Support in Education

Exploring the impact of the Happy Helping Hand app for displaced Syrian adolescents in Lebanon

August 2021

**Master's thesis in International Education and Development
Faculty of Education and International Studies (LUI)
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Acknowledgements

This master's project marks the end of my journey as a student in International Education and Development at Oslo Metropolitan University. This journey has been inspiring, educational, and not least, challenging. I was allowed to delve into the field I have a huge interest in, namely the education for displaced Syrian children and adolescents.

Hereby, I would like to express my gratitude to several people that contributed to making this thesis possible to complete. First and foremost, I would like to thank my two wonderful supervisors, Assoc. Prof. Lars Gule and Dr. Solfrid Raknes for the motivation, support, and guidance during my thesis. Thank you so much for your outstanding feedback, availability, openness, and enthusiasm all the way through.

Thanks to Innovation Norway for supporting the development and proof-of-concept studies of the Happy Helping Hand in Lebanon. Thanks to Midsund Rotary Club, Norway, for covering costs for implementing psychosocial support to adolescents in Lebanon in this study. Thanks to Multi Aid Programs (MAPs) Lebanon for collaboration on implementing the study. Thanks to the amazing teachers and PSS staff at MAPs for the collaboration. Thanks to the beautiful Syrian adolescents who participated in this research. Your input and perspectives were valuable for this study!

A warm thank goes to my beloved family, especially to my mom and dad, for keeping me in their prayers, and for the support, and love. I'm so lucky to have such a caring and supportive family! Thanks to my friends, I really appreciate your motivating messages and conversations.

Lastly and importantly, a warm thank goes to my dear and beloved husband, Ola Wam. Thank you for believing in me, encouraging me, and supporting me through my hard time. I appreciate your patience and tolerance. Thank you for all the help you provided me with this thesis. I couldn't have accomplished this work without you!

Alaa Munir Al-Khayat

Oslo, august 2021

Abstract

The civil war in Syria has resulted in 1.5 million Syrian displaced people living in Lebanon. About 40% are between the ages of five and seventeen, many of which suffer from a wide range of psychosocial problems. This has created a need for initiatives to provide mental health and psychosocial support (PSS). The use of digital technology has created unique opportunities to provide PSS to underserved populations. One such digital PSS initiative is the Happy Helping Hand (HH) intended to provide PSS in the education of displaced Syrian adolescents in Lebanon. The HH is a digital cognitive behavioral-based (CB-based) tool that aims to help adolescents manage their emotions and understand how to problem-solve through a digital game app.

Our research has examined how the Happy Helping Hand (HH) contribute as a digital psychosocial support intervention in improving well-being and emotional problem-solving skills in adolescents. We therefore examined how the HH affected the well-being and emotional problem-solving skills of a group of displaced Syrian adolescents in Lebanon. We also explored the adolescents' and teachers and PSS staff's experiences of the usefulness and practicability of the HH app.

We employed a mixed-method research approach by combining qualitative and quantitative methods for data collection. A statistical analysis was conducted of the adolescents' well-being both before (pre-test) and after (post-test) the HH intervention, as well as measuring their experiences of the usefulness of the intervention. In addition, three semi-structured interviews were conducted with adolescents (divided by gender), and teachers and PSS staff facilitating the intervention, exploring issues such as emotional coping and problem-solving skills, and their experiences using the HH app.

We found that the Happy Helping Hand positively affected Syrian displaced adolescents' well-being. Our results are in line with research showing that digital PSS interventions can increase emotional problem-solving skills by improving skills in emotional self-management, decision-making, and help-seeking. The Happy Helping Hand was considered to be easy to use, engaging, relevant, crucial, and useful. Nevertheless, digital PSS interventions should maintain cultural sensitivity and adapt itself to the relevant cultural context but should do so without compromising on efficacy nor undermine international rules, norms, and

standards. The well-being of the Syrian adolescents is adversely affected by multiple other stressors, such as war trauma, poverty, and tough living conditions. Importantly, more than digital PSS is needed to ensure wellbeing and healthy lives for all refugees.

Abbreviations

PF	The Psychological First Aid
HH	The Happy Helping Hand
MAPs	Multi Aid Programs
CB	Cognitive Behavioral
CBT	Cognitive Behavioral Therapy
PSS	Psychosocial Support
SEL	Social and Emotional Learning
SEM	The social-ecological model
SLT	Social Learning Theory
WHO	The World Health Organization
WHO-5	World Health Organization (Five) Well-Being Index
SPSS	Statistical Package for the Social Sciences

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1. Introduction

1.1 Background

The civil war in Syria has been going on since 2011 and has caused the death of hundreds of thousands of people and the displacement of millions. According to UNHCR, the civil war has produced 5.5 million Syrian refugees, nearly 1.5 million of which reside in Lebanon. Children between the ages of five and seventeen constitute 40% of the displaced Syrian population in Lebanon (UNHCR, 2020).

The International Organization for Migration defines displacement as “the movement of persons who have been forced or obliged to flee or to leave their homes or places of habitual residence, in particular as a result of or in order to avoid the effects of armed conflict, situations of generalized violence, violations of human rights or natural or human-made disasters” (International Organization for Migration (IOM), 2019). A ‘*displaced*’ person is, therefore, a person affected by displacement. In this paper, I will use the definition above for the term ‘displacement’, with the resulting definition for ‘displaced’ person.

The conflict in Syria has had a significant impact on Lebanon’s social development and economic growth. It has contributed to the country’s existing economic crisis and increased levels of poverty and humanitarian needs. Data shows that more than half of the displaced Syrians in Lebanon live in extreme poverty, and over three quarters live below the poverty line. Moreover, the situation has also increased social tensions, with job competition and access to services being among the primary drivers of tension at the local level (Government of Lebanon & United Nations, 2020).

At the current time, Lebanon is facing one of its most critical times since the civil war. The socioeconomic conditions have turned dire because of COVID-19, especially for displaced Syrians living in Lebanon. The displaced Syrian people were already suffering from difficult living conditions, and the COVID-19 pandemic has made it worse. People are facing the risk of starvation and a rapidly deteriorating human rights situation due to loss of income, housing, food, and essential living services (The World Bank, 2021). The conditions imposed due to COVID-19 are affecting the education of displaced Syrian children and adolescents, as well as Lebanese and Palestinian citizens living in Lebanon. Because of the closure of

schools, lack of services, and the economic conditions of displaced Syrian people, the students are struggling to get access to learning recourses (Save the Save the Children, 2020).

The conflict in Syria has caused tremendous suffering, not least to its children, both physically and psychologically. Those children have experienced a brutal first-hand conflict, displacement, violence, and loss of close family members and friends (UNHCR, 2013), in addition to living in extreme poverty in their current situation. These factors and the effect of such horrific experiences have increased levels of mental health problems and psychosocial distress (Hassan et al., 2015).

According to the UNHCR report ‘Culture, Context and the Mental Health and Psychosocial Wellbeing of Syrians’ (2015) displaced Syrian children suffer from a wide range of psychosocial problems, including anxiety, withdrawal, and fearfulness (Hassan et al., 2015) Even though most refugees are resilient, the estimated prevalence of mental health disorders is one in five in post-war and conflict area populations (Charlson, Flaxman, Cornett, Whiteford, & Saxena, 2019)

There is evidence indicating that support from family, the community, and service providers helps reduce psychosocial distress among these children (Hassan et al., 2015). To deal with the mental health and psychosocial support needs of the displaced Syrian population in Lebanon, the Lebanese Ministry of Public Health, in partnership with the World Health Organization (WHO), the United Nations Children’s Fund (UNICEF), and International Medical Corps (IMC), established the National Mental Health Program (NMHP) to provide mental health care to all people living in Lebanon, including displaced Syrians (el Chammay, Richa, Naja, Fayyad, & Ammar, 2016).

In May 2015, NMHP launched the ‘Mental Health and Substance Use Strategy for Lebanon 2015–2020’. The charter recognizes the psychosocial support needs of the displaced Syrian population, setting up a mental health and psychosocial support task force to coordinate the mental health and psychosocial support interventions of the different actors responsible for the displaced Syrians. The charter also recognizes the role of schools in implementing psychosocial support initiatives, with one of the strategic objectives being to “*Integrate evidence-based mental health promotion and prevention into schools*” (Ministry of Puplic Ministry of Public Health, 2017).

Previous studies have found the importance of schools in providing psychosocial support (PSS) to children traumatized by war (Clarke-Habibi, 2019). Not only do schools provide affected children with a sense of normalcy, but school-based PSS initiatives also help to reduce the stigma associated with mental health issues (Mattingly, 2017). In a broad sense, PSS initiatives focus more comprehensively on the child's mental health and well-being, beyond just the physical and psychological, but also their role in the family, community, etc. (INEE, 2016).

The use of digital technology has created unique opportunities in mental health interventions. Digital technology provides a range of possibilities in assessing, tracking, and treating psychological problems and disorders, and they come in different formats and vary in content. Digital technology is likely to become a more common tool for psychosocial support and treatment of mental health disorders, not the least in the provision of mental health services for underserved groups like displaced Syrian children (Fairburn & Patel, 2017).

As mentioned above, the vast number of displaced Syrians in need of psychological treatments has presented a massive challenge to service providers, host governments, and civil society, with children being especially necessitous. With schools being critical in providing psychosocial support to displaced children, school-based digital technology tools, therefore, seem particularly relevant in addressing the psychosocial support needs of the vast number of displaced Syrian children and adolescents. One such school-based digital PSS initiative is the Happy Helping Hand application. The Happy Helping Hand is a cognitive behavioral-based tool that aims to help adolescents manage their emotions and understand how to problem-solve, not only for learning but for their healthy development. The Happy Helping Hand app has recently been implemented in the education of displaced Syrian adolescents in Lebanon by the Syrian NGO Multi Aid Programs (MAPs). The Happy Helping Hand game app and MAPs will be further described in the next chapter.

1.2 Purpose of the study

There are several reasons why this field of knowledge requires more study and research, and why it is essential to gain more knowledge about how digitalized psychosocial support in education affects displaced Syrian adolescents in Lebanon.

The research in this study seeks to examine the Happy Helping Hand app, which is a digitalized psychosocial support educational program that aims to facilitate gamified training in life skills and improves mental health literacy. Through the digital game, the users are supposed to develop emotional awareness and social and emotional problem-solving skills. The targeted group in this research is displaced Syrian adolescents living in Beqaa Valley in Lebanon, aged between 12 and 17, and enrolled in non-formal education provided by MAPs.

This study commences by exploring the concepts of psychosocial support in education, what it entails, and why psychosocial support interventions are important for displaced Syrian adolescents who live in Lebanon. Second, the study explores the concept of psychological well-being and the factors that are considered to affect adolescents' well-being. Third, the study further explores the concept of emotional problem-solving skills as one of the life skills provided by social and emotional learning initiatives. In particular, the research project focuses on examining whether the Happy Helping Hand app, when used as a PSS group intervention led by teachers, improves adolescents' well-being, whether Syrian adolescents experience any benefits of the app, whether the app increases the awareness around mental health problems, and whether it gives the targeted group of adolescents the ability to express their emotions and to solve the challenges they encounter in their everyday life situations.

The research questions also address the perspective of 'user involvement' of adolescents who play the game and teachers involved in the educational situation by examining the feasibility and usefulness of the app. Thus, it provides us with insight into how teachers or PSS staff experience the game app and the challenges addressed when implementing the app in a whole classroom environment. Furthermore, this study examines if targeted displaced Syrian adolescents consider the game app relevant and useful for other adolescents.

1.3 Research questions

The study aims to explore the Happy Helping Hand app as a digital psychosocial support program in education and emotional problem-solving skills and how important such interventions are for displaced Syrian adolescents who live in Lebanon. Accordingly, the study will contain a more specific research question followed by four sub-questions:

Does the Happy Helping Hand app contribute as a digital psychosocial support tool in improving well-being and emotional problem-solving skills in adolescents?

- *How has the app affected well-being among displaced Syrian adolescents?*
- *What changes in adolescents' well-being were found from before to after the Happy Helping Hand intervention was implemented?*
- *What were adolescents and teachers/ PSS staff experience of how problem-solving skills among displaced Syrian adolescents are affected by the app?*
- *How did the adolescents and teachers/ PSS staff experience the usefulness and feasibility of the HH app?*

This research utilizes a mixed-method approach, in which a combination of focus group interviews and a survey are used to collect the empirical data from our targeted group of teachers/ PSS staff and displaced adolescents. This will be further described in *Chapter 4 Method*.

2. Literature review

This chapter presents various aspects of the literature that are relevant for this research. The literature presented is based on both psychological and pedagogical literature and is from both Norwegian and international documents. The literature presented below includes definitions of terms, explanations of concepts, a review of the previous research, and a description of tools. The purpose of this chapter is to provide the reader with comprehensive and necessary background knowledge about the investigated phenomena in this research. Moreover, the presented literature will also provide the researcher with the required knowledge that helps to answer the research question.

2.1 Mental health and psychosocial well-being

The World Health Organization defines mental health as a state of well-being in which an individual realizes their own abilities, can cope with the normal stresses of life, can work productively and is able to contribute to their community. This includes the development of emotions, thoughts, behaviors, social abilities, and the ability for independence, attachment, flexibility, and vitality. Mental health is crucial for quality of life, interpersonal relationships, and productivity (World Health Organization, 2018b).

The Inter-Agency Network for Education in Emergencies (INEE) defines the term “psychosocial” as the reciprocal relationship between a person’s intrapersonal psychology (such as thoughts, emotions, and behaviors) and interpersonal social experiences (such as relationships, community, social values, and culture) (INEE, 2016).

According to Richard Burns (2017), psychosocial well-being is a consolidation of subjective well-being (SWB) and psychological well-being (PWB). SWB relates to the individual’s subjective evaluation of their affective (emotional) states, and PWB relates to the individual’s psychological functioning on these intrapersonal and interpersonal dimensions. Therefore, Burns (2017) defines ‘psychosocial well-being’ as levels of positive functioning and the effects on these intrapersonal and interpersonal dimensions, including individuals’ subjective evaluations. Burns refers further to a set of indicators of psychosocial well-being from the European Social Survey (ESS) Well-being Module.

Table 1. Richard Burn's (2017) indicators for psychosocial well-being

	Intrapersonal	Interpersonal
Feeling (SWB)	Satisfaction	Belonging
	Positive affect	Social support
	Negative affect	Social recognition
	Optimism	
	Vitality	
	Self-esteem	
Functioning (PWB)	Autonomy	Social engagement
	Competence	Caring
	Interest in learning	Altruism
	Goal orientation	
	Sense of purpose	
	Resilience	

For the purpose of this study, psychosocial well-being is defined as the subjective measure of an individual's affective (emotional) and functional measure on dimensions related to themselves (intrapersonal) and to themselves in relation to their community. Based on the work of Richard Burns and INEE, the definition will be operationalized into the following indicators for the purpose of this study: positive affect, absence of negative affect, self-efficacy, social recognition, optimism, belonging, and self-management.

The impact of humanitarian crises on the psychology of the individual, family, and community can be serious by limiting people's ability to function and to cope with everyday life (Bangpan, Dickson, Felix, Hill, & Chiumento, 2017). Many displaced Syrian children and youth who fled war have experienced trauma and loss, with some having been caught in the crossfire. Children who experience war and violence are at a high risk of suffering from mental and psychological problems (Sirin & Rogers-Sirin, 2015).

Mental and psychosocial problems among displaced Syrian peoples in Lebanon demonstrate a wide range of emotional, cognitive, behavioral, and social problems (Hassan et al., 2015). A study that was conducted to assess the mental health and psychosocial needs of displaced Syrians in Lebanon showed that the most common emotional issues were grief, fear,

frustration, and anxiety. At the same time, the most common cognitive problems were loss of control, helplessness, and hopelessness (Hansen, Askgaard, & Abou-Diab, 2018). Another study conducted among displaced Syrian adolescents in Jordan showed that the most familiar psychosocial issues were stress, fear of war, lack of a sense of security, loneliness, isolation, and lack of a feeling of belonging (Khader, 2019).

Several factors are contributing to increasing emotional, behavioral, and social problems for displaced Syrian adolescents in Lebanon. A systematic review of factors influencing the well-being of displaced individuals showed that accommodation and family were among the factors affecting mental health and well-being (Hajak, Sardana, Verdeli, & Grimm, 2021). Accommodation, e.g., the quality of residence, housing issues, small areas, has been shown to have a great impact on well-being and increases psychological distress. The family and its functioning and relationship with each other also influences well-being. Another study addressed the notion that exposure to traumatic events, e.g., war memories and loss of relatives, was among the factors impacting a child's development and well-being (Dehnel, Dalky, Sudarsan, & Al-Delaimy, 2021). Finally, poverty increases the risk of mental health problems, and it is considered a causal factor that affects mental well-being (Elliott, 2016).

The Inter-Agency Standing Committee (IASC) (2007b), which is the longest-standing and highest-level humanitarian coordination forum of the UN system, has a priority in improving displaced individuals' mental health and psychosocial well-being. The World Health Organization Constitution (WHO) established everyone's right to the highest attainable standard of physical and mental health. For displaced individuals, this includes modifying regulatory and legal frameworks to address these people's specific health needs (World Health Organization, 2019). Hassan et al. (2015) highlight the importance of a multi-layered system of support in dealing with refugees' difficulties, ranging from food delivery, and covering other basic needs to clinical services given by mental health professionals. Further, they argue that this is necessary to promote the mental health and psychosocial well-being of Syrians affected by the crises.

Al Laham et al. (2020) mention that multiple studies have assessed the approach of mental health and factors influencing access to mental health services among the displaced Syrian population. A study conducted in a refugee camp in Jordan showed that stigma was one of the main barriers to seeking mental health services. The stigma of mental health is embedded

in its cultural and social context. People in Arab countries have a widely shared set of values, beliefs, and traditions that are different from those of Western countries. Arab cultural beliefs and practices are perceived as crucial in shaping Arab's perceptions and management of psychiatric disorders. However, what may be considered acceptable in one society may be regarded as unacceptable and open to stigmatization in other societies. For example, Arabs are more likely to seek mental health care from religious leaders than professional services, given the religious or supernatural beliefs associated with mental health difficulties (Dardas & Simmons, 2015). Often in the Arab culture, a person with behavior considered abnormal brings social shame not only upon themselves but also upon their family. On the basis of my own knowledge of Arab culture, it is also common for families with lower socio-economic and educational backgrounds to construct an individually tailored system for the targeted family member, like excluding them from participating in social contexts, instead of seeking professional treatments. Further, low levels of public awareness about mental and substance use disorders and their related treatments lead to people not perceiving the need to seek professional care and misconceptions about treatments (Kerbage et al., 2020).

2.2 Health literacy

The stigma surrounding mental health issues is closely associated with the level of health literacy in the relevant population. Health literacy is the degree to which individuals can obtain, process, and understand basic health information and services needed to make appropriate health decisions (U.S. Department of Health and Human Services, 2010). Health literacy is an essential concept that provides understanding and helps to increase individuals' awareness of mental health challenges (World Health Organization, 2018a). Furthermore, it enables the individual to seek help when encountering health-related problems (p. 17); health literacy strategies, therefore, seek to provide accessible, understandable, and culturally sensitive health information (p. 20).

Strengthening health literacy among displaced Syrian people will enable them to engage with health promotion activities and increase their use of health services, which improves health outcomes across the life-course. Otherwise, lower health literacy will lead to increased hospital and emergency admissions, more extended inpatient stays, poorer medical adherence, increased health care costs, lower engagement in prevention activities, etc. (World Health Organization, 2018a).

2.3 Mental health promotion, prevention, and interventions

According to the World Health Organization, health is defined as a state of complete physical, social, and mental well-being, and not merely the absence of disease or infirmity (World Health Organization, 1998). Herman, Saxena, and Moodie (2005) argue that the development of feelings, thoughts, behavior, social skills, and the skills to act independently, flexibly, and vitally are part of a broad definition of health. Furthermore, *health promotions* have an aim to improve mental health, such as increasing the degree of well-being, optimism, social support, resilience, and self-efficacy (Herman et al., 2005).

Preventive interventions are interventions aimed at decreasing risk factors in individuals before they develop into mental health disorders or reach clinically high symptom levels. In contrast to providing treatment of people with existing disorders or high symptom levels, preventive interventions aim to prevent new individuals from developing disorders or high symptom levels (Herman et al., 2005; Major et al., 2011). The difference between prevention and promotion is that prevention is concerned with avoiding disease, while promotion is about strengthening health and improving well-being (World Health Organization, 2002).

There are three varieties of preventive interventions: universal, selective, and indicated preventive interventions. Universal preventive interventions target the entire population and are not directed to a specific risk group. In principle, a universal intervention may be beneficial to all individuals in that population. The universal preventive intervention effect is small on the individual but large at the population level because it reaches many people. Studies have showed that universal interventions have a successful impact on school-based programs, such as classroom behavior management, enhancing child social skills, and multimodal strategies like parents' involvement. One example of universal school-based intervention programs is programs to prevent bullying (World Health Organization, 2004).

Selective preventive intervention aims to target individuals or subgroups of the population where the risk of developing a mental disorder is higher than average. Selective preventive intervention has been found to be effective in preventing conduct problems. Some examples of such programs are prenatal or early childhood programs and school or community-based programs (World Health Organization, 2004).

Indicated prevention intervention aims to reach high-risk people with minimal but detectable symptoms of mental disorders. Indicated preventive intervention has a good effect on the individual but is less significant for a large population. An example of an indicated preventive intervention is an early treatment for symptoms of anxiety (World Health Organization, 2004).

2.4 User involvement

User involvement in mental health services—whether at the system or individual level—is a principle by which the patient or user is provided room to influence decisions about their treatment. User involvement aims to ensure mental health services meet patients’ actual needs and allow them some control over their health care (Storm & Edwards, 2013). The term user involvement is related to the concept of co-determination, which is about participating in decision-making processes or being involved in deciding what is to happen and how it is to be done (Bae, Eide, Winger, & Kristoffersen, 2006).

Children who are affected by a decision or are a user of services should have an influence on processes related to decision-making and the design of the offered services. This is a democratic right that is clearly manifested in The United Nations Convention on the Rights of the Child. Article 12.1 of the Convention states that children have “the right to express those views freely in all matters affecting the child.” Furthermore, under Article 13.1, it states that children have the right “to freedom of expression; this right shall include freedom to seek, receive and impart information and ideas of all kinds” (United Nations Office of the High Commissioner of Human Rights (OHCHR), 1989).

However, on the basis of my own experience as an Iraqi refugee adolescent at age 13 attending a secondary school in Syria, I recognize that universal norms and standards concerning children's rights are to a lesser extent taken into consideration. For instance, it was common to use physical punishment against the students in Syrian schools. Although the obligation to prohibit all physical punishment of children is stated directly under articles 19, 28.2, and 37 in the Convention on the child's rights, they were not practiced in the society. This indicates that universal norms and standards are not necessarily considered seriously as in Western countries.

Therefore, it is crucial for facilitators of services to be aware of such cultural insight into practices and focus extensively on the principle of user involvement when providing a service in an Arab context. Children's and adolescents' own experiences and views should be central to the development and implementation of services. They have a real influence on the services' design because of their experiences, knowledge, and insight into how the given services work. That is an essential supplement for professionals, politicians, and administration to contribute to the planning, design, and operation of a better service offering (Larsen, Aasheim, & Nordal, 2006).

2.5 Psychosocial support (PSS)

One type of preventive intervention is psychosocial support (PSS). The Inter-Agency Standing Committee (IASC) defines the terms mental health and psychosocial support as two complementary approaches that include any type of local or outside support which aims to protect or promote psychosocial well-being and prevent or treat a mental disorder (Inter-Agency Standing Committee (IASC), 2007a).

The term "psychosocial support" is based on the understanding that a combination of different factors is responsible for people's psychosocial well-being and that the biological, emotional, spiritual, cultural, social, and mental aspects of experience cannot be disconnected from one other. That's why the term highlights the totality of people's experience, both physically and psychologically, and underlines the need to view these problems within the context of the broader family and community networks in which they occur (INEE, 2016).

A psychosocial support approach not only focuses on individual clinically based diagnoses but also on holistic, broad-based preventative programs that promote resilience and develop coping strategies across the entire affected group. Applying the PSS approach in schools for children in conflict-affected areas, whether through formal or non-formal education, is the core means through which support can be provided. There, teachers and other PSS staff are the main stakeholders. The PSS program approach can be delivered as an integrated part of the curriculum or through other activities like sport, art, and digital programs (Mattingly, 2017). The PSS approach in education aims to help children and youth recover after a crisis has disrupted their lives and strengthen their ability to return to normality after experiencing negative events (INEE, 2018).

Research has highlighted the importance of schools in providing psychosocial support to children traumatized by war, in our case, displaced Syrian children in schools. Not only do schools provide affected children with a sense of normalcy, but school-based psychosocial support (PSS) initiatives help reduce the stigma associated with mental health issues (INEE, 2016). There are many varied PSS programs and interventions for providing a child's well-being. Still, it is challenging to make firm conclusions about these psychosocial interventions' impact because of a lack of evidence-based research (Mattingly, 2017). However, an early study was conducted to measure the impact of integrated PSS programs on Lebanese public schools (World Learning, 2018). The study showed an increase in children's psychosocial well-being in the class, where students increasingly gained comfort in sharing their feelings with others. The same study showed that teachers developed confidence and motivation in handling students' behaviors arising from trauma and developed a more positive classroom atmosphere regarding social cohesion, trust, and the feeling of safety among students. It also strengthened the teachers' existing positive attitudes towards PSS (World Learning, 2018).

2.6 Social and emotional learning (SEL)

PSS initiatives focus more comprehensively on the child's mental health, going beyond just the physical and psychological to also consider their role in the family, community, education, etc. As a subcategory of PSS, *Social and Emotional Learning* (SEL) initiatives focus on establishing life skills by cultivating emotional management and interpersonal competencies in the child (INEE, 2016, pp. 8-10).

SEL is a process where children, adolescents, and adults acquire and effectively apply the knowledge, skills, and attitudes that are necessary to understand and manage emotions, set and achieve positive goals, feel and show empathy for others, establish and maintain positive relationships, and make responsible decisions. SEL plays also an important role in the healthy development of young people in every society and is especially important in countries made fragile by violent conflict (Clarke-Habibi, 2019, pp. 228-230).

Moreover, SEL is a core content element of the Sustainable Development Goal Target 4.7 themes (Benavot et al., 2019), that state "By 2030, ensure that all learners acquire the knowledge and skills needed to promote sustainable development, including, among others,

through education for sustainable development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and non-violence, global citizenship and appreciation of cultural diversity and of culture's contribution to sustainable development" (United Nations Development Programme (UNDP), 2015). Students should learn about the themes and values in Target 4.7 and have the opportunity to practice the skills necessary to realize those themes and associated values. Those values include empathy, a sense of fairness, gender equality, respect for each human being, and collaboration with others (Benavot et al., 2019).

The main goals of SEL are to foster the development of five relevant sets of cognitive, affective, and behavioral competencies: self-awareness; self-management; social awareness; relationship skills; and responsible decision-making. Self-awareness consists of the ability to recognize one's emotions and thoughts and their influence on behavior. Self-management involves the ability to control one's emotions, thoughts, and behaviors in various daily situations. Social awareness is the competence of understanding the perspective of others from diverse backgrounds and cultures, including an understanding of social and ethical norms of behavior. Relationship skills involve the capability to establish and maintain healthy and fruitful relationships with other individuals and groups. And lastly, responsible decision-making is the skill of making constructive and respectful choices about personal behavior and social interactions (INEE, 2016).

Studies have found that SEL initiatives were among the most effective school-based PSS initiatives, especially in crisis contexts, as they empower and build resilience among affected children. SEL is considered to be at the heart of most school-based programs designed to support healing, social cohesion, and resilience, and as reflected by the World Bank (2013), SEL competencies often serve as the main competencies outlined in most programs intended to build social cohesion before, during and after crisis and conflict. In emergency settings, where youth struggle to survive in unstable and often life-threatening environments, SEL skills remain essential in providing and building resilience, which can make a remarkable difference in their social relationships, stress management, and education (Mattingly, 2017).

2.7 Digital psychosocial support

PSS interventions can take many forms, including use of cutting-edge technology to enhance learning. If mental health literacy can be gained from cutting-edge technology and implemented by teachers in school-like settings, stigma-problems associated with the intervention and mental health problems might decrease (Benavot et al., 2019). Fairburn and Patel (2017) argue that the availability of digital technology has created new opportunities in psychological interventions. Despite variability in content, format, functionality, clinical range, and mode of delivery, digital technology provides a range of opportunities in assessing, tracking, and treating psychological disorders. When accompanied with support, digital technology allows for direct treatment on a large scale and to underserved groups, as effectively as face-to-face treatment. The use of digital technology is likely to become a more widespread tool for psychological interventions, not the least in the provision of PSS and SEL initiatives for underserved groups such as refugee children (Fairburn & Patel, 2017).

Moreover, these digital programs, which are also referred to as social and emotional learning programs, mental health prevention, character education, and life skills, aim to increase children's capacity to handle social and emotional difficulties. Many programs demonstrate diverse skills to target specific outcomes for specific age groups. Those programs vary in levels of intensity and involvement. For instance, programs targeting elementary school-aged children aim to revolve around classroom behavior problems, violence prevention, and bullying prevention, while programs for middle and high school-aged youth tend to focus on sexual health and substance use prevention (Boustani et al., 2020).

2.8 Game-based learning and SEL

Furthermore, Hromek and Roffey (2019) mention that experience-based learning tools like games provide a forum for developing the skill-sets, attitudes, and values that build resilience and maintain well-being. Both playing games and having fun are crucial to the development of children and are extremely motivating to them. The natural setting of a child's game offers opportunities for language development, hypothesis testing, problem-solving, and the formation of thought constructs that reflect the shared cognitive themes related to cultural understanding. Fun is a crucial element of playing a game. Fun and humor stimulate creativity as the brain changes from a cognitive, rule-bound state to a more calm and relaxed state where the whole body is engaged in problem-solving (Hromek & Roffey, 2019).

Digital game-based learning also offers the capability to minimize barriers to accessing learning materials, provides the opportunity for iterative and differentiated learning, and alleviates the need for physical learning environments. Game-based learning provides the chance to improve the quality of education delivery by supporting children with direct instructions that target their individual learning needs (Koval-Saifi & Plass, 2018).

Digital games played by the young come in a variety of formats, from turn-taking games to more complex games where players require a fair degree of social and cognitive sophistication to play. The interaction that occurs within those games makes them especially suitable for delivering SEL. Those games' purpose is to use strategies such as discussion, role-play, and problem-solving to engage players in solving social dilemmas while practicing social and emotional skills (Hromek & Roffey, 2019).

Recently, there has been an increase in studies examining preventive programs and their impact on youth. However, the field has been hindered by a lack of consistent terminology, poor research methods, and inadequately resourced trials, leading to confusion about whether these programs are useful or should be pursued. However, earlier studies showed that game-based learning interventions offer the potential for increasing student engagement and motivation, which have natural ties to learning (Werner-Seidler, Perry, Caelear, Newby, & Christensen, 2017). Another study conducted to measure the effectiveness of an e-mental health intervention in Lebanon indicated that such interventions might be useful in reducing depression and anxiety symptoms and increasing youths' well-being (Shehadeh et al., 2020).

2.9 Implementation of school-based interventions

Werner-Seidler et al. (2017) argue that the implementation of prevention programs at an early age when behavior is more responsive to change is likely to produce better outcomes than treatment delivered when adamant patterns of cognition and behavior have already been settled and are ingrained. Schools can be utilized to implement prevention programs because they provide a natural and accessible way to reach young people. Schools are also a place of learning and deliver tremendous opportunities to offer young people many skills and strategies that can protect against an outbreak of emotional difficulties. When it comes to accessing treatment, school-based programs integrated into the school curriculum can alleviate typical barriers such as time, location, and cost (Werner-Seidler et al., 2017).

Boustani et al. (2020) mention that there are barriers that may impact the implementation of school-based programs like districts not being organized to provide mental health services; teachers not being trained to deliver such interventions; and concerns about program availability, aims, content, training recruitment, available support, etc. There are also many programs to choose from and variables to consider. The stakeholders like local leaders, school principals, and after-school program leaders are responsible for evaluating available programs' quality and relevance. However, the stakeholders may not be able to identify or select the best program for their needs. They may also not know how to prioritize criteria by which to evaluate factors such as the cost of training; duration of the program; complexity of implementation; opportunity to assess outcomes; perceived enthusiasm among teachers, parents, and students, etc. (Boustani et al., 2020).

2.10 Psychological first aid (PF) and the Helping Hand

Psychological First Aid (*Psykologisk førstehjelp (PF) in Norwegian*) is a tool that has its theoretical basis from the cognitive model, specifically, cognitive behavioral therapy (CBT). Cognitive behavioral therapy is a well-documented approach to preventing and treating a number of mental disorders, like depression and anxiety, in children and adolescents (Raknes, Hansen, Cederkvist, & Nordgaard, 2017).

PF is a psychological-pedagogical tool developed by the Norwegian psychologist specialist Dr. Solfrid Raknes. It is both a conversation tool and self-help material. PF initiatives aim to help children become more aware of their own and others' feelings, thoughts, and coping strategies. The primary purpose of PF is to help children to develop a good language for emotions and learn a problem-solving system that can be useful in emotionally demanding situations. Thus, the material helps children recognize and put their thoughts and feelings into words and discover that they can get more acceptance, understanding, and support by saying what they feel and think (Haugland, Mauseth, & Raknes, 2013).

PF can also be used to practice communication around emotionally challenging topics. By reflecting on situations where one is struggling, and planning how to face difficult situations more constructively, the child can give themselves support to master more. By using the PF initiative in groups and classrooms, children can develop their interest in capturing what others are feeling and thinking. Therefore, Raknes, Hansen, et al. (2017) argues that PF is

involved in developing children's communication skills concerning conveying one's own emotions. Moreover, Raknes also suggests that PF will be able to help reduce symptoms pressure in children and young people at an early stage, which will make them seek necessary help and support when the challenges become difficult to handle alone (Raknes, Hansen, et al., 2017).

Various Norwegian schools and kindergartens are implementing PF as part of the municipality's systematic prevention work, through all kindergarten children between the age of four and six and students in primary and secondary schools receiving systematic training. The teaching in PF addresses topics like emotions, thoughts, connections between situations, and coping strategies through the problem-solving tool the 'Helping Hand', (see *Figure 1*). Moreover, PF is also translated into the Arabic language and is implemented in the education program for displaced Syrian children and adolescents in Beqaa Valley, Lebanon (Raknes & Gjertsen, 2020).

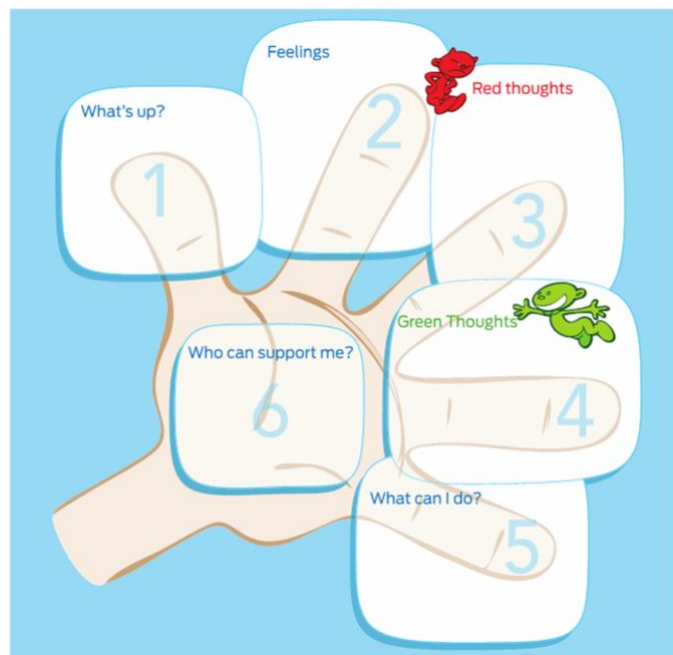


Figure 1: The Helping Hand problem solving system. Forwarded by Dr. Solfrid Raknes.

2.11 The Happy Helping Hand game app (HH)

This research project is about the Happy Helping Hand (HH)¹ game app. As part of Psychological First Aid (PF) initiatives, Dr. Solfrid Raknes, the videogame production company Attensi, and the publishing house Gyldendal, with support from Innovation Norway, have developed a game app called The Happy Helping Hand (اليد المساعدة in Arabic). The targeted user group is adolescents between the ages of 12 and 17, in Norway and Lebanon. The game app was originally developed in the Norwegian and Arabic languages and launched in Norway and Lebanon in 2020. English and French versions are expected launched the autumn 2021. The game aims to facilitate gamified training in life skills and to improve mental health literacy among adolescents. The users are supposed to develop emotional awareness and social and emotional problem-solving skills. Furthermore, through the game, adolescents will learn the basic principles of the cognitive behavioral model. The problem-solving skills the adolescents learn through the game are meant to help them cope with success and hardships in their everyday life situations (Raknes, 2020b)

Moreover, the game player will help a friend master a typical situation that causes stress or anxiety in young people's lives. In the game, the player will meet different characters. The purpose is to help those characters with challenges they encounter in their daily lives, such as coping with criticism, being heartbroken, social rejection, suicidal thoughts, and dealing with traumatic memories, etc. (Raknes, 2020b).

As part of the HH app intervention, the teacher/PSS staff who facilitates and guides a group of adolescents or full classes will receive training on how to teach the app. They are also encouraged to facilitate activities related to the game, e.g., reflective conversations, with the adolescents. Such activities aim to decrease the stigma associated with mental health problems and make it easier for adolescents to share their emotions and ask for help (Raknes, 2020b). A manual is available to structure the PSS program when the HH app is used in group sessions.

The main learning goals of the Happy Helping Hand app is as follows:

1. Raising awareness on identifying the emotions and the way of sharing them.

¹ I will use the 'Happy Helping Hand' app and the abbreviation 'HH' app when discussing the game through this thesis.

2. Raising awareness of the relationship between situations, feelings, thoughts and behaviors
3. Raising awareness of automatized thinking and learning about negative automatic thoughts (*red thoughts*) and helpful thoughts (*green thoughts*).
4. Improving coping strategies and skills for use in emotional difficult situations by using the Helping Hand problem solving system (*see Figure 1*).
5. Improving social skills, communication skills included.

Figure 2. *The Happy Helping Hand app. The two figures represent negative automatic thoughts (red thoughts) and helpful thoughts (green thoughts). From (Raknes, 2020c).*



2.12 Multi Aid Programs (MAPs)

This research project is a part of MAPs' evaluation of their services. The MAPs organization is a non-governmental organization (NGO) founded and run by Syrians in Lebanon. The organization provides many services, such as education, health care, and relief for displaced Syrian people who are in need in the Beqaa valley and Arsal. MAPs' mission is to empower displaced Syrians and provide them with hope and necessary skills to live in dignity. This mission comes through clearly in their motto, "One family towards dignity". MAPs' vision is to secure a dignified society by facilitating children to reach their potential and building capacity in the displaced Syrian population through employment and engaging them in the community (Multi Aid Programs (MAPs), 2020b).

MAPs provide displaced young Syrians with education, but unfortunately, education through MAPs does not lead to any formal certification. However, the education MAPs provide is crucial in supporting competency, hope, and a sense of meaningfulness in children's and adolescents' lives. Their education programs benefit more than 15,000 children, adolescents, and adults (Multi Aid Programs (MAPs), 2020b).

Moreover, as part of their education programs, MAPs support their students and staff with PSS training. The teachers at Al Amal teaching centers participate in a range of PSS training, including a three-month cooperation with the Ministry of Education in Lebanon. Besides, in collaboration with the clinical psychologist Dr. Solfrid Raknes, they conduct training sessions each year to prepare teachers for the Happy Helping Hand program. The training includes how to monitor and teach emotional literacy to displaced children and adolescents (Multi Aid Programs (MAPs), 2020c).



A picture of Syrian adolescents at one of MAPs education centers. Uploaded from (Multi Aid Programs (MAPs), 2020a)

2.12 Summary of literature review

This chapter reviewed some of the relevant literature related to this study, including the definition of concepts and terms, reviews of previous research, and tools explanation. This literature has also provided us with a broad understanding of displaced Syrian adolescents' situation in Lebanon. Most Syrian adolescents have experienced war and displacement, and various factors related to those experiences, in addition to their current uncertain living situation, socio-economic condition, and the COVID-19 pandemic, are affecting their mental health and well-being. With that comes the need to address the targeted adolescents' emotional, cognitive, and behavioral challenges to achieve sustainable and healthy development. One way to accomplish that is through preventive interventions that aim to promote mental health and well-being and prevent challenges related to that. Thus, as reviewed above, various studies, reports, committees, organizations, and departments have highlighted the need to establish psychosocial support, a type of preventive intervention, in the education of displaced Syrian adolescents to increase awareness around mental health problems (health literacy), promote well-being and assist them to develop coping strategies. Although several studies have investigated psychosocial support intervention in general, few have investigated its effect in the field. This study, therefore, aims to examine the contributions of the Happy Helping Hand app as a digital psychosocial support intervention on well-being and emotional problem-solving skills for displaced Syrian adolescents in Lebanon. To examine the investigated phenomena, we should review relevant theoretical frameworks to help us understand how such interventions might improve well-being and contribute to shaping coping strategies and how the interaction of internal and external factors affects displaced adolescents' psychological well-being. This will be further described in *Chapter 3 Theoretical frameworks*.

3. Theoretical frameworks

To examine the utility of the Happy Helping Hand app as a digital psychosocial support (PSS) tool to improve well-being and emotional problem-solving skills of displaced Syrian adolescents, understanding of the psychological development in children and adolescents, and how these relate to well-being and emotional problem-solving skills, is crucial. In the field of psychology, there is a range of theories concerning psychological development and learning.

Cognitivism sees the brain as an information processing system; focusing psychology on internal cognitive processes. It perceived learning as a cognitive process, where learning is a process of receiving, organizing, storing, and retrieving information. The focus of learning was on the organization of cognitive systems that allowed for new information to be associated with stored information through certain learning strategies (Ertmer & Newby, 2013).

Constructivism, on the other hand, hold that people create their own realities by actively giving meaning and order to it. They therefore construct mental systems in order to meaningfully understand their worlds and experiences (Raskin, 2002). Learning is a way of creating meaning from experience and interactions with the environment; whereby an individual's mental constructions are continuously being "tested" on his or her environment. The increasingly refined mental constructions act as cognitive tools for the individual to operate in his or her environment (Ertmer & Newby, 2013, pp. 54-56). Social-constructivism expand on this as it sees these mental constructions as formed inter-psychologically between people, through social interactions, before being internalized (Adams, 2006).

Having explored some of the main psychological schools of thought and how they relate to learning, I will investigate how they relate to digital psychosocial support (PSS) tools, especially in the education of adolescents. I will do this by exploring certain constructivist/ social-constructivist, and cognitivist theories concerning child development, play (physical and digital) learning, and the interrelationships between thoughts, emotions, and behaviors. But before exploring that, mental health and psychological well-being need to be understood from biological, psychological, and sociocultural perspectives (Eriksson, Ghazinour, & Hammarstrom, 2018). Thus, we will start by reviewing the ecological theoretical perspective

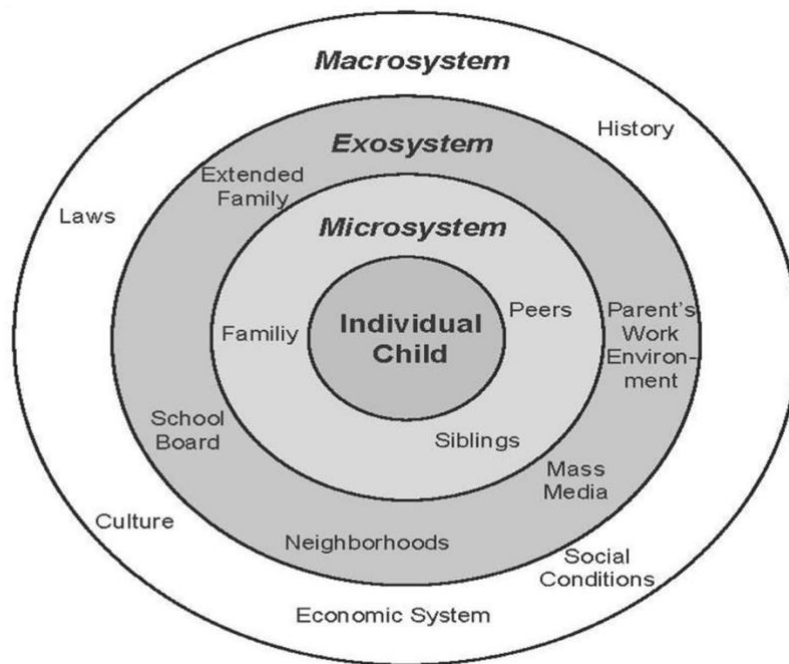
of Bronfenbrenner to provide us with the knowledge of human development within a social system and how several multilayered factors in interaction with each other contribute to such development.

3.1. The social-ecological model (SEM)

The social-ecological model (SEM) of Urie Bronfenbrenner (1979) is an ecological theoretical perspective for understanding human development through four different system levels. SEM helps to understand the multifaceted levels within a society and how individuals and the environment interact within a social system. It is regarded as crucial to analyze the composition of these ecological system levels and the interaction between and within these systems and individual factors to understand and explain the human developmental outcome. The theory is widely used in many fields of research, including health and mental health research (Eriksson et al., 2018).

The four system levels are divided into microsystem, mesosystem, exosystem, and macrosystem. At the microsystem level, the model contains relations between the individual and the immediate environment surrounding the individual, such as the home, school, and workplace. At the mesosystem level, the model focuses on interactions between the individual's immediate settings, such as relations between home and school, home and peer groups, etc. The exosystem level is an extension of the mesosystem which embraces specific social structures such as the world of work, the mass media, and public agencies. These social structures can both be formal and informal, and the individual may not be directly involved at this level, but they do feel positive or negative forces. And lastly, the macrosystem level is regarded as a cultural blueprint that may determine the social structures and activities that occur at the immediate systems level where the individual is located (Dorothy L, 2014).

Figure 3: *The Social-Ecological Model (SEM) of Urie Bronfenbrenner. From: (Halsall, Manion, & Henderson, 2018)*



In the field of health promotion, the socio-ecological model provides a comprehensive framework that integrates multiple levels of influence on health outcomes and has been applied to conceptualize the factors that contribute to the mental health and well-being of refugees and other conflict-affected adolescents. According to the SEM, the intrapersonal and interpersonal factors that operate within multiple ecological systems influence adolescents' psychological well-being. Adolescents' psychological well-being is associated with multiple social systems, such as individual system (age, gender, etc.), family system (a family socio-economic situation, family support, etc.), school system (school engagement, school support, etc.), and community system (organizations, friends support, etc.). Thus, the psychological well-being of adolescents is strongly connected to their social support system (Guo, Hopson, & Yang, 2018).

The social-ecological model is used in this thesis to provide us with an understanding of how internal and external factors around displaced Syrian adolescents contribute to their development and affect their psychological well-being. Our research aims, among other things, to explore the contribution of the Happy Helping Hand on displaced adolescents' well-being and problem-solving skills. As an integral aspect of the research, and based on existing available evidence, we expect this approach to uncover multiple risk factors that

affect well-being. Thus, applying the socio-ecological framework will help us understand how exposure to multiple factors within different ecological levels would decrease or increase psychological well-being in targeted adolescents.

3.2 Theoretical perspectives on play and learning

3.2.1 Constructivism

The main idea of how play and learning take place emphasizes the *constructivist approach*, which implies that learners conceive understanding and form meaning by combining their own existing knowledge base, actions, and individual experiences (Secore, 2017). According to constructivism, a participant learns through active participation, whereby they go out into the world to find a (preliminary) solution to a problem, in contrast to the passive participant who gets all the information assigned by a teacher. Moreover, constructivism implies an ontological position that relates to the premise that reality is relative. Reality is relative because it is based on constructions that arise through social interaction. Thus, the reality is linked to the constructions and has historical, cultural, and social indexicality. In the constructivist paradigm, the reality is neither objective nor constant but changeable and maintained through social interaction (Guba & Lincoln, 1994, pp. 105-117). Therefore, the participants in an activity construct their knowledge by testing ideas based on prior experiences, applying them to a new situation, and integrating the latest knowledge with pre-existing intellectual constructs, creating a new reality.

John Dewey (1859-1952) was one of the foundational psychologists of constructivism. He believed that learning through play was important to provide children with many different experiences. Dewey argued that education depends on actions and that education should include socially engaging learning experiences that are developmentally appropriate for young children. Dewey also states that effective education came primarily through social interactions and that the school setting should be considered a social institution (Dewey, 2009; Roussou, 2004).

Jean Piaget (1896-1980) was also one of the first theorists in constructivism. Piaget's constructivism is based on stimulating interest, initiative, experimentation, discovery, play, and imagination as essential to developing a child's capacity to learn (Roussou, 2004). Piaget's theories about learning emphasized the need for children to explore and experiment

for themselves. Thus, he played a central role in developing the view that play can be crucial in children's cognitive development. Piaget differentiated play from imitation by indicating that play is primarily an *assimilation process*, while imitation is an *accommodation process* (Blaise, Edwards, & Brooker, 2014). Assimilation and accommodation are two processes in a child's cognitive development. Assimilation occurs when we modify new information to fit into our schemas (what we already know). It is a process that keeps the new information and adds to what already exists in our minds, while accommodation is when we restructure what we know so that new information can fit in better. Furthermore, Piaget believed that children use play to construct their knowledge of the world by relating their new experiences to their existing cognitive schema (Blaise et al., 2014). Piaget's statement on play also says that play can unite imagination and intellect in more than one way and help children discover things in their own way (Roussou, 2004).

Piaget's constructivism has become more relevant in recent years due to digital development in education. His theory has been used as a theoretical basis in the use of digital tools and digital games such as "*Virtual Reality*" environments (Chen, 2009). Duffy and Cunningham (1996) state that technology is a way to expand cognition within a constructivist approach, and that it especially makes possible varied learning activities that are dynamic, rather than just a simple redistribution of cognitive labor (Duffy & Cunningham, 1996). In the context of digital tools and e-learning environments, constructivism is adopted as the primary driving force in the development of highly interactive and participatory environments. Where the user can modify, test ideas, and actively engage in problem-solving and critical thinking. Moreover, based on a constructivist view, the individuals in an e-learning environment are forced to use creative thinking to build their knowledge base for meaningful reflection and interpretation of knowledge. This theory has also proved useful for designing and developing e-learning programs, as the "context" in which learning occurs becomes central to the activity of learning (Sultan, Woods, & Koo, 2011).

The constructivist approach is used in this thesis to provide us with a perception of how the PSS digital learning tools contribute to constructing new knowledge, e.g., life skills, coping strategies, etc. As our research aims to explore the usefulness and feasibility of the Happy Helping Hand app, and based on previous evidence of such digital interventions, we expect to find a positive tendency from our targeted teachers/ PSS staff and adolescents. If our assumption is found correct after conducting the research with the adolescents and teachers/

PSS staff, then applying the constructivist framework will allow us to understand how such an e-learning environment creates engagement and contributes to new knowledge adaptation.

3.2.2 Social constructivism

Social constructivism is more linked to social context and cooperation between individuals than Piaget's individual-based cognitive constructivism. Lev Vygotsky (1896-1934) was a proponent of social constructivism who believed that development and learning occur in a social and cultural context and that interaction and help from more competent people are necessary for optimal learning. Social constructivism also emphasizes higher mental functions in the learning process, such as problem-solving, concept formation, and decision making. The primary feature of Vygotsky's social constructivism is the zone of proximal development (ZPD). The ZPD has been defined as: "the distance between the actual developmental level as determined by independent problem solving and the level of potential development as determined through problem-solving under adult guidance, or in collaboration with more capable peers" (Vygotsky, 1978, p. 86). Vygotsky believed providing the learners with the appropriate support, e.g., by educators or supportive tools, will give the learners a "boost" to achieve development.

According to social constructivism, learning is a social process, which involves a form of participation in academic or practical professional communities. Therefore, learning occurs not only through social interaction with others but also using cultural tools such as signs, language, and material tools. This perspective considers that learning is mediated. Mediation is about learning through the use of tools or artifacts (Vygotsky, 1978). When we solve a problem, we use tools/artifacts that help us. Vygotsky described those tools and resources as everything from physical tools and technology to symbol systems and languages (Cutter-Mackenzie, Edwards, Moore, & Boyd, 2014). In this thesis, digital tools are understood as tools with a cultural, social, and historical character. Those tools, according to Roger Säljö (2001), function as structuring resources that enable participants in social practices to interpret and act competently in new situations. The result of the interaction is that we change as individuals; this applies to both our intellectual and communicative repertoire and our way of mastering physical tools (Säljö, 2001).

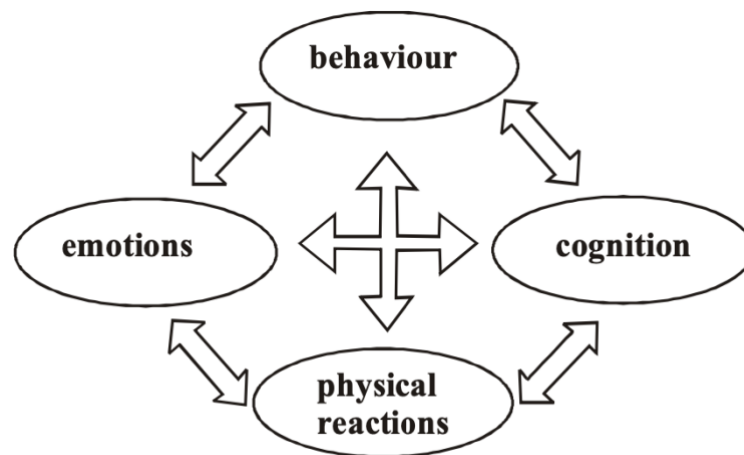
Social constructivism has been used as a theoretical basis for implementing digital tools in learning, such as mobile phone, iPad, and computer learning, as it promotes collaboration and interaction and increases the ability to think critically. Social constructivism is utilized in this research to provide us with an understanding of why play (digital play) and social interaction are essential for adolescents' learning environments. As the Happy Helping Hand is a digital PSS game that aims to improve the problem-solving skills of the users, we expect to find an expansion in adolescents' problem-solving skills after playing the game. Thus, if our assumption is found to be correct after conducting the research with the adolescents and teachers/ PSS staff, then applying social constructivism will help us understand how such tools contribute to a change in adolescents' behaviors after their interaction in a social context.

3.3. Cognitive models

All cognitive behavioral (CB) theories are conceptualized as a general category of theories or related theories, which have evolved from the theoretical writings, clinical experiences, and empirical studies of behavioral and cognitively oriented psychologists and other mental health workers. The term cognitive behavioral reflects the importance of both behavioral and cognitive approaches to understanding and helping human beings. Cognitive behavioral theory is composed of cognitive processes and behavioral strategies that have a goal of achieving cognitive and behavioral change (Kalodner, 2011).

A central principle of all cognitive behavioral theories involves inherent relationships between our thoughts, behaviors, and emotions, also called the "cognitive triangle" (Beck, 2011). Our thoughts, emotions, and behaviors mutually influence each other. A change in a component such as thoughts will lead to a change in the other components, such as behaviors and emotions. It is central in CB approaches to understand how these components mutually affect and interact with each other when it comes to an understanding of the child's problems and how these can best be treated (Martinsen & Hagen, 2012).

Figure 4: Cognitive Behavioral Therapy model. From: (Kumar Nehra, Kumar, K.L, & Nehra, 2013)



Cognitive behavioral-based (CB-based) intervention focuses on challenging and changing unhelpful cognitive distortions (e.g., thoughts, beliefs, and attitudes) and behaviors, improving emotional regulation, and developing personal coping skills that target solving existing problems. The basis of CB is that maladaptive thoughts promote the continuance of psychological distress and behavioral difficulties. These maladaptive thoughts include the individual's general beliefs about themselves, the world, and the future, creating automatic thoughts that may be inaccurate or unhelpful in certain situations (Beck, 1970). An essential mechanism in CB approaches is challenging and changing those maladaptive thoughts with alternative thoughts that can lead to a change in the behavior.

The CB approach is used in this research to provide a broad understanding of the digital intervention, the Helping Happy Hand app. Our investigated digital intervention is a cognitive behavioral-based tool that aims to improve adolescents' well-being and assist them to learn how to problem-solve. If our research objects' outcome will correspond to the app's aim, then applying the approach will help us understand how and why such a contribution has occurred.

3.3.1. Social learning theory (SLT)

Social learning theory (SLT), as developed by American psychologist Albert Bandura (1977), is a cognitive theory that addresses both the psychosocial dynamics underlying health behavior and the methods of promoting behavior change. SLT can be broadly understood as a

social, behavioral approach that emphasizes the reciprocal interaction between cognitive, behavioral, and environmental determinants of human behavior. That means, in other words, a person, the behavior of that person, and the environment within which the behavior is performed are continually interacting with each other (Blair, 1993). The theory is based also on the idea that we learn our behavior from our interactions with others in a social context. Behavior is shaped by positive and negative reinforcements, as well as through vicarious learning by observing other people's behavior and its consequences (Bandura, 1977).

According to SLT, learning does not always occur due to firsthand experiences alone but also through observation and imitation. Bandura states that humans can develop ideas about how new behavior is to be performed by observing others. Thus, four major components comprise observational modeling: (1) attention, (2) retention, (3) reproduction, and (4) motivation. In attention modeling, the individuals must pay attention to the modeled behavior through observation. Retention involves the individuals learning from the observed behavior; they must then remember the modeled activities. This can be aided through using imagery and descriptive language. At the stage of reproduction, the individual translates the modeled behavior into their actions. This involves converting the retained imagery and language into a response in line with the modeled pattern. Motivation is the last stage, and to reproduce the observed behavior, the individual needs the motivation to do so (Lyons & Berge, 2012).

Furthermore, contributing to a person's psychological well-being is their own belief in their ability to exercise a modicum of control over their life; what Bandura (1997) calls 'self-efficacy'. Self-efficacy is "beliefs in one's capabilities to organize and execute the courses of action required to produce given attainments" (Bandura, 1997, p. 3). Self-efficacy involves an individual's estimate of a certain behavior resulting in a particular outcome ('outcome expectations'), as well as the conviction that they are able and capable of executing the behavior required to produce that very outcome ('efficacy expectations') (Bandura, 1977, p. 79).

Self-efficacy is nurtured by promoting mastery experiences, vicarious experiences, social persuasion, and construal of physical and emotional states (Bandura, 1997). Mastery experiences involves individuals increasing self-efficacy by having a direct experience of mastery. Success will build self-belief, whereas failure will undermine that efficacy belief. A resilient sense of efficacy requires experience in overcoming obstacles through perseverant

effort. Mastery experiences are particularly effective in promoting self-efficacy. Vicarious experiences come from an individual's observation of people around them; especially people considered role models. Seeing people succeed raises the individual's belief that they have the capabilities to achieve success in that area too. Social persuasion involves the influence of people around the individual, e.g., parents, teachers, etc. That influence can strengthen the beliefs of the individuals' capabilities of success. And lastly, the emotional and physiological states of the individual can influence how they judge their self-efficacy. Depression and stress, for example, can affect the individual's capabilities, while positive emotions can boost their confidence (Bandura, 1997).

Social learning theory is used in this research to provide us with an understanding of how social and cultural environments influence adolescents' behavior. The Happy Helping Hand aims to learn how to problem-solve and contribute to shaping coping strategies in adolescents by interacting them with the games' characters as they will guide a friend to master emotional challenges. Thus, if our outcome corresponds to the app's aim, applying the social learning theory will help us understand how new behavior is performed and shaped.

3.4 Summary of theoretical frameworks

This chapter reviewed some of the relevant theoretical frameworks related to this research. The theoretical frameworks provided us with specific knowledge of children and adolescents' cognitive and psychological development and how such development relates to their learning and well-being. The different frameworks offered an understanding of how factors within multiple ecological system levels contribute to displaced Syrian adolescents' well-being; how digital PSS learning tools contribute to constructing new knowledge; why play (including digital play) and social interaction are vital for adolescents' learning; on what basis our investigated intervention builds on; and lastly, how social and cultural environments contribute to shaping new behavior. However, the reviewed theories are only meant to provide a specific understanding behind our investigated phenomena and cannot offer enough evidence to answer our research question. Thus, we needed to gather evidence from our targeted group of adolescents and teachers/ PSS staff, and thereby, we designed a method to help us collect such evidence. This will be further outlined in *Chapter 4 Methods*.

4. Methods

To examine the utility of the Happy Helping Hand app as a digital psychosocial support (PSS) tool to improve the well-being and emotional problem-solving skills of adolescents, we needed to choose a method suitable for approaching the empirical data that allows us to draw certain inferences based on this data. A method is any procedure that allows us to generate new knowledge (Hellevik, 2002, p. 12). Therefore, how we perceive knowledge will largely determine our choice of method.

Epistemology is the philosophy of knowledge and how it can be attained; where one stands epistemologically determines which method is viewed as most suitable for collecting data and drawing inferences. Two main strands of epistemology will be explicated briefly. The first, known as objectivism, perceives knowledge as objective, definite, and measurable; it seeks to identify causal relationships through empirical observations that can be quantified and measured. Quantitative methods are applied to draw generalizable inferences about a class of phenomena. This epistemological approach is associated with the positivist and post-positivist schools of thought. The other strand, known as subjectivism, perceives knowledge as an inherently contextual and (inter-) subjective product of the human mind. Qualitative methods are employed to investigate individual cases; the researcher seeks to interpret people's subjective "realities" through analysis of language and context but will rarely draw scientific generalizations from these observations. In this camp, you find the schools of thought associated with anti-positivism or interpretivism (Chilisa, 2020, pp. 35-36, 46-47; Cohen, Manion, & Morrison, 2018, pp. 6-7, 10-11, 16-17).

The epistemological school of thought associated with John Dewey and his educational research is what is known as *pragmatism*; although within the anti-positivist/interpretivist camp, the overall purpose of attaining scientific knowledge is to help facilitate problem-solving of certain social challenges. For this aim, pragmatists tend to opt for whichever scientific method works best for their specific purpose; when it comes to evaluating methods for psychosocial support, this is often a mixed-methods approach (Chilisa, 2020, pp. 44-47).

In this chapter, the choice of research design and methodological approaches is explained. This master thesis is based on a mixed-method research approach using a combination of

qualitative and quantitative method techniques for data collection. The data collection consists of different stages, during which focus group interviews and questionnaires were utilized. Finally, the quality of the study will be assessed by examining the validity, reliability, and ethical considerations of the study at the end of this chapter.

4.1 Access and gatekeepers

As we mentioned in sub-chapter 2.12 *Multi Aid Programs (MAPs)*, this research contributes to MAPs' evaluation of services for displaced Syrian adolescents enrolled in their education programs. In addition, MAPs are an important facilitator in this research as they are both access providers and gatekeepers. They are access providers as they permitted me to contact their teachers and students. Without their permission, I could not conduct the focus group interviews nor the survey. Moreover, MAPs are also gatekeepers as they had the responsibility for selecting the (N=104) adolescents for this study. How MAPs did the selection process will be described further in sub-chapter 4.3.1 *Research selection process and the Happy Helping Hand intervention*.

4.2 Choice of research design

The research in this study was guided by the desire to explore the concept of psychosocial support in the education of displaced Syrian adolescents in Lebanon. Within that framing, the empirical focus is on the Happy Helping Hand app as a digital psychosocial support tool that aims to improve psychological well-being and emotional problem-solving skills.

Furthermore, the study explores how displaced Syrian adolescents experienced the Happy Helping Hand app; how teachers and PSS staff experienced the app; and their thoughts about the apps' utility after using it. Thus, I needed to carry out in-depth analyses of these questions. To address the complexity of these questions, the study has employed a mixed-methods approach.

This research finds itself within the pragmatist school of thought as this approach is inescapably linked to examining the Happy Helping Hand app as a digital psychosocial support tool and measuring its efforts to promote psychological well-being and emotional problem-solving skills in displaced adolescents. The results of this research are likely to be used to improve the Happy Helping Hand app as digital psychosocial support (PSS) tool and to highlight how such digital PSS intervention contributes to adolescents' well-being in the

context of displaced Syrian adolescents in Lebanon. Nevertheless, the pragmatists' preference for whichever method proves most advantageous, regardless of it being in the quantitative or qualitative tradition, allows us to take the best of both worlds when constructing our research methods.

A mixed-method type of research is where a researcher or team of researchers combines two or more research methods to answer a single research question, combining elements of qualitative and quantitative viewpoints. The mixed-method research intention is to give a higher and more comprehensive understanding of a topic or a problem rather than what a single method approach can answer (Cohen, Manion, & Morrison, 2018). To provide a proper justification for how methods are mixed and why, we need to take a closer look at typologies for mixing methods in research design. Jennifer Greene (2007) distinguishes five purposes for employing mixed methods: (1) triangulation, (2) complementarity, (3) development, (4) initiation, and (5) expansion. Triangulation seeks convergence, corroboration, and correspondence of result from different methods. Complementarity seeks elaboration, enhancement, and clarification of the results from one method with the result from the other. Development aims to use the result from one method to help develop the other method. Initiation seeks to discover paradoxes, contradictions, and new perspectives of frameworks from one method to the other. Expansion aims to extend the breadth and range of inquiry by applying different methods for different inquiry components (Greene, 2007, p. 18).

Alan Bryman (2006) elaborates further on combining qualitative and quantitative research and breaks down Greene's categories into several aspects, and adds several additional features: (a) credibility, (b) context, (c) illustration, (d) utility, (e) confirm and discover, and (f) diversity of views. Credibility deals with the fact that the use of both approaches improves the integrity of the findings. Context refers to situations where the combination is justified in qualitative research, providing contextual understanding coupled with generalizable valid results or broad relationships among variables uncovered through a survey. Illustration refers to using qualitative data to illustrate quantitative findings, often referred to as putting 'meat on the bones' of 'dry' quantitative results. Utility considers that combining the two types of methods will also increase the research findings' practical utility. Confirm and discover is about using qualitative data to generate hypotheses and using quantitative research to test them within a single project. Diversity of views includes two different rationales: combining researchers' and participants' perspectives through quantitative and qualitative research, and

uncovering relationships between variables through quantitative research while revealing meanings among research participants through qualitative research (Bryman, 2006, p. 106)

To achieve the study's aim and examine the complexity of the questions posed in this study, detailed qualitative analyses of students' and teachers' perspectives were undertaken. However, examining the study's complexity necessitated proving the credibility of these analyses and, therefore, quantitative evidence was provided. Regarding this, my rationale for applying the mixed-method approach in this study comprised triangulation, complementarity, development, initiation, and expansion (Greene, 2007) plus credibility and illustration (Bryman, 2006). Triangulation in this study is achieved by examining students' perspectives from the focus group interviews and seeing if they correspond to the outcomes from the pre- and post-tests. Complementarity, development, credibility, and illustration are achieved by illustrating and elaborating qualitative analyses of teachers' perspectives on students' well-being and app experiences with the quantitative analyses of students' reflections and experiences. Thus, the combination of qualitative and quantitative analyses was essential to achieve initiation and expansion and to create new perspectives on the complex theme of using digital tools for psychosocial support in the education of displaced Syrian adolescents.

4.3 Research selection process and the Happy Helping Hand intervention

4.3.1 The selection process of teachers and adolescents

The recruitment of teachers/ PSS staff for the Happy Helping Hand app training took place in early September 2020. The recruitment criteria for selecting the teachers/ PSS staff were devised by Dr. Solfrid Raknes, the founder of the Happy Helping Hand app, and sent digitally to the education project coordinator at MAPs, Dr. Bayan Louise, who was responsible for selecting the participants in the field in collaboration with others.

The recruitment criteria for teachers/ PSS staff consisted of: (1) 10 adults (5 women and 5 men) who MAPs will use to run the HH training for adolescents; (2) The adult participants must be willing to participate in this research as research objects; (3) They must have a higher educational background, such as teachers or health workers; (4) They must have psychosocial skills, such as good communication skills, good group leading abilities, and positive attitudes toward life skills training through play and communication; and (5) The participants must

have digital access (Wi-Fi, digital devices) and digital skills (knowledge in using and teaching the adolescents how to download and use the HH app).

After the end of the selection process, Dr. Solfrid Raknes provided the selected teachers/ PSS staff with a digital half-day workshop on the HH app. During the workshop, Dr. Bayan Louise was present and helped with the translation to Arabic. In addition, teachers and PSS staff received written instruction on how to use and follow the game's different scenarios. Some of the teachers also had previous background knowledge of the analog version of the HH for younger children (4-12 years), and they helped each other during the training.

MAPs were responsible for the adolescent selection process since the adolescents were already enrolled at one of the education centers/schools at MAPs. There were, however, three requirement criteria to guide MAPs in the selection process: (1) 100 mixed-gender adolescents (regardless of composition); (2) They must be between ages 12 and 17; and (3) They must be divided into ten groups where each group consists of 10 adolescents—same gender or mixed.

4.3.2 The adolescents recruited for this study

Ten groups of adolescents with a total of 104 displaced Syrian adolescents participated in a 10-session psychosocial support program based on the Happy Helping Hand app. The age of the participant's adolescents was between 12 and 16 years (Mean^{age}=13,38 years). The adolescents in the community were invited to participate, regardless of their mental health or coping skills. The impact of the HH intervention was evaluated using a standardized well-being questionnaire, the WHO 5 Well-Being Index (WHO-5), undertaken before and directly after the end of the intervention, as well as feasibility questions (*this is further described in sub-chapter 4.5.1 The questionnaire*). The recruited adolescents for pre-assessment (N=104; 56 girls and 48 boys) were between 12 and 16 years old (Mean=13,38 years). The recruited adolescents for post-assessment (n=73; 34 girls and 39 boys) were between 11 and 15 (Mean^{age}=13,59).

4.3.3 Implementation of the Happy Helping Hand intervention in this study

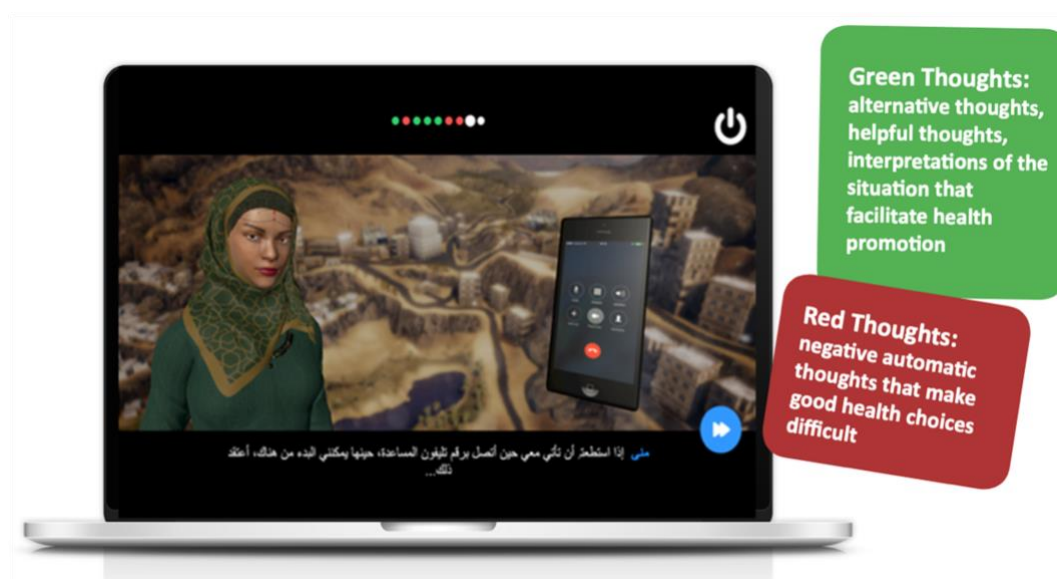
The Happy Helping Hand intervention started at the end of October 2020. The HH intervention lasted for five weeks, with each group having two sessions a week. The

adolescents were divided into ten groups of the same or mixed gender, where each group was led by one teacher/PSS staff. The intervention consisted of ten sessions, in which each session guided the adolescents through a scenario in the HH app:

1. **Presentation anxiety.** The scenario aims to make students identify what they are most afraid of when giving classroom presentations. They are also encouraged to practice often at home and increase their tolerance of failing through making mistakes on purpose.
2. **Dealing with criticism.** The scenario aims to increase awareness around reacting with anger when receiving criticism. The students are encouraged to try to understand the intention behind the criticism, and if they were to criticize, they are encouraged to choose words carefully.
3. **Dealing with social rejections.** The scenario aims to strengthen students' self-recognition. Students are encouraged to practice saying positive and supportive things to themselves and to understand that 'everyone won't like everyone.'
4. **Dealing with a parent's mental difficulties.** The scenario aims to make students understand that parents' illness is not their fault, and they don't need to blame themselves. Students are also encouraged to be open with family and friends about their difficulties.
5. **Helping a heartbroken friend.** The scenario aims to make students understand that 'love' is important, and it is normal to be heartbroken when losing someone. Students are encouraged to talk with somebody when they feel sad and are recommended to be active and social after a break-up to overcome the situation.
6. **Accepting your body as it is.** The scenario aims to make students understand that self-acceptance is important; no need to be hard on judging oneself; other personality aspects are more important than a 'pretty looking' body. Students are further encouraged to identify what they like about themselves.
7. **Dealing with suicidal thoughts.** The scenario aims to make students understand the seriousness of the topic; to take suicidal thoughts seriously and reach out for help before the situation worsens.
8. **Dealing with racist comments/bullying.** The scenario aims to make students aware of bullying and racism; to confide in an adult and set personal boundaries.
9. **Training self-assertiveness.** The scenario aims to make students understand the importance of standing up for what they believe in and daring to tell their opinions. They are also encouraged to discuss complicated situations with people they trust.

10. Dealing with traumatic memories. The scenario aims to make students understand that painful memories can be triggered by things associated with traumatic experiences. Students are encouraged to focus on the present time when they are caught up in painful memories. They are further encouraged to seek help.

Figure 5. The Happy Helping Hand app. A picture from one of the scenarios from the Arabic version of the app. From (Raknes, 2020b).



Each session addressed one of those topics and lasted approximately one hour. The teachers were supposed to start the session by giving an oral background knowledge about the topic and some practical instructs before playing the game. Then the students were invited to play the game using a digital device (e.g., iPad, Smartphone, or computer) provided by MAPs at their education center. After they finished playing, the teacher gathered all the students and talked about the topic and what emotions and challenges the students faced while playing the scenario. The teachers used various methods to summarize each topic, such as role-play, group presentation, drawing posters with keywords, etc.



Adolescents playing the Happy Helping Hand game at one of the MAPs education centers. Picture taken by teachers/ PSS staff 28.10.2020.

4.3.4 Challenges related to this research

The study took place under challenging conditions as the fundamental research is related to displaced Syrian adolescents who live in insecure conditions in Lebanon. The first challenge was the research objects: displaced adolescents from conflict areas in Syria who live in extreme poverty in Lebanon. Most of the selected adolescents for this research were affected by extreme poverty and, at the time of the research, lived in a refugee camp. This living situation is accompanied by a lack of the necessary resources such as food, clothes, school supplies, and medical aid.

Further, the study also took place during difficult economic downturns in Lebanon. Displaced Syrians were already a vulnerable group in Lebanese society as they were affected by the financial crisis that began in 2019. After the Beirut port explosion in August 2020, their living, social, and economic conditions became even worse. In addition, the situation was further complicated by the COVID-19 pandemic, which had a significant impact on displaced Syrians in Lebanon. They were overly exposed to the virus because of their living conditions, as it was highly difficult to maintain social distancing. Lockdown made it almost impossible for them to improve their economic conditions as there were no jobs to seek.

COVID-19 restrictions, which involved the complete lockdown of society and the closure of flights both abroad and inland, posed major challenges for this research. The plan for this research was to carry out fieldwork in the Beqaa Valley in Lebanon. But due to the COVID-

19 lockdown, travel restrictions implemented by the Ministry of Foreign Affairs in Norway, and OsloMet university's restrictions to their students, it was impossible to travel and perform fieldwork.

However, despite all the challenges mentioned above, we were able to take advantage of a small window of opportunity to conduct the research for this study digitally in collaboration with people responsible at MAPs. We managed to make a strategic plan for gathering data for the qualitative and the quantitative part of the research. We had to be solution-oriented and find suitable approaches that could be implemented in the field by considering all the challenges that Syrians are facing. Here, communication between all partners involved was a vital link to perform the data collection.

4.4 The qualitative approach

According to Johnson and Christensen (2014), mixed-methods research involves two dimensions: (1) time orientation of the qualitative and quantitative methods, and (2) paradigm/research approach emphasis. Time orientation involves whether the qualitative and quantitative phases used in the study occur simultaneously or whether they happen in phases over time. Paradigm/research emphasis demonstrates whether the qualitative and quantitative components are given equal priority or whether one paradigm has more weight than the other (Johnson & Christensen, 2014). In this master thesis, I will employ mixed-methods research with an emphasis on the qualitative approach (a so-called 'QUAL + quan' approach). As a result, the study was guided with a QUAL + quan design because the qualitative data is more critical in understanding the study's complex phenomena (Teddlie & Tashakkori, 2006).

In addition, being a native Arabic speaker with a refugee background gave me an advantage when conducting this part of the research. Growing up in Iraq and living in Syria as an adolescent gave me the significant advantage of knowing Arabic culture and having experienced being a refugee at that age. This provided me with the benefits of understanding the adolescents' context to best provide useful insights. Using Arabic allowed us to communicate well and express complex ideas fluently to each other.

4.4.1 Focus groups interviews

Focus group interviews were conducted to explore participants' perspectives about psychological well-being and psychosocial support in education, how they have experienced

the Happy Helping Hand game app, what factors contribute to their well-being, and how the app promotes emotional awareness and problem-solving skills. According to Bagele Chilisa (2020), a focus group is a discussion-based interview where multiple research participants simultaneously produce data on a specified issue. In focus group interviews, the researcher takes a less directive and dominant role, giving the participants a space to express their meaning as though in a real communication system in a natural setting. Furthermore, one of the reasons for using focus group interviews in the field of refugees is to provide us a more realistic perception of issues (Chilisa, 2020, pp. 255-256). Additionally, the discussion can be guided to target themes related to our research question from the subjects' perspectives (Brinkmann & Kvale, 2015, p. 31).

Three different focus groups' interviews were carried out with: (1) female adolescents; (2) male adolescents; and (3) a mixed-gender teacher group. The targeted age of the adolescent groups was between 12 and 17 years and enrolled at a MAPs education school/center. Furthermore, each focus group consists of 4-6 participants. The focus group interviews were conducted using the Zoom digital platform, and the duration of the interviews varied from 45 to 150 minutes. The participants in the focus group interviews received written information about the study and their right to withdraw at any time without any consequences. Moreover, all interviews were voice recorded after receiving written signed consent from participants.

4.4.2 The semi-structured interview guide

Two semi-structured interview guides were developed before facilitating the focus groups, one for adolescent groups and one for teacher groups (see Appendix D). A semi-structured interview is a focused interview comprising questions contained in a pre-prepared interview guide. The questions focus on the issue to be covered. The sequencing of questions is not the same for every participant as it depends on the interview process and answers from each participant. The interview guide aims to ensure that the researcher collects reasonably similar data from all informants (Chilisa, 2020, p. 250).

The interview guide was divided into various thematic categories. This was to make it easy for participants to understand the context behind the questions. The first category in the adolescents' interview guide was background information about the informants, and the second category was questions related to the use of the HH app. The third category contained

questions about the adolescents' emotional coping and problem-solving skills before using the HH app. The fourth category contained the same questions as the third category, but in the context of users' skills after using the HH app. The last category in the interview guide was feedback from the users to those responsible for the app's creation. The interview guide for teachers and PSS staff were categorized into background; reflections on the learning, health, and well-being of Syrian adolescents; questions related to the implementation of the HH app; teachers' experiences and observations of the adolescents' emotional coping and problem-solving skills after implementing the HH app; teachers' considerations about adolescents' behaviors and their social and emotional conditions after using the HH app; questions directed to teachers and PSS staff on the HH app; and lastly, teachers' feedback for improvement of the HH app. The interview guide for adolescents and teachers can be found in Appendix D.

4.4.3 The recruitment process for the focus group interview

Multiple purposive techniques were used to collect the participants for the qualitative phase (Teddle & Yu, 2007). For the adolescent group, this involved selecting adolescents of different ages within the 12-17 age group. The participants experience different living conditions: some live in regular homes and some in camps. Further, they have different educational levels: some resourceful adolescents with a strong academic background and some adolescents that do not stand out academically. For the teacher and PSS staff group, this involved selecting participants working at one of MAPs' educational centers. The participants were mixed-gender (2-3 females), all had received guidance and have experience in using the HH app with a group of adolescents, and all had previous experiences in leading PSS groups. The recruitment of participants to the focus groups took place in August-September 2020 in collaboration with the education manager at MAPs.

4.4.4 Transcription

The transcription was carried out based on the quantity of data material with which we could work. Focus group interviews place additional demands on audio recordings as there can be many voices to distinguish (Bryman, 2015). Thus, the focus group interviews were therefore conducted using a video recording via Zoom. Using video recording was a natural choice since the function in the program enabled both voice and video recordings.

To ensure the best possible result, the following transcription procedures were selected. My supervisors and I agreed that I would make three summaries, one document for each focus group (see Appendix G). The utilized method was part of what is called *naturalism* (Oliver, Serovich, & Mason, 2005). The naturalism approach involves including as much detail as possible (Oliver et al., 2005) in the summary. Furthermore, the adolescents' interviews involved lively conversations in which they used different means to talk about their experiences, such as body language, facial expressions, laughter, and varied tones of voice. Those expressions were necessary to include to inform the analysis, and therefore, they were described and put in brackets.

During transcription, all the participants' names were anonymized and replaced with letter codes (e.g., informant A, informant B, etc.). The transcribed documents were approximately between 2,500 and 3,000 words each, i.e., 5-6 pages of comprehensive summaries. After the interviews were transcribed, the documents were sent to my supervisors for approval. However, it is the video interviews that are the basis for my analysis, not the transcripts. Rather, the transcripts acted as aids in the analysis work, while the recorded conversations with the adolescents and teachers made up my actual empirical material. Later, I will use the transcripts to, as Kvale describes it, "enter into a dialogue with the text" (Kvale, 1997, p. 102). This involves going into the documents and attempting to clarify, deepen, and develop the transcript text.

4.4.5 The focus group interview: Strengths

The process in focus group interviews creates significant potential for answering the research question. The focus group method allows participants' perspectives to be revealed in ways that are different from individual interviews. It also provides the researcher with in-depth information about the context (Bryman, 2015). Another strength is that the group dynamic makes the participants feel empowered and more comfortable discussing the topic (Gibbs, 2012). These points were clearly observed when I conducted the adolescents' focus groups. The adolescents felt comfortable talking about their experiences on the topic—even about the sensitive issues that concerned their well-being and emotional coping skills. Segregating the focus groups into a male and a female focus group helped the participants to talk freely about their emotions and how they tend to react during difficult situations. Regarding the teacher and PSS staff group, the advantage of utilizing a focus group was that participants became so engaged in discussing the topic that it lasted approximately 2.5 hours. The teachers and PSS

staff shared their experiences and observations and used each other's arguments to reflect in-depth on the issue. As Tove Thagaard (2018, p. 92) mentions, "Group interview also allows going in-depth on the topic, as it permits the informants to comment on each other along the way and discuss further".

4.4.6 The focus group interview: Weaknesses

There are several weaknesses associated with the focus group interview. Among other things, the participants' experiences may not emerge because there can be social dampers that cause the participants to moderate themselves (Halkier, 2010). There is also a tendency for some participants to dominate other members in the course of group discussion (Dilshad & Latif, 2013). Some participants may conform to the responses of other participants, even though they may disagree. It may also be challenging to record during the group discussion when two or more participants speak at the same time (Bryman, 2015). These problems were observed during the adolescents' group interview discussion. Among the adolescent groups, there were a few participants who often dominated the whole conversation. This led others who participated less to become silent and accept whatever was said, even when I asked them directly by name. It was also challenging when several of the participants answered the questions at the same time.

Since the focus group interviews were held digitally, other challenges arose. Alan Bryman (2015) lists several disadvantages of conducting an online focus group; among other things, only people with access to online facilities are likely to be able to participate. In our case, due to the challenging living condition of displaced Syrian adolescents, it was necessary to gather all participants at one of MAPs education centers to ensure access to the internet. This process was challenging because the participants had to meet precisely at a set time, and they had to sit in groups in front of one screen in a classroom. Furthermore, in both the teachers' and adolescents' focus group interviews, the internet connection was slow, and there were repeated interruptions.

Another disadvantage with conducting an online focus group interview was the participants' tendency to discontinue their involvement in the group discussion (Bryman, 2015). It was challenging to engage the adolescent participants in the debate as the interview lasted for more than one hour. I noticed that, as time went on, they became less engaged and lost

interest in participating. This could have been avoided if the interviews were held face-to-face in the field.

4.5 The quantitative approach

In a quantitative study, the researcher obtains comparable information about a larger number of units, expresses this information in the form of numbers, and performs a statistical analysis of the numbers' pattern in the data matrix (Hellevik, 2002). The quantitative part of this research aimed to add credibility to the qualitative data by examining many units. The quantitative data was used to assess the feasibility and usefulness of the Happy Helping Hand game and measure adolescents' well-being before and after playing the game. Thus, the quantitative method was carried out using a questionnaire.

4.5.1 The questionnaire

A questionnaire is a collection of questions or statements addressed to a group of people. The questionnaire aims to ask questions to a larger group of people, where the answers can be used to express what a larger group of people think without having to ask everyone (Lund & Haugen, 2006). The design of a questionnaire can appear in three types:

1. Close-ended (structured) questionnaires
2. Open-ended (unstructured) questionnaires
3. A mixture of a closed-ended and open-ended questionnaire.

Structured questionnaires tend to provide the researcher with quantitative data while an unstructured questionnaire offers qualitative or text-based information. In both ways, the questionnaire can be divided into different question types: information, category, list or multiple choice, scale, ranking, complex grid or table, and open-ended (Zohrabi, 2013).

The questionnaire design in this study was a mixture of closed-ended and open-ended, with different question types utilized. The questionnaire was divided into pre- and post-test. The adolescents completed the pre-test before the 10 hour-long sessions of the Happy Helping Hand. In the pre-test, the questionnaire was divided into two categories: background information and well-being questions. Background information contained three questions: (1) gender (girl or boy); (2) I am an (adolescent, parent, teacher, PSS staff); and (3) age (from 11 to 100 years). Well-being was measured by the World Health Organization well-being index (WHO-5). The WHO-5 is a short and standardized global rating scale that measures

subjective well-being. The WHO-5 contains only positively phrased items (*see figure 6 below*). When considering the last 14 days, the participants are asked to rate how frequently each statement applies to them in terms of their well-being. The five items are ranged from 5 (all the time) to 0 (none of the time) (Topp, Østergaard, Søndergaard, & Bech, 2015). The raw score ranging from 0 to 25 is multiplied by 4 to give a final score, with 0 representing the worst imaginable well-being and 100 representing the best imaginable well-being.

Figure 6: The WHO-5 questionnaire. From: (Topp et al., 2015)

The WHO-5 questionnaire						
Instructions: Please indicate for each of the 5 statements which is closest to how you have been feeling over the past 2 weeks.						
Over the past 2 weeks...	All of the time	Most of the time	More than half the time	Less than half the time	Some of the time	At no time
1 ... I have felt cheerful and in good spirits	5	4	3	2	1	0
2 ... I have felt calm and relaxed	5	4	3	2	1	0
3 ... I have felt active and vigorous	5	4	3	2	1	0
4 ... I woke up feeling fresh and rested	5	4	3	2	1	0
5 ... my daily life has been filled with things that interest me	5	4	3	2	1	0

The adolescents completed the post-test after the 10 hour-long sessions of the Happy Helping Hand. The post-test questionnaire was divided into several categories: (1) background information; (2) WHO-5 questions; and (3) the impact of the Happy Helping Hand app (measuring feasibility and usefulness). The background information category was the same as in the pre-test. The category of the WHO-5 questions was the same as in the pre-test. The last category concerning the impact of the HH app consisted of eight questions that used a five-point Likert Scale with a combination of a text box where the participants could write freely. The participants were asked to rate the extent to which they agreed with a list of presented items (e.g., Do you think the game makes you feel better?) on a five-point Likert Scale (start label= no, not at all, scale from 1-10, end label= yes, very much). The participants were asked to write freely in a text box (e.g., What have you learned?). The pre-and post-tests can be found in (Appendix E). Data of the questionnaire were collected electronically through the software “Quest Back”.

4.5.2 Procedure

The participants in this study's quantitative phase were displaced Syrian adolescents living in Lebanon and enrolled at a school/education center run by MAPs. The questionnaire's recruitment was based on the condition that participants must have participated in the 10 hour-long sessions of the Happy Helping Hand. These participants were (N=104), which were divided into 10 groups with each group consisting of 10 adolescent participants plus one teacher/ PSS staff.

Each group leader received an email inviting them to the survey, with a link to "Quest Back" and a document in Arabic with criteria and an explanation of how to conduct the survey. In addition, a WhatsApp group was created with all teachers/ PSS staff responsible for the adolescents' group. The WhatsApp group's purpose was as a channel of communication between me and the teachers/ PSS staff and to ensure that everyone received the necessary information for optimal data collection.

Before completing the questionnaire, the participants received a written consent form with information about the study's purpose and their rights to withdraw without any consequence. All consents forms were signed by the adolescents and parents and saved at MAPs. In addition to written information, all participants received oral information and guidance from the facilitators. Further, some of the facilitators were present during the completion of the survey to help participants who had technical difficulties (e.g., understanding the questions, score ranging, internet access, etc.).

4.5.3 Challenges related to the questionnaire

Due to the situation with COVID-19 and the associated travel restrictions both between countries and inside Lebanon, the questionnaire was created digitally through the platform Quest Back. Hence, I was not present in the field to guide and help the participants complete the questionnaire. This caused several challenges during data collection. First, some teachers who helped participants complete the questionnaire misunderstood the procedure. Each group leader was given a link developed specifically for their group, and when they had trouble opening the link, they used another groups' link. This led to errors in the data set, and the groups overlapped. Thus, the pre-test process had to be repeated, and teachers received a descriptive document with the procedure in Arabic.

Second, due to the displaced Syrian adolescents' living situation, not everyone had access to the internet. They had to meet up at the school/education center to complete the questionnaire. In the pre-test phase, this went well because the school was functioning. However, there was a complete lockdown during the post-test phase due to the situation with COVID-19 and all the schools were closed. Thus, the participants had to complete the questionnaire at home. Since not all participants had access to the internet or good resources (smartphone, computer, iPad, etc.), there were gaps in the data set.

Third, since participants completed the questionnaire at home without their teachers' guidance, there were some unanswered questions in the questionnaire. This is due to various reasons, such as difficulties in understanding the questions. Without someone to explain the questions to participants face-to-face, some participants may have chosen not to respond because they did not understand.

4.6 Translation

In the qualitative part of this study, I developed the interview guide in collaboration with my co-supervisor, Dr. Raknes. Since the study was conducted with Arabic-speaking individuals, the questions had to be translated into Arabic. The questions were written in English and then I translated them into Arabic. They were then checked with two fluent English and Arabic speaking persons at MAPs. The method used for translation was, as suggested by Vossoughi, Jackson, Gusler, and Stone (2018), direct translation with a key informant validation. This involves translating the materials into the native language by verifying that the translation captures the participants' intended meaning (Vossoughi et al., 2018).

Further, since the focus group interviews were conducted in Arabic, they had to be translated into English during transcription. Thus, I directly translated the Arabic data output from the audio recordings into written English. During the translation process, I was aware that some interpretation of meanings might occur because the semantic relations between the words of different languages have no accurate one-to-one sets of correspondence (Eugene A., 1996). However, I tried my best to use words that, to a greater extent, correspond with the original meaning.

In the quantitative part of this study, the questionnaire was written in English and then translated directly into Arabic. The translated questionnaire was then checked by the education coordinator at MAPs and one more person, both fluent in English and Arabic.

4.7 Data analysis

4.7.1 Qualitative data

There are several methods for analyzing data material in qualitative research. In this thesis, a thematic analysis has been used to identify relevant topics through an inductive approach. This involves examining the topics that emerge along the way, regardless of whether they are related to the questions asked, as opposed to a deductive approach where one looks for predefined topics. In an inductive approach, the researcher instead lets the data material, to the greatest extent, speak for itself (Braun & Clarke, 2006).

Thematic analysis is a method used in qualitative research to identify, analyze, and report patterns (themes) within data. The method organizes and describes the data material in detail, and often goes further than this to interpret varied aspects of the research topic. Thematic analysis is widely used, but there is no explicit agreement on what thematic analysis is and how to implement it. One of the thematic analysis advantages is its flexibility and ease of use for inexperienced researchers. The theoretical freedom of the approach makes it a flexible research tool that can potentially give a rich and detailed, yet complex account of data (Braun & Clarke, 2006). Moreover, the method is useful for examining the perspectives of different research participants, highlighting similarities and differences, and generating unanticipated insights (Nowell, Norris, White, & Moules, 2017).

The disadvantages of thematic analysis are the lack of substantial literature and descriptions of how the method has been used on data; this may cause novice researchers to feel unsure about how to conduct a thematic analysis. Another disadvantage of thematic analysis is it does not allow the researcher to make claims about language use. Moreover, the flexibility in thematic analysis can lead to inconsistency and a lack of coherence when developing themes derived from the research data (Nowell et al., 2017).

The aim of applying a thematic analysis method in this thesis is to identify what the informants emphasize in connection with the HH app's use, how it contributes to promoting

problem-solving skills, and how it raises awareness about their well-being. Thus, Braun and Clarke (2006) six-step method of thematic analysis was used as a guideline:

1. *Familiarization*: The data material from the focus groups interviews was reviewed repeatedly—both through repeated readings of the summaries and repeated listening's to the audio recordings.
2. *Coding*: Relevant topics were coded, and excerpts from the interviews were systematized in their respective topic categories. Coding was based on an inductive approach where the selected topics are based on the data material rather than predetermined interests.
3. *Generating themes*: In this phase, the different codes were sorted into potential topics, and then all the data was gathered in those different categories.
4. *Reviewing themes*: Here, the themes were reviewed again to re-evaluate whether they fit into their category.
5. *Defining and naming themes*: Here, each theme was provided with a final name and a clear definition that captured its essence.
6. *Writing up*: The prepared analysis will be described later through this thesis.

4.7.2 Quantitative data

The data collected from the quantitative part of the study comprised data from before and after the HH intervention. The software used to analyze the quantitative data was IBM SPSS Statistics Version 27. Several statistical terms will be used to describe important aspects of the data; mean, standard deviation, and skewness. The mean is the average value of a data set. The standard deviation (St.d) is a measure of the dispersion of a set of values. Skewness is a measure of how much the probability distribution of a variable deviates from the normal distribution.

4.8 Quality assessment: reliability, validity, and generalizability

The quality of a research project is often assessed in three ways: reliability, validity, and generalizability (Tjora, 2017). These concepts are considered to be most relevant to quantitative research. However, the purpose of discussing them in a mixed-method approach, where qualitative and quantitative methods were utilized, is to allow the researcher to be critical of errors in data collection and analysis. At the same time, it enables the researcher to

discuss the connection between the research question, the research methods, and the results. Thus, reliability, validity, and generalizability are indicators that can help to verify a study and determine whether it can be accepted or legitimized (Brinkmann & Kvale, 2015).

4.8.1 Reliability

Reliability is about credibility; that is, whether the study examines what it set out to examine. If the same result can be consistently achieved by applying the same methods under the same circumstances, the measurement is then considered reliable. Christoffersen and Johannessen (2012) mentioned that reliability is related to how accurate the researchers' data is, how data is collected, and how the data is processed. Moreover, *test-retest reliability* refers to how research can be repeated with the same results (Bryman, 2015).

Several attempts have been made to ensure the reliability of the research in this thesis. First, the instrument used to collect data from the focus group interviews, which was video recordings that captured both visual and audio data, enabled higher reliability (by capturing participants' body language) than other data collection instruments, e.g., simple audio recordings or notes on paper. Second, the interview guide, which consisted of formulated main questions categorized into different topics, with additional sub-questions, gave the researcher better control by being able to direct the interviews to cover the specific issues being investigated. Third, the comprehensive summaries of the focus groups' transcription, where the participants' physical expressions were included, attempted to ensure the data's transparency. Furthermore, transparency is provided by attaching the interview guide and the questionnaire in Appendix D. Finally, the reliability is strengthened by employing a thematic analysis in the analysis of the qualitative data; this allows for methodical, systematic, and consistent data analysis, rather than a more unstructured and arbitrary approach. It also contributes to the transparency and re-testability of the analysis.

4.8.2 Validity

Validity deals with the extent to which the data outcome responds to the research question that formed the basis of the study. Further, the sample one is studying is also a representation of a larger phenomenon. Validity refers to the extent to which the inferences from the study can be extrapolated from the sample studied to the entire phenomenon. In other words, validity is the extent to which one can draw generalizable conclusions about an entire phenomenon on the basis of the smaller sample that is studied. Validity is also about whether

the method used examines what the research aims to discover. This also involves examining research objects that represent the group the researcher is theoretically trying to investigate (Vettenranta, 2010).

Internal validity concerns itself with the extent to which the results really examine or measure what they are supposed to (Cohen et al., 2018, p. 252). Internal validity in this thesis is about the extent to which the questions we are asking in the questionnaire and the focus groups can examine or measure the concepts we set out to investigate in the research question. The researcher has tried to carefully construct the questions in the questionnaire and the focus groups to examine and measure concepts like “well-being” and “emotional problem-solving skills.”

Cultural validity is related to cross-cultural research and is defined as: “the degree to which a study is appropriate to the cultural setting where research is to be carried out.” (Cohen et al., 2018, p. 264). To ensure that research is culture-fair and culturally sensitive, some questions must be considered, such as (1) is the researcher the appropriate person to conduct the research?; and (2) are gatekeepers and informants appropriately chosen? (Cohen et al., 2018, p. 264). Since the research carried out in this study is cross-cultural, two main considerations are found to provide cultural validation:

1. The researcher in this study is herself an Arab (originally from Iraq, and now living in Norway) and has experienced living in Syria as a refugee adolescent.
2. The research objects were chosen by a Syrian non-governmental organization providing education in Lebanon, and they followed the researcher’s requirement criteria.

My background and experience from two cultures, Arab and Norwegian, allows me to switch between the relevant cultures in the study. This adds cultural validity to the research design and results.

Mixed-method research has been suggested to provide more valid inferences. If the quantitative part’s outcomes correspond to the outcomes from the qualitative part that examine the same phenomena, the researcher can be more confident about the findings (Cohen et al., 2018, p. 265). This technique is called *triangulation*. The investigation process

is permeated by validation, and by assessing various validities, it can lead to minimizing threats to the research:

The term (validity) refers to the extent to which the mixed methods researcher successfully addresses and resolves all relevant validity types, including quantitative and qualitative validity types [...] as well as the mixed validity dimensions. In other words, the researcher must identify and address all the relevant validity issues facing a particular research study (Johnson & Christensen, 2014, p. 309).

First, triangulation in this thesis was achieved by utilizing focus group interviews and a questionnaire. Thus, the method triangulation strengthened the study's validity because two different methods were utilized to investigate the same phenomenon. Second, separating the focus group into three distinct groups (female, male, and teacher group) strengthened the study's validity by minimizing gender issues and by including teachers' observations of the adolescents. Third, the efforts made in the focus group's requirement process strengthened the validity by ensuring the sample was representative regarding age group, social-economical background, living conditions, and various educational levels among adolescents. And lastly, the quantitative part of the study ensured validation by selecting an appropriate representative sample size (not too small nor too large), which was adolescents who received training and used the Happy Helping Hand app.

4.8.3 Generalizability

Generalizability, also known as *external validity*, is the ability to draw general inferences from the research. In other words, generalizability refers to how well the findings of research is applicable to the larger group one is researching or other similar phenomena (Silverman, 2011).

By drawing a larger sample of research objects from the larger group one is researching, quantitative research methods can achieve a higher extent of generalizability than qualitative methods. Typically, the larger the sample researched, the more representative it is of the group being researched; hence resulting in more generalizable findings (Polit & Beck, 2010). Nevertheless, the term *transferability* in qualitative research, which is synonymous with

generalizability, refers to whether the research findings could apply to situations with similar characteristics (Anney, 2014).

The generalizability is strengthened in this research since the quantitative part examines a representative sample (a group of 100 Syrian adolescents). The findings from the qualitative part of the study can also be generalizable if one can apply them to similar research with similar characteristics. Moreover, if the result from the qualitative and quantitative methods corresponds, the generalizability is more achievable. However, since this research only investigates displaced Syrian adolescents in Lebanon, the findings' generalizability may be less generalizable to displaced adolescents elsewhere.

4.9 Ethical considerations

4.9.1 Research ethics

To review the technical part of the ethical consideration, this research is maintained in accordance with Norwegian Center for Research Data (NSD) guidelines and standards of privacy. The research project also was approved by NSD before data collection commenced (see Appendix A). The data collected are stored securely in OsloMet's storing facilities for research data to avoid potential theft and misuse (Toom & Miller, 2017). Furthermore, all data storage connected with this research is in line with the General Data Protection Regulation (GDPR). This is done by keeping the names of informants and all data separately, encrypting data files, securely storing data, and deleting data files after the appropriate time after use.

One of the essential ethical considerations before data collection was gaining informed consent from the participants. According to §8 of the Guidelines for Research Ethics in the Social Science, Law and Humanities adopted by the National Committee for Research Ethics in Norway (2019), the researcher is obliged to inform the participants and to obtain their consent. The informed consent must contain information about the study's purpose, the methods, risks, possible discomfort, and other consequences of importance to the participants. Thus, the participants received information about the study and their right to withdraw at any point without any consequences in a consent form they were to sign. For the adolescents under the age of 16, the information and form were also sent to their parents or guardians.

As the research subjects were likely to give certain personal and sensitive information, they were anonymized as individuals. This was critical to protect the identity of the research subjects. The research subjects were anonymized when writing the summaries by omitting their names, addresses, and personal identifiers.

Although the focus group participants were anonymized outwardly to the research audience, they were not anonymized inwardly within the focus group; the participants were displaced adolescents from the same school and most likely, the same refugee camp. This implies a risk that personal and sensitive information that was revealed in the focus group has been leaked out in the form of gossip within the community. However, this can be considered a necessary risk inherent in the focus group interview as a method and does not outweigh the benefit associated with the objectives of the research: namely, inquiring into the ability of the Happy Helping Hand app in promoting emotional problem-solving skills among the adolescents themselves and for those in a similar situation.

There were, however, ways of mitigating such risks. First, in the research, I have tried to maintain a degree of cultural sensitivity by segregating the focus groups into a male and a female focus group. This helped to avoid the stigma associated with certain gender-related issues. Second, the questions for the focus groups tried to avoid stigmatizing and particularly personal topics. This included topics such as personal poverty, domestic abuse, and psychosomatic issues.

4.9.2 Research ethics across cultures

In this sub-chapter, theoretical perspective concerning ethics when doing cross-cultural research is discussed. As the Happy Helping Hand app is a universal cross-cultural PSS intervention created in a Western country, some cultural challenges might exist concerning implementing the HH app for displaced Syrian adolescents in Lebanon. Reviewing perspectives from *cultural relativism* can help us understand and further discuss such challenges later in this study. *Cultural relativism* is the idea that certain ‘truths’, social norms, morals, and ethical practices vary according to culture (Bowie, 2014; Tilley, 2017). Cultural relativism, first established by Franz Boas in 1887, emerged in response to the ethnocentrism found in much of social science, assuming that cultures all progress along the same path of modernization, with Western culture taking the lead. As such, cultural relativism stands in

contrast to universalism and the idea that some ‘truths’, social norms, morals, and ethical practices are universally valid across all cultures (Tilley, 2017).

Cultural relativism is an overarching concept that encompasses cultural relativist positions that deal with several issues. Cultural relativism has its say about the methodologies of social science, asserting that the object of research (whether beliefs, customs, or actions) must be studied in the context of its culture; and the researchers must go as far as possible to understand this culture and suppress his own cultural bias. Furthermore, cultural relativism also address epistemology, asserting a markedly cultural difference in employing conceptions of knowledge, justification, and reasoning (Bowie, 2014; Bush, 2016; Tilley, 2017). Pragmatism, as an epistemological school of thought on which this study is based, is therefore in line with cultural relativism’s assertions on the methodologies of social science.

Cultural relativism also has its say about morals and ethics; asserting that ethics and morals vary across cultures. This is primarily a descriptive assertion, claiming that ethical and moral systems vary because they are born out of the cultures in which they exist and is therefore referred to as descriptive cultural relativism. Ethical cultural relativism opposes ethical universalism as it asserts that there exist no universally valid ethical and moral principles – what is inherently right or wrong entirely depends on the cultural context. In other words, what is right or wrong in one place is not necessarily right or wrong in another; therefore, the validity of an ethical maxim depends completely on the cultural context. Therefore, any moral or ethical claim is necessarily subjective, i.e., relative to the given culture; and it is not possible to make objective moral or ethical claims (Bowie, 2014; Bush, 2016; Tilley, 2017).

Nevertheless, Norman E. Bowie (2014) argues on the surface, cultures are not coherent entities, with large differences in ethical and moral practices among members of the same culture. Furthermore, beneath the surface of the ethical and moral diversity between different cultures, one can find inherently universal ethical and moral principles. These principles will look different in the distinctive cultures from which they are born, depending on the specific physical, economic, and social circumstances that form them; but different cultures may still not disagree on fundamental universal ethical and moral principles. Evolutionary psychologists have often made claims that inherently universal ethical and moral principles are biologically hardwired into the human brain (Anderson, 2009). Furthermore, Bowie (2014) argues that as people from widely different cultures can have conversations about

morals and ethics, this entails common moral and ethical concepts – a common “moral language”. In fact, attempts to codify some universal moral principles have led to a set of international rules, norms, and standards generally accepted by most nations in the international society, such as The United Nations Universal Declaration on Human Rights.

However, international rules, norms, and standards, including the UN Declaration on Human Rights, have been criticized by cultural relativists as holding Western ethnocentric values; where the rights of the individual trumps the rights of the group (or culture) (Anderson, 2009). Also, accepting universal ethical and moral principles as biologically hardwired, Brown (2008) argues, is of limited utility when understanding the plurality of everyday moral practices across cultures.

Nevertheless, perhaps the most convincing argument against moral relativism is the existence of cultural practices that seem inherently antithetical to human development, such as slavery and other practices that lead to human suffering (Bowie, 2014). Although such practices may have a purpose in their own cultural context, one cannot get past their adverse effects on the human condition. For a researcher, one must acknowledge one’s own biases; still, one cannot completely subdue biases against practices that seem inherently unethical. Therefore, without falling back on ethical universalism, one should adopt a more moderate form of relativism. Normative relativism is a prescriptive position whereby varying ethical and moral stances are acknowledged and tolerated, without judging according to the observer’s own ethical and moral principles and without imposing those standards on the subject. As such, it is not so much a principle of acceptance as of noninterference (Bush, 2016).

In researching the Happy Helping Hand app as used by displaced Syrians in Lebanon, my intention was to investigate the impact of the app on the psychosocial well-being and emotional problem-solving skills of these adolescents. By acknowledging my own moral standards and practices of the research objects while simultaneously holding my own ethical yardstick of good and bad, I considered the cultural context and employed a normative relativist approach.

4.10 Summary of methods

This chapter reviewed the methodological approaches and research design in this study. A mixed-method approach, where qualitative and quantitative methods are combined, was utilized to collect the empirical data. The field of digital psychosocial support interventions for displaced Syrian adolescents is poorly investigated. Thus, to investigate the Happy Helping Hand intervention, a newly implemented digital PSS intervention for displaced Syrian adolescents in Lebanon, it was necessary to apply a method that gives both depth and breadth of understanding of this complex phenomenon. Therefore, the utilized focus group interviews, combined with a survey, provided a better understanding of the contribution of the Happy Helping Hand app to the targeted adolescents' well-being and emotional problem-solving skills and how our targeted participants experienced the usefulness and feasibility of the app. A comprehensive presentation of the data outcome is found in *Chapter 5 Results*.

5. Results

In this chapter, both qualitative and the quantitative data are presented. The chapter is divided into two main categories; the first presents the results from the qualitative approach of the study, and the second presents the quantitative approach of the study. The results illustrate output around the app's contribution in improving the adolescents' well-being and problem-solving skills; teachers/ PSS staff and adolescents' experiences of its usefulness and feasibility; teachers/ PSS staff perspectives on factors contributing to the adolescents' well-being; cultural appropriateness around implementing the intervention in the Arab culture; and future suggestions for the app.

The results from the qualitative part are based on data from three focus group interviews that included teachers' and students' perspectives. The identified themes are based on the thematic analysis of our qualitative data (see Appendix F) and are the following: *value of the app and user experiences; theories of mind; app impact on adolescents' well-being; emotional problem-solving skill; and suggested changes to the app*. The three focus groups are denoted by group number, where the female adolescents' group is FG1, the male adolescents' group is FG2, and the teachers and PSS staff group are FG3. The data extract from the informants is marked with focus group number and informant number

The results from the quantitative part are based on surveys completed before and after the adolescents participated in a group intervention where they used the HH app. They illuminate two themes: *change in adolescents' well-being from before and after the HH intervention, and feasibility and usefulness of the HH app*.

5.1 Qualitative data

5.1.1 Value of the HH app and user experiences

Under this theme, teachers' and students' experiences and understanding of the HH app are presented. In the following data extract, the informants express their own interpretations of the HH app's purpose. The researcher asked the female and male adolescent groups if they could explain their understanding of the HH app, and the responses included:

The Happy Helping Hand is a tool meant to help us solve a problem if a problem arises and how to help others (FG1-G14A)

The game aims to help us deal with problems and teaches us how to find different solutions (FG2-B15B)

The researcher asked a similar question to the teachers and PSS staff group, where she asked them to describe the HH app and its purpose. They responded with the following:

The HH app aims to help adolescents see different solutions when a problem arises (FG3-T4)

These statements show that both teachers and adolescents consider the HH app as a tool that helps adolescents solve their problems by allowing them to see different possible solutions. Furthermore, the groups were asked to expand on their understanding of the utility of the app:

The app taught me a lot of themes related to my life ... It taught me how to express myself and my feelings (FG1-G14B)

The app teaches us how to deal with school problems, such as bullying and presentation anxiety. ... the app taught me to see that there are several sides of an issue (FG2-B15A)

The app taught adolescents how to deal with positive and negative thoughts and how to understand emotions better. ... The students developed the ability to know which thoughts are negative and positive (FG3-T5)

Here, several perspectives are given on how teachers and adolescents consider the utility of the app. The app helped the adolescents to deal with day-to-day problems and understand how to think differently when an issue arises. The teachers/ PSS staff indicated that the app also enabled adolescents to handle positive and negative thoughts and understand their emotions.

Moreover, participants in all groups were asked if they consider the app as an important tool in education. The questions' purpose was to bring out the participant's perspective on how and why such a tool is of importance in their education. They responded the following

The app is important because it helped me to help others. (FG1-G13)

The game helped me recognize new solutions and possibilities; that's why it is crucial. (FG2-B13A)

The app is essential because it allowed the students to reflect on problems and find different solutions. The app got them to discuss and express their opinions. The students were not used to discuss and express their views, neither at school nor at home. But the game gave them this role, and the students developed the ability to provide advice and participate in reflective conversations. (FG3-T1)

The data extract shows that both teachers and students consider the app crucial because it teaches students about various relevant topics that they encounter both in school and in their everyday lives. As the teachers elaborated, the app also helped students reflect on their problems and made it easier for them to participate in conversation with others to express their opinions and views.

The teachers and adolescents were asked about their app experiences as users, where they had to detail their experiences concerning characters, scenarios, and the language in the app:

The language was easy to understand ... The oral language was easy to understand, but some written words were confusing (FG1-G14A)

The scenarios affected me a lot; they taught me how to express myself (FG1-G14B)

The different scenarios were very relevant to me because I also face the same challenges in my every-day life (FG2-B12)

When the students played the app, they lived through those different scenarios and felt a part of them (FG3-T2)

Those characters reminded me of several people I know (FG1-G14C)

I recognized my friend in one of the characters, the one who was bullied (FG2-B15A)

The adolescents experienced the language as easy to understand, except for a few words that were not easy to understand. As for the app scenarios, the adolescents believed that they were both relevant and captivating. In the conversations with the students, they also mentioned that the challenges that faced the different characters were familiar because they had faced such challenges in their everyday lives, something that teachers also confirmed based on their observation of the students.

In the interview, we also talked about whether the app engaged the students. Data extracts from the different groups were as follows:

The app was very, very engaging. It was fun and it taught us things we did not know before. (FG1-G14A)

I think it is very engaging because it allows us to be a part of the game. (FG2-B13C)

I noticed that the students enjoyed the way the app engaged them in problem-solving because they were not used to being included or listened to, but through the app, the students got a role to reflect and make their own choices. (FG3-T2)

Apparently, the adolescents seem to find the app highly engaging. Mostly, they liked that the app was made as a digital game and that they were included as part of the game's decision-making. The teachers' view was interesting; they believed that the app taught students to make their own choices. They elaborated further that their typical education system does not allow students to participate in decision-making. All learning and regulations are usually decided unilaterally, without student involvement. Therefore, how the app included adolescents in decision-making was both unfamiliar and valuable.

Some perspectives emerged during the discussion regarding cultural appropriateness, where the teachers mentioned that some of the game scenarios were not culturally appropriate. They stated that topics related to feelings between different genders and issues associated with a female body are not accepted in Arab culture. Thus, the teachers felt not comfortable teaching the scenarios that dealt with these issues:

I had to skip two scenarios because I was not comfortable teaching them. (FG3-T1)

There were two scenarios that were not culturally accepted; one that dealt with a girl's body and the other with love. (FG3-T5)

These themes do not fit into either our culture or our religion, and it was very uncomfortable to teach these topics in the mixed-gender class. (FG3-T4)

To sum up, the results demonstrate teachers and adolescents' different perspectives on the app's purpose and utility and how they experienced using the app as users. Both teachers and adolescents consider the HH app to be a tool that provides problem-solving skills and helps the adolescents see various prospective solutions. The adolescents believe that the app helps them deal with daily problems and allows them to think differently when a problem arises. Simultaneously, teachers believe that the app also teaches adolescents how to handle and process positive and negative thoughts. Both groups consider the app highly relevant in the education of the targeted displaced adolescents. Despite the app's relevance and importance, there were few challenges related to the cultural appropriateness that resulted in the teachers opting out of facilitating two of the scenarios.

5.1.2 Teachers' "theories of mind"

This topic is about the teachers' understanding of psychological well-being and their perception of the factors that affect adolescents' well-being, as well as the need for PSS initiatives in the education of displaced adolescents. The researcher asked the teachers if they could express their understanding of psychological well-being. They responded as follows:

Psychological well-being is a state that all people have, it goes both ups and downs, and just as one takes care of the physical state, one must also take care of the mental state as well. (FG3-T4)

Psychological well-being is about the mental balance a person has. There is a balance between the negative and the positive forces, and in order to achieve mental wellness, neither of those sides should dominate the other. (FG3-T5)

Psychological well-being is also about the mental state of a person. (FG3-T3)

The teachers believed that psychological well-being is about a person's mental state. They assumed that if a person manages to distinguish between negative and positive forces and how to deal with the negative thoughts, then a person will be in a state of well-being. The teachers also addressed that to deal with negative and positive thoughts, one needs guidance on processing those thoughts.

The teachers discussed further that a person's mental well-being is affected by various internal and external factors. During their interactions with the adolescents, they have

observed which factors most influence their well-being. The first factor that has been mentioned is the family and family members' relationships with each other.

I think that the family's relationship with each other greatly affects adolescents' well-being. If the family function dynamically, then it creates a safe environment around their child. (FG3-T4)

If the family is well, then the child will be well too, and vice versa. (FG3-T2)

Here, the teachers believed that the family members' relationships with each other are crucial because they create a stable environment that contributes to increased security around the child. If the family members do not function well with each other, this will naturally affect the child's well-being.

The second factor that teachers considered important in influencing adolescents' well-being is their living conditions:

Most of the adolescents who live in a tent struggle with a little place, and lack of privacy. (FG3-T4)

Many siblings share the same room and perhaps the same clothes. (FG3-T5)

The teachers focused initially on adolescents who live in a tent. Their perspectives demonstrate that there is a connection between adolescents' well-being and their living conditions. Factors like small living areas with no room for privacy, so the adolescents mostly share space with other family members, contribute to adolescents' lack of a sense of autonomy, which is strongly linked to well-being.

Furthermore, the teachers elaborated that the factor concerning living conditions is highly linked to the family's financial situation, which makes it another factor that influences adolescents' well-being.

One of the most critical factors that affect both the family's and the child's well-being is their current financial situation ... When the family lives in poverty due to a lack of financial resources, it will naturally affect their well-being (FG3-T5)

Teachers also said that many families live in poverty due to various reasons, such as the country's economic situation and lack of jobs and labor rights for Syrian refugees. These reasons lead to many Syrian families living in an economically limited way and others under extreme poverty. This is a significant stress factor for the whole family, which naturally affects adolescents' mental well-being.

The teachers mentioned two factors that mainly affects the well-being of Syrian adolescents, especially the boys:

The most significant impact on adolescents' well-being is the lack of a sense of belonging. I have observed my student; most problems they face are related to the sense of belonging. (FG3-T1)

They live in insecurity; they do not know if they will stay here or return to their home country. (FG3-T2)

They feel limited and controlled, especially those who live in a refugee camp. They miss the feeling of freedom. (FG3-T4)

A sense of belonging and feeling of freedom are factors closely connected. The teachers have observed that these two factors affect adolescents most. In their conversations with the students, teachers have heard that most male adolescents feel limited in Lebanese society; they miss the feeling of freedom and belonging. The teachers also mentioned that many conflicts occur between young Syrian and Lebanese boys at school because of their ethnicity, with the Syrian boys often being told they do not belong here. These factors affect adolescents' well-being because they feel they are less valuable than other Lebanese adolescents.

Other factors that influence the well-being of adolescents are war memories and traumas. The teachers mentioned the following:

An important factor that affects their well-being is the experiences they are left with after the war and after displacement. (FG3-T4)

Many have experienced shooting and bomb sounds. Others have lost some of their relatives. (FG3-T5)

Many of the adolescents have fled from areas in Syria where they experienced war. Those adolescents have survived traumas such as shooting and bombing in the neighborhood and are living with painful memories and losses. Others have experienced losses of a family members or the kidnapping of a loved one. These are extremely painful experiences typically affect mental well-being. One of the boys from the male adolescents' focus group mentioned an incident where he has lost one of his family members in the war. He described how this incident affected him and how he reacts when he remembers:

A family member of mine died due to the war in Syria, and when I remember this incident, I isolate myself in a room and avoid talking to anyone. (FG2-B15A)

Finally, the researcher asked teachers about their consideration of the role of psycho-social support in the education of displaced adolescents in Lebanon. Their responses were as follows:

Programs that provide psychosocial support are crucial for adolescents. (FG3-T4)

Such programs have a high effect on adolescents' well-being because they teach important and relevant topics. (FG3-T2)

In my opinion, such programs are crucial because they make it easy to talk with adolescents about their difficulties. (FG3-T1)

Here, teachers certainly believe that programs that provide psycho-social support are essential in the education of displaced Syrian adolescents. Such programs address relevant topics related to them and make it easier to talk about their challenges. The teachers emphasized that digital PSS programs are particularly effective because they are made as an app or a program, which attracts adolescents. The teachers also underlined that such programs make it easier for them as educators to talk with adolescents about complex topics, topics that may not be common to talk about or are not socially accepted. One of the teachers elaborated further that PSS initiatives are crucial for adults and parents as well because they also need to be educated on how to deal with issues that affect their mental well-being:

Programs that provide psychosocial support are crucial for adults and parents as well because those groups of people also need guidance on how to be aware of their mental well-being. (FG3-T4)

To summarize, the teachers' definition of psychological well-being was varied. They stated that it is a person's mental state, where they manage to deal with both negative and positive thoughts in a balance. Psychological well-being is a condition that all people have, and one needs knowledge and guidance on how to cope with their thoughts and emotions. The teachers further discussed that various factors influence adolescents' well-being, and these factors are primarily related to their current situation as refugees. These influential factors were family and their relationship with each other, living and financial conditions, a feeling of belonging and freedom, and war memories and traumas. The teachers elaborated further that there is a need for PSS initiatives in the education of Syrian adolescents because those initiatives teach relevant topics and make it easy to talk with adolescents about their difficulties.

5.1.3 App impact on adolescents' well-being

This topic is about teachers' and adolescents' perspectives on how the app impacts adolescents' well-being. As a sub-theme under this topic, the researcher asked the adolescents if the app had led to any positive effect. They responded as follows:

I felt happy when I played the app, especially when I had the influence in helping the characters. (FG1-G13)

The app helped me to feel good, and I've got more positive energy when I wake up in the morning. (FG2-B15B)

The male and female adolescents' responses indicated that the app had a positive effect by giving them a feeling of happiness and positive energy. They elaborated further that because they were allowing contributing with help, they got a feeling of worthiness. Besides, the adolescent said that after playing the game and their participation in reflective conversations around the topics in the class, they noticed that they are not as negatively affected by the challenges they encounter in everyday life. Also, the teachers mentioned that the app has contributed to the absence of negative effects in adolescents because they learned how to distinguish between positive and negative thoughts

I'm no longer embarrassed when someone bullies me or says ugly things. I started thinking this way after we played the app and reflected on the theme with our teacher. (FG1-G14C)

I am no longer as much negatively affected when a problem occurs. (FG2-B13C)

When the students learned to distinguish between red and green [positive and negative] thoughts, it led to developing their ability to process the red thoughts. It has become more orderly in their heads, which in itself leads to a form of well-being. (FG3-T5)

The conversation with the adolescents demonstrates that the app has led to increased self-efficacy in adolescents. One of the girls mentioned that she used to be nervous in front of the class, but after playing the game, she became more confident. Another adolescent from the male group also said that he has become more confident, but this time, concerning openness around his feelings and difficulties. Teachers' views were similar as they noticed that some of the adolescents developed the ability of self-support. The participants described:

I was always scared and nervous when I had to say something in front of the class, but now, I feel less afraid. I got more confidence/ I became more confident. (FG1-G14B)

I have become more confident in myself, also when it comes to talking about my feeling and my difficulties. (FG2-B13A)

I experienced that one of my students developed a remarkable ability to support himself because he wanted to enroll in an English course, but he doubted himself and had hesitant thoughts. After the app, he began to support himself and switch the dubious thoughts with more motivational thoughts. (FG3-T1)

The researcher asked all three groups whether the app contributed to any form of social recognition among the adolescents. There were not many responses to this theme from the adolescents, but one of the girls said she felt that her opinions became important after using the app. However, the teachers were more involved in the reflection around this theme. At the beginning of the HH sessions, the teachers observed that students who live in ordinary houses wouldn't accept sitting beside or collaborating with students who live in refugee camps. The teachers mentioned that this problem is frequent among the adolescents in their school. They elaborated further that after playing the app, those students became friends and started doing

various activities together. The teachers also observed that, after finishing the HH sessions, those students are still good friends. The teachers concluded that the app provided the adolescents with an understanding that the social division between the poor and those who can afford more is unimportant.

The adolescents in both focus groups mentioned that after using the app, they began to feel optimistic. Their optimism was linked to the future and was based on the belief that their situation will get better.

I learned that there is a solution to everything and that things would get better. (FG1-G13)

When I have a terrible day, I try to think that tomorrow will be better. (FG2-B12)

I started imagining what the situation would look like in a week, a month, a year ... It's a strategy I use when I look forward to something. (FG2-B15B)

Both female and male adolescents were asked about their reaction tendencies due to emotional challenges before using the app. The theme concerning emotional coping was sensitive, and the adolescents were a bit uncomfortable expressing their reactions. However, they managed to open up, especially the female adolescents, while male adolescents found it challenging to express their feelings. They were asked how they used to react under challenging circumstances, more specifically when they got angry. Their responses were the following:

I used to get very angry, and sometimes uses physical violence, like beating others (FG1-G14A)

I used to be angry, and sometimes scream. (FG2-B13A)

They were also asked to describe their reaction when they got scared:

I used to shrink myself under the duvet at night and play games with my phone. (FG1-G14A)

I used to be very scared and unsure, failed to stand and became very tired in my body. (FG1-G13)

I used to be quit and avoided talking to anybody. (FG2-B15B)

Moreover, they were asked to describe further how they used to react when they experienced a painful memory:

I cried every time it appeared a bad memory. (FG1-G13)

When I had a bad memory, I used to either scream or arguing with someone at home. I also used to tell my family, “do not talk to me” or “leave me alone (FG1-G14A)

I used to be afraid. (FG2-B13C)

And lastly, they were asked how they used to express their emotions during difficulties:

I used to hold everything inside me. (FG1-G14B)

I’m not used to expressing my feelings. (FG2-B15A)

The teachers also noted that, previously, their students were not capable of expressing their feelings. They noticed that students hold their feelings inside and avoid talking about them. One of the teachers (FG3-T4) mentioned that, generally, it’s unusual in their culture to be open about emotions, especially the young boys.

A similar question was directed to the adolescents, but this time concerning emotional coping after using the HH app. The aim was to bring out adolescents’ perspectives about whether the app has changed how they manage challenging circumstances. Both male and female adolescents indicated that the app helped them and improved their willingness to talk about emotions. The teachers also stated that the app promoted students’ ability to express their emotions because it made them reflect on their feelings. They have also observed students discussing and analyzing their thoughts with each other.

It was exhausting to suppress emotions for a long time, that’s why I prefer to talk about my feelings now. (FG1-G13)

It has become easier to deal with difficult situations because now I know I’m not alone. Others are also struggling with other things. (FG2-B15B)

It has become easier to cope with difficult situations after using the app. (FG2-B12)

I think that the HH app affected adolescents' well-being and taught them how to cope with their emotions. The students were often caught up in their thoughts and were influenced by external factors. Those students had no one to talk to, and at school, we only talked about school subjects. The app made them reflect on their own feelings and thoughts. (FG3-T1)

Interestingly, one of the teachers mentioned that the app helped him cope better with his difficulties:

The app helped me see "hidden" problems I was not aware of. I sometimes face difficulty when I experience stress, and the app helped me sort out my thoughts and made it easy to reflect and find solutions. (FG3-T4)

The conversations with all three groups suggest that the app has improved adolescents' ability to provide social support. Both male and female students mentioned that they became better at supporting their friends and siblings when encountering difficulties. The adolescents also said that they try to teach the app to their acquaintances, so they learn how to solve their problems.

To summarize, the app's impact on adolescents' well-being was proven to be notable. After the adolescents used the app, evidence shows that it may have positively affected and minimized their negative mood they have learned to distinguish between positive and negative thoughts. The results also show that the app has increased adolescents' self-efficacy as they developed self-support and a feeling of confidence. Teachers have recognized that the app contributed to social recognition among adolescents, as the social division concerning the socio-economic condition no longer matters. Furthermore, the adolescents became more optimistic about the future after they used the app. As for adolescents' emotional coping before and after using the app, some indications show that it became easier for adolescents to handle difficult situations and share their emotions with others.

5.1.4 App impact on emotional problem-solving skills

The data extracts under this topic illustrate teachers' and adolescents' consideration of the app's effect on emotional problem-solving skills. As a sub-theme, the researcher discussed if the app contributed to adolescents' self-management. One of the teachers (FG3-T4) mentioned an example where one of his students started to reflect on how she can react

differently during conflicts at home with her siblings. The adolescents also said that they struggled with self-control before using the app, but now, they are more aware of their reactions and behaviors.

When I used to argue with someone, I did not know how I should behave or react. Now after using the app, I try to remind myself how the different characters used alternative ways to solve their problems. (FG1-G13)

I try to be calm and ignore the problem, but it isn't easy because self-control is not always possible in every situation. (FG2-B15A)

I started to calm myself down when a problem arises and avoid exploding. (FG2-B15B)

Both adolescents' groups were asked if the app has contributed to their decision-making ability. Their responses were the following:

Once, a person bullied me, and I instead of reacting, I controlled myself and did not allow him say anything hurtful. I also went and told my teacher about it. (FG1-G14A)

One day, someone in the neighborhood was rude and bullied me, I got angry, but instead of starting a fight with him, I chose to ask for advice from my father. (FG2-B15B)

Most of the experiences the adolescents shared were associated with bullying. Generally, they mentioned that they used to fight when someone who bullied them. Now, they try to make sensible choices when they face similar situations. One of the teachers (FG3-T1) also noticed a change in students' actions toward each other:

I noticed a change in students' relationship with each other because there was an incident where a group of students from the same refugee camp used to be mean to one of the boys in the same group. After using the app, the boys admitted to the teacher that they were naughty and decided to apologize to the boy because they realized it was wrong. (FG3-T1)

We discussed further in the teachers' focus group if the app contributed to increased help-seeking in adolescents. The teachers mentioned that, previously, their students were afraid of sharing their challenges because they thought it was taboo. After using the app, they observed

an increase among the students in seeking help and asking for advice. One of the teachers shared an example of her student that dared to open up and shared an acute condition:

One of my students came to me after playing the scenario that dealt with suicidal thoughts and told me that she had thought about suicide herself because she is not feeling well at home. I'm following up with this student now. (FG3-T2)

The teacher (FG3-T2) elaborated further that she was not expecting this situation, and she became unsure how to deal with her student. But the teacher was also happy that this student chose to share her thoughts. The teacher thinks that the app had a significant role for this student, especially after playing the scenario concerning suicidal thoughts.

The adolescents also shared their experiences related to help-seeking after they used the app. They realized the importance of seeking advice, and most of them assumed that they would ask for help when a problem arose in the future:

I have learned that it is better to talk with someone I trust and ask for advice instead of reacting right away. (FG1-G14C)

I will share my problems with a friend I trust. (FG2-B13A)

To summarize, it appeared from the discussions with the three focus groups that the app has impacted adolescents' self-management, decision-making, and help-seeking. It also seems from the data extract that adolescents have become more aware of their reactions and behaviors. The data shows that they started to reflect on their decisions and act differently when facing a problem. The teachers stated that the app had facilitated adolescents to understand the importance of help-seeking. Based on teachers' observations of their students, they started seeking help and advice after using the app.

5.1.5 Suggested improvements of the app

The last topic we discussed in the focus group interviews was user experiences and their feedback for the HH app developers. The first sub-theme informants addressed was related to cultural adjustment, with both teachers and adolescents desiring adjustment to the translation and the scenarios in the app:

They who created the HH app should include someone who know the Arab culture and Arabic language so they can create a more relevant scenario. (FG2-B15A)

The translation does not have to be literal because some words were culturally inappropriate. One can opt-out or replace inappropriate words with more appropriate words. (FG3-T4)

Some scenarios can also be adjusted to suit the culture of the target group. (FG3-T5)

The informants believe that the app's language does not need to be translated verbatim, because some words and expressions do not suit their culture. The same applies to the content of some scenarios. Everything must be adjusted so that it fits in culturally.

In the discussion, some of the teachers addressed an important view; adolescents' parents should be involved and informed of the apps' purpose and content. They believed that involving the parents in the interventions' content would benefit the adolescents. One of the teachers also mentioned that the app could be beneficial for the parents as users because they also need knowledge about psychological well-being and problems related to it:

Parents should be involved in the app; either they get the opportunity to play it or make a similar app for them so they can gain knowledge about the problem. (FG3-T2)

The parents should receive courses/information on red and green thoughts so that when the student talks about their challenges at home, the parents can have knowledge. (FG3-T4)

Informants from the male and female adolescents group desired more scenarios in the app. Their message to the HH app facilitator is to create more relevant scenarios with topics related to their everyday lives:

Maybe they can build more scenarios so we can learn about more relevant topic. (FG1-G14A)

I wish for the HH app to be expanded so we can learn about more relevant problems, e.g., problems related to school, problems at the street between boys, problems between siblings at home. (FG2-B15B)

And lastly, the teachers mentioned some practical feedback related to the user interface, such as the font size, characters, and other technical details:

The font size was too small; maybe make it bigger. (FG3-T4)

The app should include videos, not just photos, to get more insight into the different stories. (FG3-T5)

Some of the characters can be adjusted, e.g., some of the adult characters may become a little softer because some characters seemed very strict. (FG3-T4)

To summarize, the outcome from the focus group interviews concerning user experience and feedback on the HH app showed that the app should be more culturally appropriate, e.g., more relevant scenarios, not a literal translation of the language, etc. The teachers/ PSS staff also suggested parents should be involved in the intervention—both as users to gain knowledge about psychological well-being and related problems, and as parents—because this would benefit the adolescents. Teachers/ PSS staff also had some practical feedbacks related to the user interface, e.g., larger font size, including videos and not only photos, etc.

5.2 Quantitative data

5.2.1 Change in adolescents' well-being from before and after the HH intervention

This section demonstrates results concerning the WHO-5 from the pre-and post-tests. First, the complete results are presented and then followed by a table that illustrates the mean scores for each of the WHO's five well-being questions.

Table 2, as shown below, illustrate the total results from before the adolescents played the HH app to after they had finished the 10-session intervention during which the app was used. The result from the post-test shows increased well-being, with both female and male adolescents reporting a great positive change in well-being. The female adolescents scored slightly higher than male adolescents both before and after playing the HH app, but boys also seemed to benefit greatly from it. The difference in the number of participants from the pre- to the post-test must also be considered, as there are fewer participants in the post-test than the pre-test.

Table 2: Change in well-being, as reported by displaced Syrian adolescents on the WHO-5 after playing the HH app. (St. D. = Standard deviation)

Participants	Pre-test (N)	Pre-test St. D.	Post-test (N)	Post-test St. D	Change
Total	55.31 (N=104)	23.808	63.23 (n=73)	26.057	+7.92
Female	56.71 (n=56)	24.788	66.00 (n=34)	27.542	+9.29
Male	53.67 (n=48)	22.760	60.82 (n=39)	24.797	+7.15

Total results from before the adolescents played the HH app to after they had finished the 10-session intervention where the app was used.

Figure 7A and 7B in the next page illustrates a graphic form of the same results as in table 2.

Figure 7A: Change in well-being. The total score, as reported by displaced Syrian adolescents on the WHO-5 from before having used the HH app.

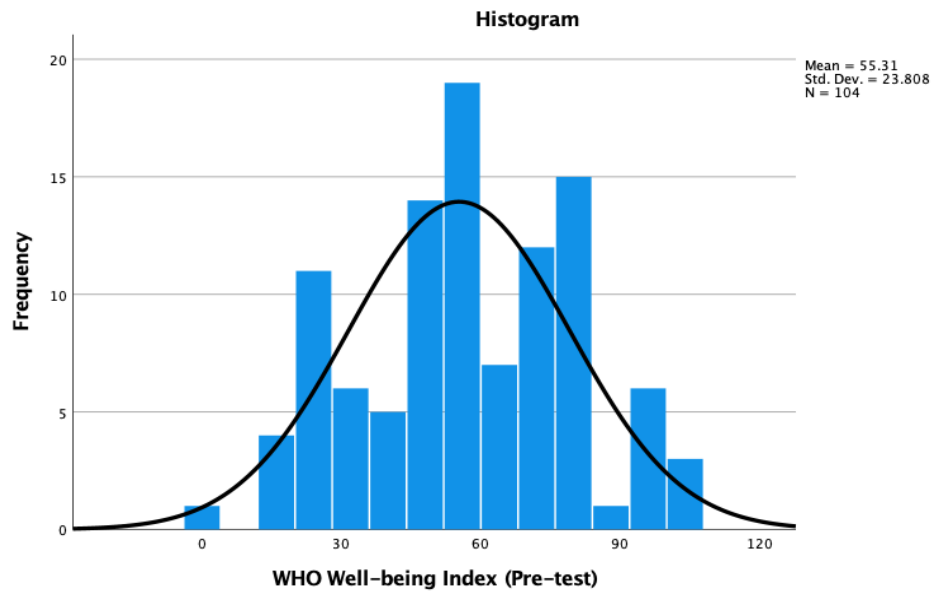
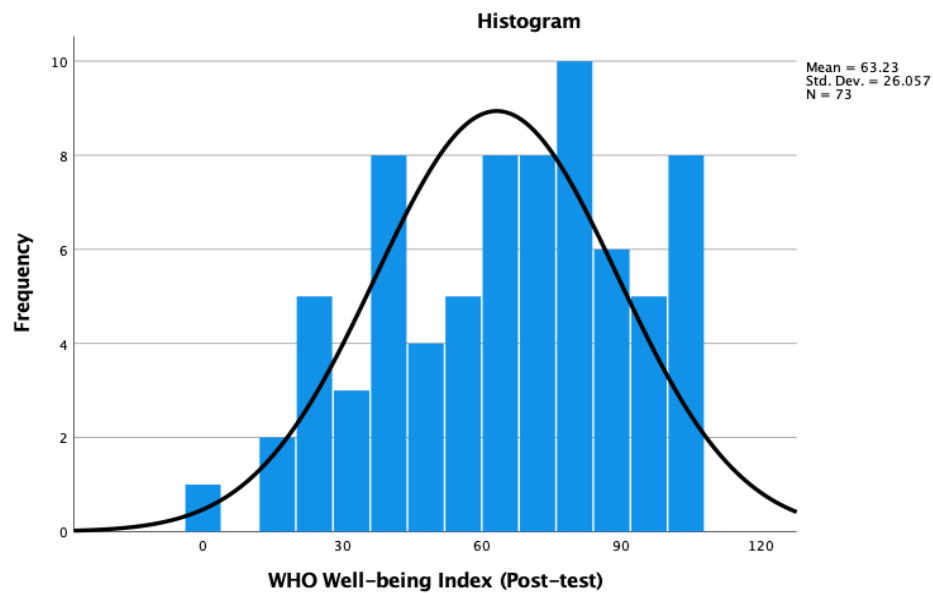


Figure 7B: Change in well-being. The total score, as reported by displaced Syrian adolescents on the WHO-5 from after having used the HH app.



The standard deviation, measuring the average deviation from the mean, shows a relatively large dispersion among the values in both the pre-test (St.D. = 23.808) and post-test (St.D. = 26.057), with no notable difference among the genders. However, as shown in table 3, when looking at the skewness of the distribution we see a shift in the distribution to higher Index scores when comparing pre-test skewness (-.139) to post-test (-.366). This was particularly evident among female adolescents with post-test skewness (-.678) showing a distribution of markedly higher Index scores than when looking at the pre-test skewness (-.293). The females showed a skewness toward higher than median scores on both the pre- and post-test, but for the males, there was a shift in lower than median Index scores pre-test (+.047) to higher than median Index score post-test (-.096). Keep in mind that negative numbers of skewness indicate higher than median Index scores.

Table 3: *Skewness of the distribution of the scores on the WHO-5.*

	Pre-test Skewness	Post-test Skewness	Difference Skewness
Males	+.047 (n=48)	-.096 (n=39)	-.143
Females	-.293 (n=56)	-.678 (n=34)	-.385
Total	-.139 (N=104)	-.366 (n=73)	-.227

Table 3 shows a shift in the skewness of the distribution to higher Index scores when comparing the total pre-test skewness to post-test skewness.

Furthermore, an independent samples t-test was run to compare the means of the post- and pre-test to determine whether there is statistical evidence of change in the adolescents' well-being. When evaluating the statistical significance of the Happy Helping Hand app's effect on the adolescents' well-being when comparing the pre-test to the post-test, we must postulate a hypothesis (H1) and a null hypothesis (H0):

- **H1:** The HH app has improved the well-being of adolescents when comparing the pre-test to the post-test.
- **H0:** The HH app has not improved the well-being of adolescents when comparing the pre-test to the post-test.

If $p \leq .05$, the test is statistically significant \rightarrow strengthening H1 (The HH app has improved the well-being of adolescents when comparing the pre-test to the post-test.). If $p \geq .05$, the test is not statistically significant \rightarrow strengthening H0 (The HH app has not improved the well-being of adolescents when comparing the pre-test to the post-test.). As we can see below

in table 4, the Sig. (2-tailed) with equal variances assumed is .017, showing a strong statistical significance ($.017 \leq .05$), thus strengthening our hypothesis that the HH app has improved the well-being of adolescents when comparing the pre-test to the post-test (H1).

Table 4: Independent Samples *t*-test.

	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
						Lower	Upper
WHO Well-being Index Scores	-2.415	187	.017	-8.854	3.665	-16.084	-1.623

Table 4 shows the compared mean from the pre-and post-test of the WHO-5 to determine whether there is statistical evidence of change in well-being. ($t(187) = -2.415, p = .017$).

Moreover, Hedge's *g* was used to measure the effect size from the pre- to the post-test, which allows us to see the effect size of the WHO-5 measuring the change in adolescents' well-being from pre- to post-intervention. Hedge's *g* is a measure of effect size that shows how much one statistical sample differs from another (Hedges & Olkin, 1985). A Hedge's *g* of 0.2 shows an effect, but a small one. A Hedge's *g* of 0.5 shows a medium-sized effect, and a *g* of 0.8 shows a large effect. Our Hedge's *g* showed a small to medium effect with a Hedge's *g* of 0.359.

5.2.2 Feasibility and usefulness of the HH app

This section illustrates the results from the post-test, where the adolescents answered questions related to the game's feasibility and usefulness. The section contains two different results of the same questions; one demonstrates the original mean scores as reported by Syrian adolescents, and the other shows inverted scores of the original scores. A description of why there are two different scores will be found through this section, followed by a detailed discussion in *Chapter 6 Discussion and analysis*.

As shown in Table 5A, the displaced Syrian adolescents largely reported mid-level values on the variables of feasibility and usefulness of the HH app. Each variable has a measuring scale ranging from 1-10, where variable 1 (do you think the game makes you feel better?) measures a scale where 1=no, not at all – 10= yes, very much. Variable 2 (how educational do you think the game was?) measures a scale where 1= not educational – 10= very educational. Variable 3 (how useful do you think the game can be for youth?) measures a scale where 1= not useful – 10= very useful. Variable 4 (did you like the game?) measures a scale where 1= not at all – 10= very much. And variable 5 (do you think it was easy to understand what to do in the game?) measures a scale where 1= very difficult – 10= very easy. The total mean score on feasibility and usefulness was 27.23. This means that the adolescents gave approximately middle scores on questions related to feasibility and usefulness.

Table 5A: *The original scores as reported by displaced Syrian adolescents on feasibility and usefulness of the HH app.*

Variables	n	St. D	Mean score
Do you think the game makes you feel better?	73	3.151	4.99
How educational do you think the game was?	71	3.139	5.51
How useful do you think the game can be for youth?	71	3.168	5.18
Did you like the game?	71	3.471	5.42
Do you think it was easy to understand what to do in the game?	70	2.988	6.13
Total score			27.23

Table 5A shows the original scores on the feasibility and usefulness of the Happy Helping Hand app as reported by displaced Syrian adolescents (n=73) in Lebanon. Numbers are reported in standard deviation (St. D) and mean scores on a scale from 1 (min) to 10 (max) in five questions.

Table 5B, however, shows a different mean score of the same questions as in Table 5A. Here, we can see that the adolescents reported slightly above mid-level values on the app's feasibility and usefulness. The total mean score here is 32.77. This means that the adolescents gave slightly above middle scores on questions related to feasibility and usefulness.

Table 5B: *Inverted scores of the original scores on feasibility and usefulness of the HH app.*

Question	n	St. D	Mean score
Do you think the game makes you feel better?	73	3.151	7.01
How educational do you think the game was?	71	3.139	6.49
How useful do you think the game can be for youth?	71	3.168	6.82
Did you like the game?	71	3.471	6.58
Do you think it was easy to understand what to do in the game?	70	2.988	5.87
Total score			32,77

Table 5B shows inverted scores on the feasibility and usefulness of the Happy Helping Hand app as reported by displaced Syrian adolescents (n=73) in Lebanon. Numbers are reported in standard deviation (St. D) and mean scores on a scale from 1 (min) to 10 (max) in five questions.

The reason why two different tables of the same questions are presented, where one illustrates the original results and the other shows inverted numbers, is because I assume that a measuring error has occurred in this data set. The measuring error may be due to several reasons, such as reversed numbers on the measurement scale of the five variables when the survey was translated from Norwegian to Arabic; lack of access to electronic devices (e.g., smartphone, iPad, computer); and lack of guidance from teachers due to lockdown in Lebanon and closed schools. This will be further discussed in detail in sub-chapter 6.4.1 *Measuring errors*.

5.3 Synthesis of results

This chapter provided a comprehensive presentation of the data outcome from our participants in this study. The results are triangulated as they consist of data from focus group interviews and a survey completed before and after the Happy Helping Hand intervention. The evidence shown in this chapter is essential to examine the study's aim: the app's contribution as a digital PSS intervention in improving the adolescents' well-being and emotional problem-solving skills, and how the app's experienced among our targeted group. The results also provided evidence related to internal and external risk factors contributing to the adolescents' well-being and how culture plays a central role in implementing such

interventions. Moreover, the data provided a broad understanding of the importance of psychosocial support interventions in the field of displaced adolescents. Thus, we will discuss the outlined findings considering previous research and relevant theories in the next *Chapter 6 Discussion and analysis*.

6. Discussion and analysis

This study is exploring how a digital mental health intervention affected the well-being and problem-solving skills in youth, when used as a digitalized psychosocial support program in education for displaced Syrian adolescents living in poverty. The digital program that was investigated in this study was the Happy Helping Hand app, a digital cognitive behavioral-based psychosocial support tool that aims to promote well-being and problem-solving skills in adolescents. The targeted group was displaced Syrian adolescents aged 12-17 living in Lebanon, and the intervention was implemented at a non-formal education center for Syrians. The discussion will be centered around the findings from our research questions, which are the following:

Does the Happy Helping Hand app contribute as a digital psychosocial support tool in improving well-being and emotional problem-solving skills in adolescents?

- *How has the app affected well-being among displaced Syrian adolescents?*
- *What changes in adolescents' well-being were found from before to after the Happy Helping Hand intervention was implemented?*
- *What were adolescents and teachers/ PSS staff experience of how problem-solving skills among displaced Syrian adolescents are affected by the app?*
- *How did the adolescents and teachers/ PSS staff experience the usefulness and feasibility of the HH app?*

Our study is the first to investigate the Happy Helping Hand intervention where the app was implemented in a classroom environment for (N=104) displaced Syrian adolescents with teachers/ PSS staff as facilitators. The main findings from our study were:

1. The Happy Helping Hand app as a digital psychosocial support program positively affects the targeted adolescents' psychological well-being.
2. There was a documented change in adolescents' well-being from before to after the HH intervention.
3. The Happy Helping Hand has contributed to improving adolescents' emotional problem-solving skills by impacting their behavior toward self-management, decision-making, and help-seeking.

4. The app is considered useful, relevant, and crucial for targeted displaced Syrian adolescents.

Other findings occurred in this study that was beyond the scope of our research question:

5. Cross-cultural preventive interventions in general, and specifically our investigated app, should culturally and contextually fit better with the Arab culture.
6. Several ongoing stressor factors influence the well-being of our targeted group of adolescents.

The main findings and other findings will be discussed and analyzed further in this chapter.

6.1 The Happy Helping Hand app positively affects adolescents' well-being

The Happy Helping Hand app affects adolescents' well-being positively. Evidence from focus group interviews with the teachers shows that the app might have positively affected and minimized adolescents' negative mood. The adolescents confirmed this by adding that they have learned to distinguish between positive and negative thoughts after using the HH app. The current HH app intervention is a cognitive behavioral-based program mainly designed, among other things, to improve adolescents' awareness of unhelpful, negative automatic thoughts and helpful thoughts and how to process them (Raknes, 2010a, 2010b, 2014). Thus, the results provide us with a justification to believe that the HH app improves adolescents' awareness of those thoughts and increases their ability to process them.

Second, teachers thought that the app had increased adolescents' self-efficacy by noticing a self-support tendency among them. The targeted adolescents confirmed this by explaining how they developed a feeling of confidence during various day-to-day situations. Heckman and Kautz (2013) mentioned in a previous study that character skills (e.g., self-control, trust, self-esteem, and self-efficacy) are, among other things, crucial skills to success in economic and social life. Further, interventions that contribute to the development of such skills are of great benefit to adolescents (Heckman & Kautz, 2013), particularly anxious ones (Raknes, Pallesen, et al., 2017). Thus, as the HH app intervention aims to improve life skills, among them character skills, in adolescents, and based on the outcomes from the focus group interviews, we can assume that the HH app contributes to creating positive life skills among targeted displaced adolescents, something that is highly important for their well-being.

Third, the outcomes from the teachers' group show that the HH app has contributed to positive social recognition as the social division concerning the socio-economic condition among adolescents no longer matters. According to a report by United Nations Children's Fund (2011) on the evaluation of PSS programs for adolescents in the West Bank and Gaza, it has been observed that such programs lead to great improvements in their relationships within their family, community, and social relations with peers and others (United Nations Children's Fund, 2011). Thus, based on the teachers' observations and this previous study, we can assume that PSS programs, which are the HH app in our research, contribute to positive social recognition among displaced adolescents. However, detailed observations of the adolescents' interactions with each other over a long period would be needed to confirm such an influence, which has not been the focus of this study. Thus, we have little basis on which to draw general conclusions that such a contribution takes place. Besides, other studies have investigated and observed a major degree of social similarities between Syrian adolescents and other refugee adolescents, especially between those living in refugee camps and those in ordinary housing, which often leads to social exclusion (DeJong et al., 2017; Guay, 2015).

Fourth, both female and male adolescents have become more optimistic about the future after they used the HH app. According to Richard Burns (2017), optimism is a key well-being dimension as it has excellent outcomes across a person's lifespan including into older adulthood. Evidence from previous studies indicates that psychological interventions, especially CB-based interventions, increase optimism levels during the intervention (Malouff & Schutte, 2016; Sitt, Zweig, & Marino, 2015). This gives us reason to believe that the HH app helps to increase optimism among the targeted displaced adolescents. However, it cannot be determined that increased optimism is maintained after the intervention is complete because the adolescents only noted an increase in optimism right after the 10 hour-long sessions. This may mean that optimism increased during the intervention, but we cannot be certain it was maintained after its completion.

Fifth, the adolescents reported that it is easier for them to handle difficult emotional situations and share their emotions with others after using the app. This suggests that the HH intervention contributed to strengthening adolescents' coping strategies during challenging emotional situations. This accords with previous research done on the Psychological First Aid Kit (PF) intervention, a CB-based intervention that forms the foundation for the HH app,

which shows that the intervention strengthens adolescents' emotional coping strategies (Raknes, Dyregrov, et al., 2017). Moreover, evidence from a randomized and controlled study shows that the analogue version of the Happy Helping Hand program used as a school-based intervention had a strong effect on reducing anxiety, impairment, and depressive symptoms among adolescents (Haugland et al., 2020). This study adds to the evidence of the potential of the HH intervention to increase adolescents' emotional coping skills.

Our finding aligns with cognitive behavioral theory, showing evidence that supports the “cognitive triangle” model that illustrates the relationship between thoughts, behavior, and emotions and how a change in one of those components leads to a change in the other. As the HH app contributes to changing automatic unhelpful, negative thoughts (red thoughts) and replace them with helpful thoughts (green thoughts), this will lead to, according to CB theory, a change in emotions and behaviors. This was documented through our findings as the adolescents show more tendency toward optimistic thoughts after playing the game. Thus, based on CB theories and evidence from our results, we have a more substantial reason to believe that CB-based interventions affect adolescents' well-being positively by improving their emotional regulation and increasing their coping skills. However, the documented improvements are according to the feedback from ten teachers and 104 displaced Syrian adolescents who participated in this study, and generalizations to other displaced Syrian adolescents in Lebanon or other countries, or to other adolescents in general, should be drawn with caution.

6.2 Indications of changes in adolescents' well-being after HH intervention

From a quantitative point of view, there has also been a documented valuable change in adolescents' well-being after using the HH app. The measurement scale used was the WHO-5. The WHO5 scale is considered useful both as a screening tool applied in clinical practice assessing, for example, depression, and as a measurement tool assessing well-being over time in research studies (Topp et al., 2015). In this study, well-being has been assessed before and after the HH intervention, where 104 adolescents participated in the pre-test and of these 73 evaluated the intervention quantitatively after its end.

The total mean from pre- to post-test, calculated as 55.31 and 63.23, shows a change of 7.92% in the WHO5 well-being index. In other words, there has been a total of 7.92% change

in adolescents' well-being after playing the HH app. Looking separately at the female and male groups, we can see a change in well-being calculated as 9.29% and 7.15%. This implies that the HH app has improved the participants' well-being, especially the female adolescents in this study. Further, our results are of strong statistical significance ($p=.017 \leq .05$), which strengthens our hypothesis. This is consistent with previous pilot studies investigating the HH app, showing an improvement in adolescents' well-being using the WHO-5 as a measurement scale from before to after the intervention (Raknes, 2020a, 2021). However, a follow-up has not been conducted after the post outcome from the WHO5 WBI, and thus we are unsure if the increase in adolescents' well-being is still maintained.

Moreover, the effect size in terms of Hedge's g was 0.359 from pre- to post-test, which indicates a small to moderate effect size. Because the HH intervention, considered as universal intervention, was delivered to a population of 104 (56 girls and 48 boys) displaced Syrian adolescents, the magnitude of the effect sizes for the intervention can only be expected to be relatively small (de Pablo et al., 2020). This means that it is normal to expect a small to moderate effect size from a universal CBT-based intervention (Stratton et al., 2017). Moderate to small effect sizes were also found in an experimental and randomized controlled trials study evaluating mental health and psychosocial interventions for children and adolescents affected by the Syrian crisis in a Middle eastern context (Panter-Brick et al., 2017). Nonetheless, despite the small size effect, the general impact of these small effects from universal prevention interventions can be important and result in dramatic improvements in public health outcomes (Deady et al., 2017).

6.3 Adolescents' emotional problem-solving skills are improved

The study's second main finding is that the Happy Helping Hand app is considered to improve targeted displaced adolescents' emotional problem-solving skills by impacting their self-management, decision-making, and help-seeking. This will be discussed from a qualitative perspective. First, indications from the focus group interview with teachers show that the HH app contributed to an increase in adolescents' self-management by observing a difference in their reaction patterns. The adolescents from the focus group interview added that they struggled with self-control before using the HH app, but after the intervention, they became more aware of their reactions and behaviors. This is consistent with existing research showing that psychosocial interventions effectively reduce disruptive behaviors among

children and adolescents (Berg, Johansen, Jacobsen, Forsetlund, & Nguyen, 2020; Fossum, Handegård, Martinussen, & Mørch, 2008). Hence, regarding the results from focus group interviews and previous studies, we have reason to believe that the HH app has impacted adolescents' self-management positively by increasing awareness around their behaviors and reactions. Nevertheless, since our results were collected shortly after the 10 hour-long sessions of the HH intervention, we can assume that there was not enough time to observe such an improvement in adolescents' reaction patterns, making it difficult to draw a firm conclusion.

Second, the adolescents' focus group outcomes indicate that the HH app had affected their decision-making as they have learned self-control in conflict or bullying situations. The teachers also observed that the adolescents attempt to make sensible decisions after using the app. Very few previous studies have investigated PSS or CB-based interventions' impact on adolescents' decision-making. However, previous research investigating adolescents receiving cognitive behavioral therapy (CBT) showed that it positively impacts their decision-making in the long term (Oldershaw, Grima, Simic, & Jollant, 2012). Our results are aligned with studies demonstrating that CB-based interventions can affect decision-making positively.

Third, our study indicates that the HH app facilitated adolescents to understand the importance of help-seeking concerning psychological and day-to-day challenges. Importantly, the teachers also observed that their students began to seek help and advice after using the HH app. This is a very promising result, since poor mental health literacy and stigma are barriers to seeking help (Mojtabai et al., 2011; Schnyder, Panczak, Groth, & Schultze-Lutter, 2018). Before using the HH app, teachers mentioned that many of their students were afraid of sharing their challenges because they thought it was taboo. This indicates that the targeted adolescents were hesitating to seek help before receiving the HH app intervention. After participation in the HH app intervention that aimed, among other things, to increase the knowledge around mental health and psychological challenges and shed light on the cultural stigma that limits seeking professional help, they became more willing to seek help and advice. Thus, we can assume that the HH app has increased adolescents' awareness of the importance of help-seeking, a mechanism that improves their problem-solving skills, which is highly important for their well-being. Our result is consistent with a previous meta-analysis of 98 studies that shows that interventions promoting help-

seeking improve attitudes, intentions, and behaviors to seek professional help and reduce the personal stigma of mental health issues (Xu et al., 2018).

Our findings align with Bandura's social learning theory (SLT) and Vygotsky's social constructivism, showing evidence supporting the core principle of how social and cultural environments and cognitive factors interact to influence human learning and behavior. First, according to SLT, behavior is shaped by positive and negative reinforcement and through observing others in a social context. We can consider the HH app as one of the environmental factors that influence adolescents' learning and behavior. By using the app, the adolescents observe and interact with the different characters and help them to master emotional challenges and to make sensible decisions. Further, adolescents' interaction with the game creates an experience of mastery, which is effective in promoting self-efficacy. According to SLT, this can develop ideas about how new behavior is performed, which can lead to a change in adolescents' behaviors. In our case, improvement in adolescents' problem-solving skills. However, to reproduce the newly-observed behavior, the adolescents need the motivation to do so and a belief in their ability (self-efficacy). Furthermore, as we have discussed how new behaviors can be shaped according to SLT, a question arose concerning the continuation of those newly-shaped behaviors; will the recently-formed behaviors in adolescents remain after their interaction in a social context (for us, the HH app intervention)? This question is beyond the scope of this thesis but can form the basis of later discussions.

Second, according to social constructivism, learning occurs through interaction in a social context and using cultural tools, which Vygotsky calls artifacts. Artifacts are resources such as digital tools (Säljö, 2001). We can consider the HH app as one of those artifacts. When adolescents use the HH app to learn problem-solving, their learning is mediated. Mediation, according to the theory, is about learning using tools or artifacts. This means using the HH app as an artifact to learn how to solve a problem. The result of such interaction, according to the theory, is a change in individuals, both cognitive and behavioral. In our case, it is a change in adolescents' behaviors toward problem-solving.

6.4 The HH app is considered useful and crucial

Another key finding shows that the HH app is perceived to be easy to use, relevant, crucial, and useful. These perspectives were reported both by targeted displaced adolescents and the

interviewed teachers/ PSS staff in this research and will be discussed first from a qualitative perspective and then from a quantitative point of view. The participants in this research were living in informal settlements in the Beqaa valley in Lebanon, where most of them are affected by poverty and limited access to resources. Even though the use of digital games in their education was unfamiliar, they found the HH app easy to use and learned crucial skills in a way they enjoyed. The teachers commented also that the games' content was relevant and engaging; relevant because it demonstrated challenges that are like those the adolescents face in their everyday lives and engaging because the adolescents were included as part of the game's decision-making. Our findings are consistent with an existing review of 49 studies investigating digital technology interventions, showing that such interventions are useful, easy to use, engaging, and create positive attitudes toward mental health problems (Naslund et al., 2017). Thus, the outcome suggests that digital PSS interventions, the HH app in our case, are highly relevant and essential for displaced targeted adolescents because they create engagement and allows them to participate interactively and creatively.

Furthermore, outcomes from the teachers/ PSS staff indicate that the digital game, the HH, also made it easier for them as educators to talk with adolescents about mental health problems and topics that generally are not socially accepted. Usually, mental health problems are taboo in the Arab culture, and anti-stigma interventions are needed (Dardas & Simmons, 2015), especially in low- and middle-income countries. Based on our evidence, the HH app seems to increase the awareness around mental health problems and the importance of being open about those challenges. Previous studies support our findings by demonstrating that digital prevention interventions, e.g., digital CBT interventions, effectively promote mental health awareness as face-to-face interventions (Cuijper, Straten, & Andersson, 2007). Additionally, for teachers/ PSS staff to deliver and guide a digital intervention for a group of adolescents or in a classroom, it is vital to provide teachers with time and comprehensive training before starting the intervention.

We should recognize some of the potential disadvantages associated with the use of digital interventions. First, most of the targeted adolescents in this study lacked access to technology due to their living conditions, and thus, to maintain access to the HH app, they depended on electronic devices provided by MAPs at their education centers. Second, adolescents who lack digital skills may find the technical part of using the HH app complicated and, therefore, may depend on having guidance from teachers/ PSS staff. Third, parents unaware of digital

PSS approaches may find them unfamiliar and rare, especially when their child shares their experience around the approach at home. Accordingly, evidence from our focus group with the teachers shows that parents should also be involved in the HH approach to increase their awareness of adolescents' psychosocial challenges and to become more included in their child's school life. Those challenges have also been found and overviewed in several existing studies concerning the use of digital technology as a preventive intervention in the field of mental health and psychological well-being (Hampshire et al., 2015; Haung et al., 2019; Samuels, Rost, Leon-Himmelstine, & Marcus, 2020).

Lastly, looking at our results from a constructive theoretical perspective, we see evidence that aligns with the theory. The core idea of Dewey's and Piaget's constructivism is that learning through play is essential for children's cognitive development, and children need to explore and experiment for themselves to construct new knowledge. Exploring and experiment create engagement, and when students use digital tools (the HH app in our case) in their learning, they construct new knowledge by testing ideas and actively engaging in problem-solving.

6.4.1 Measuring errors

The participating adolescents answered questions related to the game's feasibility and usefulness in the post-test. As we saw in the previous sub-chapter 5.2.2, the outcome presents two different mean scores where one demonstrates the original scores and the other illustrates inverted scores. The original total mean score of the five variables concerning feasibility and usefulness shows approximately middle scores (27.2%). This means that the adolescents in this study were partially satisfied with the feasibility and usefulness of the HH app. We see that the outcome from the survey is in contrast with the output from focus group interviews. Thus, I suspected that a measuring error has occurred in this data set. Furthermore, I hypothesized that during the translation of the survey from Norwegian to Arabic in the software program 'Quest Back', the raw score of each variable becomes inverted, e.g., (1=not useful – 10= very useful) becomes (1= very useful – 10= not useful). I tested my hypothesis by providing a sample test of the existing survey, and it appeared that the raw score was inverted. According to this, the total mean score of the variables concerning feasibility and usefulness was recalculated with inverted numbers, and the new total mean score was (32.7%), which shows slightly above middle scores.

However, the original and the inverted results show no major difference, which means that the HH app is still considered partially useful and feasible. The results are still in contrast with the focus groups' outcomes in this research and with a previous pilot study that measured the feasibility and usefulness of the HH app (Raknes, 2020a). Hence, there might be other reasons that caused such results. First, a complete lock-down in Lebanon due to the COVID-19 occurred while collecting the post-test data, which caused all schools and education centers' closure. Therefore, the teachers/ PSS staff had to send an electronic link to the survey via WhatsApp and e-mail so that students could complete it at home. Second, because the students had to answer the survey at home, they received no explanation or guidance on the procedure from the teachers, and thus, they had to figure it out for themselves. Third, the students lacked access to electronic devices, and most of them had to borrow their parents' phones, which probably was old with small screens. This could have led to a misunderstanding as the students could not see the raw score clearly through those small phone screens. Those are the possible explanation that might have affected our results, but we have no concrete evidence to support those hypotheses. Thereby, we cannot confirm any conclusion concerning the game's feasibility and usefulness based on a quantitative point of view; the results might be valid, and they might not be.

6.5 Cultural and contextual appropriateness

Our study has shown the Happy Helping Hands app's efficacy as a digital psychosocial support tool to improve well-being and emotional problem-solving skills for Syrian displaced adolescents in Lebanon. Consideration should still be given to the suitability of the app as a psychosocial intervention in this specific cultural context.

Despite showing positive effects and improvements on adolescents' well-being and problem-solving skills, our study also found that the Happy Helping Hand app could be more culturally and contextually appropriate. For example, the teachers/ PSS staff involved in implementing the Happy Helping Hand app for the adolescents in this study, decided to skip two central scenarios: namely a scenario concerning love between genders, and a scenario concerning body acceptance. According to teachers/ PSS staff, the reason for omitting these scenarios is that they were considered inappropriate and not suitable for adolescents. Furthermore, teachers/ PSS staff stated that the translation of some of the language used in the Happy Helping Hand app should be tailored to be more culturally appropriate.

Taking an ethical relativist point of view (see 4.9.2 *Research ethics across cultures*), by which ethical considerations depend completely on the cultural context, one could argue that the Happy Helping Hand app should be adapted so as to conform with the moral standards of Arab culture. In so doing, the scenarios considered inappropriate by teacher/PSS staff should be omitted from the Happy Helping Hand app when being implemented for displaced Syrian adolescents in Lebanon. This would allow for a greater acceptance and a smoother implementation of the intervention.

However, taking a more moderate approach to normative relativism, cultural differences should be understood and respected, but not necessarily conformed with. First, Arab culture is in no way uniform, but in fact quite diverse. How moral principles and norms are interpreted and practiced to a large extent depends on factors such as socio-economic background, religious background (moderate versus conservative), geography (rural versus urban), educational background etc. In fact, the Happy Helping Hand app has been implemented for displaced Syrian adolescents elsewhere in Lebanon without receiving negative feedback on the inappropriateness of certain scenarios nor language (referring to a conversation with Dr. Solfrid Raknes, 01.07.2021). This is evidence that the relevant scenarios in the Happy Helping Hand app is not necessarily considered inappropriate in Arab culture in general, maybe just in this specific context.

Although placing a great value on modesty, Arab culture is not bereft of sexual and romantic awareness. Taking into consideration my own experience when I was a student in a Syrian school, menstruation was a taboo and girls received no health information about the process in their education. It was not necessary because of stigmatization; menstruation is a biological fact, but because teachers lacked skills in teaching the topic, and because they tried to avoid the embarrassment around covering such topic.

Back to our discussion, rather than being perceived as an attempt to protect the adolescents by censoring the ideas conveyed in these scenarios, the teachers and PSS staff's reluctance to teach these scenarios can be understood as their attempts at trying to avoid the embarrassment associated with covering such themes. As these scenarios have been taught to adolescents elsewhere in Lebanon, the reluctance by these particular teachers/ PSS staff, is probably due to a lack of training and experience in teaching themes considered embarrassing.

Second, and nevertheless, as thoughts and emotions are influenced by the culture and environment in which individuals live, psychosocial interventions are not necessarily equally effective for people across different linguistic, cultural and social environments (Raknes & Gjertsen, 2020). Therefore, a psychosocial intervention that is not culturally adapted may not “reaching home” with the target audience. By not maintaining a level of cultural sensitivity, such interventions risk not being effective on the target audience.

However, as the Happy Helping Hand app is designed to be implemented in its entirety, all scenarios included. By omitting two vital scenarios from the intervention, the adolescents are denied the complete psychosocial support intervention, and consequently is likely not gain the full effect the intervention is designed for. As such, culturally adapting the Happy Helping Hand app could as well compromise the efficacy of the psychosocial intervention.

Nevertheless, the Happy Helping Hand app is a digital psychosocial support tool aimed at a cross-cultural audience and cannot be completely adapted to one culture. The intervention is not designed specifically for Syrian adolescents in Lebanon, but adolescents in general (it has already been launched in Norway). Adapting it to be suitable for a specific audience is likely to limit its efficacy and suitability for another audience. Adapting the Happy Helping Hand app to a specific cultural context risks doing so at the compromise of efficacy in another cultural context.

One could argue that certain language used in Happy Helping Hand app can be adapted without compromising the efficacy of the intervention. By adapting the use of words considered profane (such as “butt”, “tits”, and certain curse words) to a more formal classroom setting, is likely to help teachers/ PSS staff from the embarrassment of teaching them without compromising the intervention. This would definitively allow for a smoother implementation process.

However, one should take into consideration that cognitive-behavioral-based intervention practically, auditory and visually relatable and relevant for the target audience (Naeem et al., 2016). In fact, the adolescents using the Happy Helping Hand app most likely use such profanities when talking among themselves. Maintaining a level of informal language usage allows the intervention to be more relatable and relevant for the adolescent users.

Third, international rules, norms, and standards should also be taken into consideration when evaluating whether digital psychosocial support interventions, such as the Happy Helping Hand app, should be adapted to the cultural context. The United Nation's Sustainable Development Goal 3 seeks to "Ensure healthy lives and promote well-being for all at all ages" (United Nations, 2015). The wording "for all" implies that cross-cultural psychosocial support interventions, such as the Happy Helping Hand app, should be relatable and suitable – regardless of culture. Psychosocial support interventions that hold a universal or Western ethnocentric profile, without maintaining a level of cultural sensitivity, risks defying the UN Development Goals.

Furthermore, article 13.1 in the Convention on the Rights of the Child states that "The child shall have the right to freedom of expression; this right shall include freedom to seek, receive and impart information and ideas of all kinds, regardless of frontiers, either orally, in writing or in print, in the form of art, or through any other media of the child's choice" (Office of the United Nations High Commissioner, 1989). Therefore, efforts to censor parts of the Happy Helping Hand app, risks undermining the adolescents' rights to seek, receive and impart information and ideas of all kinds as given in the Convention on the Rights of the Child.

Moreover, The United Nations Population Fund (UNFPA) recommends a 'Comprehensive sexuality education (CSE)' (UNESCO, 2018) in education. This is a curriculum-based teaching process, based on human rights principles, that goes beyond specific sexuality education to address issues such as human development, family life, relationships, culture and gender roles, as well as fostering positive values regarding personal sexuality. Shying away from topics related to sexuality, because of cultural taboos, would therefore be contrary to the recommendations given by the United Nations.

Our research found a reluctance by teacher/PSS staff in teaching parts of the Happy Helping Hand app they considered inappropriate and not suitable for adolescents. They also showed misgivings of the very informal language usage in the app. If digital psychosocial support interventions, such as the Happy Helping Hand app, does not maintain cultural sensitivity and is not adapted to the specific cultural context, they risk not "reaching home" with the target audience and therefore be less effective than possible. A lack of cultural sensitivity also goes against the recommendations made in the UN Development Goals that well-being must be

promoted for “all”, regardless of culture. Being culturally sensitive would also allow for a greater acceptance and a smoother implementation of the intervention.

But again, by censoring parts of the intervention considered culturally unsuitable undermines the adolescents’ rights to seek, receive and impart information and ideas of all kinds, as given in the UN Convention on the Rights of the Child. It also goes against the UN recommendations of providing sexuality education in education. Furthermore, adapting the Happy Helping Hand app to the cultural context risks doing so at the compromise of efficacy. By censoring parts of the intervention, the adolescents will not gain the full effect the intervention is designed for. Modifying the language in the app is likely to make it less relatable and relevant for the adolescent users. Perhaps it can be necessary to take teachers’ and PSS staff’s considerations of how to implement the HH app following the best practice ideals and international norms and recommendations?

This approach seems feasible in view of the fact that the Happy Helping Hand app in its current format is not necessarily considered inappropriate in Arab culture in general. It has been implemented for Syrian adolescents in other parts of Lebanon without receiving negative feedback. The Happy Helping Hand app is a cross-cultural and universal PSS intervention and cannot be adapted to suit every single cultural context it is implemented in. Consideration should be given on its overall efficacy when implementing it across cultures, as adapting psychosocial interventions, such as the Happy Helping Hand app, has vital benefits, but also some impairments.

6.6 Stressors influencing the adolescents’ well-being

Beyond the scope of our research question, another finding occurred during our research that is considered crucial. Even though digital PSS interventions positively influence adolescents’ psychosocial well-being, there are, on the other hand, other stressors that affect their well-being. To start with the positive factor, the teachers and PSS staff considered programs that provide psychosocial support as factors that influence adolescents’ well-being positively. They believed that such initiatives have a high effect on adolescents’ well-being because they provide them with essential knowledge and teach them skills that are crucial for them to cope with their difficulties. Evidence shows that psychosocial support initiatives provide children and young people with a sense of normalcy, enhancing their ability to cope with their

situation and fostering their long-term emotional and social well-being, which might reduce long-lasting psychological damage (Unicef, 2009). The findings from previous studies and the views of teachers/ PSS staff in this research provide us with a reasonable belief that psychosocial support interventions are crucial for adolescents' well-being.

However, there are existing multiple, ongoing stressors that adversely affect the well-being of Syrian adolescents in Lebanon. As mentioned in chapter 2, the foundation of well-being, according to Richard Burns (2017), is the existence of some indicators in individuals like the satisfaction of basic needs, feeling of belonging, optimism, social recognition, etc. The teachers in this study seem to have a clear opinion on which stressors affect their students' well-being based on their observations. The first factor that teachers mentioned was the family and their relationships with each other. The family's condition and parents' mental well-being seem to have an impact on adolescents' well-being. This statement is in accordance with an existing study done with Syrian refugee children in Turkey, showing that parental psychopathology and parenting-related stress correlate with children's mental health and emotional problems (Eruiyar, Maltby, & Vostanis, 2018).

The current living conditions of displaced Syrian adolescents in the Beqaa, Lebanon was the other stressor that teachers mentioned in the focus group discussion. A lack of living space and privacy is a condition that might affect adolescents' well-being in multiple ways. Firstly, living in small apartments or tents where the siblings must share rooms lowers satisfaction in life, which is an essential indicator for well-being. Secondly, lack of privacy can lead to limited autonomy in adolescents, which is another indicator of well-being. Our findings support existing studies that show that the living conditions of displaced Syrians is a stressor that causes a decrease in overall life satisfaction (Obi, 2021). Moreover, addressing daily stressors connecting to adolescents' living conditions (e.g., living in one single room, sharing the same clothes with siblings, and limited access to both water and electricity), can prevent the development of mental health problems and slow down the worsening of existing difficulties (Miller & Rasmussen, 2010).

The previous stressor concerning living conditions is strongly linked to the economic conditions of displaced Syrians. Thus, the financial circumstances were among the other stress factors that teachers consider influencing adolescents' well-being. One of the teachers elaborated "When the family lives in poverty due to a lack of financial resources, it will naturally affect their child's well-being". The lack of financial resources might affect Syrian adolescents' well-being in various ways. Firstly, it can contribute to problematic social behavior in adolescents, especially the male group, which might lead them to use violence and participate in criminal activities. Secondly, it can affect their self-esteem, which is another indicator of well-being (Burns, 2017), as they will feel limited and less valuable among other adolescents who have more financial resources. Thirdly, the family's financial condition may lead the parents to force their child to drop out of school for work, leading to poor academic achievement in adolescents. A finding from a previous study done to examine the link between poverty and adolescent mental health supports our findings and concludes that chronic exposure to poverty increases adolescents' risk for depression, substance use, early sexual debut, and criminal activity (Dashiff, DiMicco, Myers, & Sheppard, 2009). Another study that investigates the psychosocial conditions of Syrian refugees and Lebanese children found that poverty and war play equal roles in affecting children's emotional well-being (Shuayb & Ahmad, 2021), and our findings accord with this view.

A sense of belonging is considered a fundamental human motivation that drives people to form social bonds and influence well-being (Baumeister & Leary, 1995). The teachers considered the absence of a sense of belonging and freedom in adolescents as a stressor that affects their well-being. The teachers elaborated that the adolescents live in uncertainty; they do not know if they will stay or return to their home country. The findings indicate that to bring back a sense of normalcy, routine, and social and emotional well-being in the lives of displaced adolescents, they must have a feeling of belonging and freedom. Otherwise, the absence of those feelings might create a negative attachment in adolescents' lives, such as a pessimistic worldview, social exclusion, negative social behaviors, and ongoing mental stress. Our findings are in accordance with other studies that show that the absence of belongingness and freedom can lead to social exclusion, which has a major impact on youth's subjective well-being (Correa-Velez, Gifford, & Barnett, 2010).

The findings from previous studies show that war experiences like bombing and the loss of relatives are considered the number one cause of psychological stress in children's daily lives

(Save the Children, 2017). As addressed by teachers/ PSS staff in this study, war memories and traumas are essential factors that affect adolescents' well-being. Evidence shows that children who survive trauma may be left with long-term psychological and psychosocial effects. Children who directly experienced war may develop symptoms like nightmares, bedwetting, and behavior change (e.g., aggressiveness or being withdrawn) (Constanze, Liyam, & Rawan, 2013). One of the adolescents in this study mentioned an incidence that matched the last-mentioned study, where he experienced the loss of a family member in the war in Syria, which led him to isolate himself and avoid talking to anyone when he remembers the incident. This gives us a reason to believe that traumatic memories from wars affect adolescents' well-being to a high degree. Not addressing those issues in adolescents may cause long-term psychological disorders that can affect their growth and quality of life (Devakumar et al., 2015).

Before coming to a partial conclusion, we should shed light on how the factors discussed above influence adolescents' well-being according to the social-ecological model (SEM) of Bronfenbrenner (1979) that has been used as a theoretical framework in this thesis. According to the SEM, various intrapersonal and interpersonal factors that operate within multiple ecological system levels influence adolescents' psychological well-being (Guo et al., 2018). When looking at the factors discussed above, we can consider them as intra- and interpersonal factors that operate within adolescents' ecological system levels. The living and financial conditions can be appertaining to adolescents' microsystem as they have a direct effect on the individual behavior, causing various challenges (e.g., problematic social behavior, lower self-esteem, low educational outcome, mental health disorders, etc.). The family's relationship pertains to adolescents' mesosystem as it relates to their social environments; how a family functions can contribute to decreasing or increasing adolescents' psychological well-being. Furthermore, the exposure of factors within adolescents' social and community environments contributes to their emotional and behavioral development. Thus, factors like belonging, freedom, war memories, and traumas pertain to the adolescents' exo- and macrosystems as they relate to their social and community environments. On that basis, we can affirm that the synergistic effects of the discussed factors within the multiple system levels impact adolescents' psychological well-being.

6.7 Strength and limitations

This study has several strengths as well as limitations. The present research was the first to investigate the HH app's impact on adolescents' well-being and problem-solving skills and to measure the app's feasibility and usefulness when the app was implemented in a large group of adolescents (N=104) led by teachers. A mixed-method approach was designed to facilitate a comprehensive understanding with triangulated outcomes that strengthen our validity in multiple ways. First, the focus group interviews with the adolescents and teachers were exploratory and facilitated detailed and in-depth data about the investigated phenomena. Additionally, the interviewed adolescents had participated in all the 10 sessions of the HH app intervention and were selected using multiple purposive techniques (*see sub-chapter 4.4.3*), which ensured a variety of age and socio-economic backgrounds. Likewise, the teachers/ PSS staff interviewed had all received training and were extensively involved in the intervention. Although the interviewed facilitators were selected based on strict recruitment criteria, they still had variations in experiences and educational background. Based on that, the data provided by teachers/ PSS staff and adolescents is considered credible and reliable, and thus, contributes to strengthening the reliability of this research.

Second, providing research in another culture implies challenges concerning the language and cultural differences. A strength with this study, was that the main researcher speaks Arabic and is of Arabic origin. Thus, all written information (e.g., selecting criteria, informed consents, the procedure to answer the questionnaire, etc.), the interview questions, and the survey were translated to Arabic by the researcher and then checked by people who are fluent in Arabic working at MAPs to minimize the risk of misunderstanding. Furthermore, the focus group interviews were conducted using Arabic, which enabled the researcher and the participants to have solid dialogs that captured the more complex and nuanced perspectives of the phenomena. In addition, the adolescents' focus groups were segregated by gender to avoid some stigma associated with cultural gender-related issues. Many studies of health in conflict zones have been conducted by Westerners (Weigmann, 2015). The fact that the main researcher of this study is an Arabic woman with experiences of being a refugee as an adolescent herself, strengthens the cultural validity of this study. Importantly, it adds to the heterogeneity of researchers in this field (Diaz-Faes, Otero-Hermida, Ozman, & D'Este, 2020; Lewin, 2013).

Third, the statical results from the survey provided complementarity by confirming the results from the focus group interviews concerning the improvement of adolescents' well-being. In addition, the relatively large sample size in the statistical study, where n=104 participated in the pre-test and n=74 in the post-test, along with the almost equal male and female groups, contributes to strengthening the validity of the results in this study.

Finally, combining the more generalizable quantitative data with more in-depth qualitative data (methodological triangulation) allowed us to draw relatively more generalizable inferences or conclusions than if we used only one of the methods. However, our inferences are limited in generalizability to our specific population (displaced Syrian adolescents enrolled in MAPs education centers in the Beqaa Valley, Lebanon), not necessarily displaced Syrian adolescents in general.

However, the study also presents several limitations that need to be acknowledged. First, some limitations may have accrued during the implementation process and the intervention period of the HH app. For example, the HH app should be delivered through 10 sessions; one session per week, which amounts to a 10-week intervention period. In this study, however, there was a rush in the implementation process that resulted in the app being delivered within five weeks, which meant two sessions per week. This may have caused teachers/ PSS staff not to have enough time to fully introduce the topics for adolescents, nor enough time for reflective conversations and activities related to each session. On the other hand, the intensive process may have led to a temporary increase in adolescents' well-being because of using the HH app as a digital game. Additionally, a follow-up has not been conducted to ensure if the increased well-being is still maintained.

Second, some limitations may have existed concerning quality control of the selection process and the app's implementation. Although we had comprehensive contact with people responsible at MAPs and the strict recruitment criteria for selecting the participants, we were not present in the field to quality control the process due to the COVID-19 travel restrictions. Thus, there is some uncertainty about whether the recruitment criteria were followed completely and whether the app was delivered by teachers/ PSS staff in accordance with the training received.

Third, a facilitator bias has been registered in this research. Even though the teachers/ PSS staff received training and instructions concerning delivering all the games sessions, our data show that teachers/ PSS staff chose not to deliver them entirely because of cultural appropriateness. Censoring two crucial parts of the app might have led the adolescents not to receive the app's full benefit nor gain the ultimate experience. In addition, this might have affected our data concerning the feasibility and usefulness of the HH app.

Fourth, a data collection bias might have occurred. As discussed in sub-chapter 6.5.1, there were several technical issues during collecting data from the post-test that might have affected our results. In addition, after sorting the data from the post-test, we found that ten responses were the same. After a discussion with my supervisors, we agreed to remove those ten identical responses to avoid inaccuracy concerning data outcomes. This might have caused uncertainty regarding our statistical data. One way this might be avoided in future evaluations would be to use a data-gathering tool that is more suitable for the targeted research population.

Fifth, a respondent bias might have occurred. This bias reflects the situation where the interviewed adolescents might have responded with a tendency to agree with and be excessively positive about the investigated phenomena. In other words, the interviewed adolescents in this study might not have provided honest responses because they wanted to 'please' the interviewer with answers they believe are desirable. This could threaten our reliability if this bias has occurred. However, this threat is minimized because of our data triangulation, where we investigated the same phenomena using qualitative and quantitative methods.

Lastly, there is a possibility of a confirmation bias in this research due to the researcher and the co-supervisor (Dr. Solfrid Raknes, the founder of the HH app). Confirmation bias reflects the situation where the researcher, consciously or unconsciously, interprets the data to be consistent with their hypothesis and beliefs. Thus, the interview questions and the survey in this study might have been designed with a tendency to give output that is consistent with what we believe. However, before designing the study, we acknowledged that such a problem might exist, and thus, structured transparent and open questions that enable reflections. Further, the interview question and the survey were also reviewed by my supervisor and people working at MAPs to ensure objectivity. In addition, to avoid confirmation bias, my

co-supervisor, Dr. Solfrid Raknes, and I came to an agreement that all the data for this research would be collected, systematized, and analyzed by me alone. Moreover, a thematic analysis method was used to organize our qualitative data and highlight different perspectives, which limited our tendency to look for evidence that affirms our beliefs. Finally, the WHO-5 questionnaire included in our study is a standardized set of questions and responses, greatly limiting the possibility of confirmation bias.

6.8 Implications and future directions

Having investigated the contributions of Happy Helping Hand app as a digital psychosocial support tool in improving the well-being and emotional problem-solving skills in displaced adolescents, we should consider the implications and lessons from research.

First, our research shows clearly that the HH app as a digital psychosocial support intervention positively affects the psychological well-being of the targeted group of adolescents. Therefore, the HH app should be pursued, and not abandoned, as a tool to improve adolescent's well-being and emotional problem-solving skills. In fact, digital PSS interventions, such as the Happy Helping Hand app, should be implemented for displaced Syrian adolescents in other parts of Lebanon, as well as for Syrian adolescents in Jordan and Turkey. A long-term strategy would be to make digital PSS interventions, such as the Happy Helping Hand app, available and accessible for displaced adolescents in parts of the world with large, displaced populations.

Second, our research show that the HH app contributes to improving the emotional problem-solving skills of adolescents by impacting their behavior toward self-management, decision-making, and help-seeking. Digital PSS interventions should be integrated into teaching programs at both formal and non-formal education for Syrian and Palestinian displaced adolescents in Lebanon. In fact, digital PSS interventions in the education system could provide teachers with skills necessary to deal with sensitive challenges related to mental health and psychosocial well-being, such as depression, suicidal thoughts, anxiety, etc.

Third, the Happy Helping Hand was found to be useful and engaging. Therefore, the HH app could also seek to target children and younger adolescents by developing the analog version

of HH into a digital app, as digitalized tools are more attractive and engaging than analogue versions.

Forth, our research found existing, ongoing stressor factors that influence the Syrian adolescents' well-being. In order to make content of relevance, digital psychosocial support interventions, such as the Happy Helping Hand, should consider create scenarios that directly and indirectly deal with the stressor factors displaced and refugee adolescents are experiencing in their daily lives to include scenarios such poverty, uncertainty about their future, conflict with family, war trauma, gender related issues etc.

Fifth, our research has found that that the HH app should be more culturally and contextually appropriate to fit optimally with the targeted displaced Syrians in this study. Digital PSS interventions should be culturally adapted, both linguistically and contextually, but without abandoning or compromising on efficacy and purpose. This includes providing relatable and identifiable characters and scenarios, as well as using the type of language the adolescents are using. However, as the HH is a cross-cultural intervention, it is difficult, if not impossible, to completely adapt the app to completely adapt to the target culture. Therefore, when implementing a universal psychosocial support intervention across cultures, teachers' and PSS staff's considerations should be taken into account. Teachers and PSS staff are "cultural insiders" and their input on how to most appropriately teach culturally sensitive topics should be considered. This could involve separating groups by gender and providing a teacher/ PSS staff of the same gender.

Sixth, our study indicates that the Happy Helping Hand app has increased mental health awareness in adolescents, as well as teachers and PSS staff. Therefore, providers of PSS interventions should consider creating interventions that include parents in order to further increase mental health awareness and hopefully minimize the stigma around mental health issues.

Finally, our research found that extended training and time should be given to teachers and PSS staff to implement the Happy Helping Hand intervention, in order to be prepared to teach culturally sensitive topics and avoid rushing through scenarios. Therefore, greater focus should be given the implementation process and training of facilitators like teachers and PSS staff. Psychosocial support interventions, such as the HH, cannot be rushed but should be

given sufficient time, as preparation is key to achieve promising results. Facilitators also require adequate training, especially on teaching culturally sensitive topics and issues.

Future Directions

To improve displaced Syrian adolescents' psychological well-being, life skills and increase the awareness around mental health problems, insights into research-based digital interventions are crucial in order to provide facilitators with a broad understanding of users' perspectives and the need for future advancement.

The future direction of the research should be:

1. It emerges in this study that the Happy Helping Hand intervention has improved the targeted adolescents' well-being and emotional problem-solving skills from before to after the intervention's period. However, no follow-up has been done to explore whether this improvement is lasting. Thus, future research should examine if the impact of the Happy Helping Hand intervention on adolescents' well-being and emotional problem-solving skills is of long-term or short-term effect.
2. While collecting the quantitative data in this study, there were several technical issues that might have caused some uncertainty. Future evaluation should consider using a data-gathering tool that is more suitable and applicable for the targeted research population in order to avoid uncertainty and data collection bias.
3. It would also be interesting, if not important, for future research to investigate the impact of the Happy Helping Hand app on displaced Syrians' psychological well-being and emotional problem-solving skills across neighboring countries when the app is implemented there. It would also be relevant to emphasize how the different cultural and contextual factors across neighboring countries affect their mental health.
4. An important aspect would be to investigate the influence of the Happy Helping Hand across age and gender. It is not unreasonable to think that such imitative would impact differently between boys and girls, or between younger and older adolescents
5. A general direction for future research could be to gain more extensive knowledge on mental health, and its barriers in non-Western cultures, specifically in the Arab culture, and how the challenges related affect the well-being of teens in general, and displaced Syrian adolescents in specific.

6. Finally, comprehensive universal interventions that target the entire community are recommended in order to increase awareness around mental health and reduce stigmatization. With the community as the whole, I mean: children, adolescents, parents, educators, health staff, religious organizations, and government agencies.

7. Conclusion

The civil war in Syria has resulted in approximately 1.5 million Syrian displaced people living in Lebanon. About 40% are between the ages of five and seventeen, many of which suffer from a wide range of psychosocial problems. This has created a need for initiatives to provide psychosocial support (PSS) and mental health. The use of digital technology has created unique opportunities to provide PSS to underserved populations, such as Syrian displaced adolescents. One such digital PSS initiative is the Happy Helping Hand (HH) intended to provide PSS in the education of displaced Syrian adolescents in Lebanon. The HH is a digital cognitive behavioral-based (CB-based) tool that aims to help adolescents manage their emotions and understand how to problem-solve through a digital game app.

This master thesis aimed to explore the impact of a digital CB-based psychosocial support intervention intended to improve displaced adolescents' well-being and emotional problem-solving skills. The utilized research question intended to find the perspectives of displaced Syrian teachers and adolescents in Lebanon on how the Happy Helping Hand app affects the well-being and emotional problem solving-skills when used in an educational setting. The background for the research was to gain further knowledge about the need for psychosocial support interventions for displaced Syrian adolescents and how such digital interventions potentially can contribute to increase mental health literacy, emotional awareness, and life coping skills.

The method utilized was a mixed-method research approach using a combination of qualitative and quantitative method techniques for data collection. The data collection consisted of different stages: pre-assessment before the intervention with 104 participants (56 female and 48 male), post-assessment after the intervention with 73 participants (34 female and 39 male), and three focus group interviews (one with teachers/ PSS staff, one with male adolescents, and one with female adolescents). As the field of digital PSS interventions for displaced Syrian adolescents is poorly investigated, using a mixed-method approach has allowed us to explore the complexities of this phenomenon, while also being able to draw broader inferences about the phenomenon. By having a qualitative element to our method has allowed us to explore the phenomenon of digital psychosocial support tools in-depth, providing a basis from which future research can be made.

The findings in this study addressed how the Happy Helping Hand app, as a digital psychosocial support intervention, positively affected the well-being and improved the emotional problem-solving skills of our targeted group of adolescents by improving skills in emotional self-management, decision-making, and help-seeking. Based on subjective perspectives reported by adolescents and teachers/ PSS staff themselves, we found that there is a high need for psychosocial support interventions in the education of displaced Syrian adolescents. This in order to address their mental health challenges, increases their awareness around mental health, improve their well-being, and help develop coping skills for a healthy psychological development.

Moreover, both teachers/ PSS staff and adolescents found the app easy to use, engaging, relevant, crucial, and useful. However, the teachers expressed concerns about the app's cultural appropriateness. As the HH app is a universal, cross-cultural intervention, we have argued that it is challenging to completely adapt it to fit into the targeted culture. Yet, some contextually and linguistically adjustments, without changing the core ideas, could be beneficial for the app to be perceived as optimal.

Several stressors contribute to decreasing the well-being of displaced Syrian adolescents; both situational factors, such as their current living situations and financial conditions, and psychological factors, such as the feeling of belonging and war traumas. To reduce the impact of those factors there is a need for preventive psychosocial interventions to be expanded to include features relating to these stressors. Education plays a central role when psychosocial support interventions are considered. Implementing digital psychosocial support interventions in an educational setting is a way to make such interventions accessible for displaced Syrian adolescents and other adolescents in need.

Moreover, an integrated, comprehensive PSS intervention is also recommended, not only in the education for the targeted group of adolescents but for the wider community. Given that digital psychosocial support interventions are improved, accessible, and widely implemented, I believe a larger proportion of adolescents will acquire increased mental health awareness. Hopefully, improved PSS interventions increases openness about the challenges adolescents face in their daily lives and increases adolescents' willingness to seek and receive help when needed.

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Appendix A: Approval from the Norwegian centre for research data

Meldeskjema for behandling av personopplysninger

22/09/2020, 20:43



NSD sin vurdering

Prosjekttittel

Digitalized Psychosocial Support in Education. Exploring the impact of the 'Helping Hands' app for Syrian refugee adolescents in Lebanon

Referansenummer

889504

Registrert

17.06.2020 av Alaa Munir Alkhayat - s303233@oslomet.no

Behandlingsansvarlig institusjon

OsloMet - storbyuniversitetet / Fakultet for lærerutdanning og internasjonale studier / Institutt for internasjonale studier og tolkeutdanning

Prosjektansvarlig (vitenskapelig ansatt/veileder eller stipendiat)

Lars Gule, larsgu@oslomet.no, tlf: 99225324

Type prosjekt

Studentprosjekt, masterstudium

Kontaktinformasjon, student

Alaa Munir Al-khayat, alaa-alkhayat@hotmail.com, tlf: 41384795

Prosjektperiode

01.08.2020 - 31.05.2022

Status

13.07.2020 - Vurdert

Vurdering (1)

13.07.2020 - Vurdert

Det er vår vurdering at behandlingen av personopplysninger i prosjektet vil være i samsvar med

personvernlovgivningen så fremt den gjennomføres i tråd med det som er dokumentert i meldeskjemaet den 13.07.2020 med vedlegg, samt i meldingsdialogen mellom innmelder og NSD. Behandlingen kan starte.

MELD VESENTLIGE ENDRINGER

Dersom det skjer vesentlige endringer i behandlingen av personopplysninger, kan det være nødvendig å melde dette til NSD ved å oppdatere meldeskjemaet. Før du melder inn en endring, oppfordrer vi deg til å lese om hvilke type endringer det er nødvendig å melde:

https://nsd.no/personvernombud/meld_prosjekt/meld_endringer.html

Du må vente på svar fra NSD før endringen gjennomføres.

TYPE OPPLYSNINGER OG VARIGHET

Prosjektet vil behandle særlige kategorier av personopplysninger om etnisk opprinnelse, religion og helseforhold, samt alminnelige kategorier av personopplysninger frem til 31.05.2022.

LOVLIG GRUNNLAG

Prosjektet vil innhente samtykke fra de registrerte til behandlingen av personopplysninger. Vår vurdering er at prosjektet legger opp til et samtykke i samsvar med kravene i art. 4 nr. 11 og art. 7, ved at det er en frivillig, spesifikk, informert og utvetydig bekreftelse, som kan dokumenteres, og som den registrerte kan trekke tilbake.

Lovlig grunnlag for behandlingen vil dermed være den registrertes uttrykkelige samtykke, jf. personvernforordningen art. 6 nr. 1 bokstav a, jf. art. 9 nr. 2 bokstav a, jf. personopplysningsloven § 10, jf. § 9 (2).

PERSONVERNPRINSIPPER

NSD vurderer at den planlagte behandlingen av personopplysninger vil følge prinsippene i personvernforordningen om:

- lovlighet, rettferdighet og åpenhet (art. 5.1 a), ved at de registrerte får tilfredsstillende informasjon om og samtykker til behandlingen
- formålsbegrensning (art. 5.1 b), ved at personopplysninger samles inn for spesifikke, uttrykkelig angitte og berettigede formål, og ikke viderebehandles til nye uforenlige formål
- dataminimering (art. 5.1 c), ved at det kun behandles opplysninger som er adekvate, relevante og nødvendige for formålet med prosjektet
- lagringsbegrensning (art. 5.1 e), ved at personopplysningene ikke lagres lengre enn nødvendig for å oppfylle formålet

DE REGISTRERTES RETTIGHETER

Så lenge de registrerte kan identifiseres i datamaterialet vil de ha følgende rettigheter: åpenhet (art. 12), informasjon (art. 13), innsyn (art. 15), retting (art. 16), sletting (art. 17), begrensning (art. 18), underretning (art. 19), dataportabilitet (art. 20).

NSD vurderer at informasjonen som de registrerte vil motta oppfyller lovens krav til form og innhold, jf. art. 12.1 og art. 13.

Vi minner om at hvis en registrert tar kontakt om sine rettigheter, har behandlingsansvarlig institusjon plikt til å svare innen en måned.

FØLG DIN INSTITUSJONS RETNINGSLINJER

NSD legger til grunn at behandlingen oppfyller kravene i personvernforordningen om riktighet (art. 5.1 d), integritet og konfidensialitet (art. 5.1. f) og sikkerhet (art. 32).

Questback er databehandler i prosjektet. NSD legger til grunn at behandlingen oppfyller kravene til bruk av databehandler, jf. art 28 og 29.

For å forsikre dere om at kravene oppfylles, må dere følge interne retningslinjer og eventuelt rådføre dere med behandlingsansvarlig institusjon.

OPPFØLGING AV PROSJEKTET

NSD vil følge opp ved planlagt avslutning for å avklare om behandlingen av personopplysningene er avsluttet.

Lykke til med prosjektet!

Kontaktperson hos NSD: Jørgen Wincentzen
Tlf. Personverntjenester: 55 58 21 17 (tast 1)

Appendix B: Consent for teachers/ PSS staff

Are you interested in participating in the research project “Digitalized Psychosocial Support in Education- Exploring the Impact of the ‘Helping Hand’ app for Syrian Refugee Adolescents in Lebanon”?

This is an inquiry about participation in a research project where the main purpose is on the topic of digitalized psychosocial support in the education of Syrian refugee children in Lebanon. The focus of my study will be on the "Helping Hands" app, which is a digitalized psychosocial support program for children and adolescents. The aim is to explore the concepts of psychosocial support in education and emotional problem-solving skills, and how important is it for Syrian refugee adolescents who live in Lebanon. In this letter we will give you information about the purpose of the project and what your participation will involve.

Purpose of the project

The study will seek to explore the concepts of psychosocial support in education and emotional problem-solving skills, and how important is it for Syrian refugee adolescents who live in Lebanon by this specific research question:

- How can the ‘Helping Hands’ game app be delivered in order to promote emotional problem-solving skills in the user?

This project is a master’s thesis, and the collected data will be the main sources to answer the research question mentioned above. The data will also be used as part of evaluation of services given to Syrian refugees given by the NGOs involved.

Who is responsible for the research project?

Oslo Metropolitan University is the institution responsible for the project. The study also takes part in collaboration with Dr. Solfrid Raknes who is a Norwegian Clinical Psychologist based in Lebanon parts of her time, and NGOs she is collaborating with.

Why are you being asked to participate?

You are asked to become a part of this study since you have been helping the students to use “The Helping Hands” application.

What does participation involve for you?

- If you chose to take part in the project, this will involve that you participate in a focus groups interview. The group will consist of 4-6 participants, and the time will be between 40-90 minutes. Your answers will be recorded.
- If you chose to take part in the project, this will involve that you fill in an online survey. It will take approx. 15 minutes. The survey includes questions about your experience toward using the game app for your students. Your answers will be recorded electronically

Participation is voluntary

Participation in the project is voluntary. If you chose to participate, you can withdraw your consent at any time without giving a reason. All information about you will then be made anonymous. There will be no negative consequences for you if you chose not to participate or later decide to withdraw. It will not affect any services you get or can get.

Your personal privacy – how we will store and use your personal data

We will only use your personal data for the purposes specified in this information letter. We will process your personal data confidentially and in accordance with data protection legislation (the General Data Protection Regulation and Personal Data Act).

- Nobody but the student Alaa at OsloMet will get access to your personal data.
- I will replace your name and contact details with a code. The list of names contact details and respective codes will be stored separately from the rest of the collected data. I will store these data crypted and locked.
- Quest back will be used to collect data

No participants will be recognizable in publications.

What will happen to your personal data at the end of the research project?

At the end of this project, and latest 31.06.2022. All personal data, including any digital recordings will be deleted at the end of the project.

Your rights

So long as you can be identified in the collected data, you have the right to:

- access the personal data that is being processed about you
- request that your personal data is deleted
- request that incorrect personal data about you is corrected/rectified
- receive a copy of your personal data (data portability), and
- send a complaint to the Data Protection Officer or The Norwegian Data Protection Authority regarding the processing of your personal data

What gives us the right to process your personal data?

We will process your personal data based on your consent.

Based on an agreement with Oslo Metropolitan University- OsloMet, NSD – The Norwegian Centre for Research Data AS has assessed that the processing of personal data in this project is in accordance with data protection legislation.

Where can I find out more?

If you have questions about the project, or want to exercise your rights, contact:

- Student at OsloMet- Alaa Munir Al-Khayat, telephone: +47 41 38 47 95, email: (s303233@oslomet.no)
- My supervisor: Lars Gule, telephone: +47 99 22 53 24, email: (larsgu@oslomet.no)
- Our Data Protection Officer: Ingrid S. Jacobsen, telephone: +47 67 23 55 34, email: (personvernombud@oslomet.no)
- NSD – The Norwegian Centre for Research Data AS, by email: (personverntjenester@nsd.no) or by telephone: +47 55 58 21 17.

Yours sincerely,

Project Leader


Lars Gule

Student


Alaa Al-Khayat

Appendix C: Consent for parents/students

Are you/your child interested in taking part in the research project “Digitalized Psychosocial Support in Education- Exploring the Impact of the ‘Helping Hand’ app for Syrian Refugee Adolescents in Lebanon”?

This is an inquiry about participation in a research project where the main purpose is on the topic of digitalized psychosocial support in the education of Syrian refugee children in Lebanon. The focus of my study will be on the "Helping Hands" app, which is a digitalized psychosocial support program for children and adolescents. The aim is to explore the concepts of psychosocial support in education and emotional problem-solving skills, and how important is it for Syrian refugee adolescents who live in Lebanon. In this letter we will give you information about the purpose of the project and what your participation will involve.

Purpose of the project

The study will seek to explore the concepts of psychosocial support in education and emotional problem-solving skills, and how important is it for Syrian refugee adolescents who live in Lebanon by this specific research question:

- How can the ‘Helping Hands’ game app be delivered in order to promote emotional problem-solving skills in the user?

This project is a master’s thesis, and the collected data will be the main sources to answer the research question mentioned above. The data will also be used as part of evaluation of services given to Syrian refugees given by the NGOs involved.

Who is responsible for the research project?

Oslo Metropolitan University is the institution responsible for the project. The study also takes part in collaboration with Dr. Solfrid Raknes who is a Norwegian Clinical Psychologist based in Lebanon, and NGOs she is collaborating with.

Why are you being asked to participate?

You are asked to become a part of this study since you/your child have been using “The Helping Hands” application.

What does participation involve for you/your child?

- If you/your child chose to take part in the project, this will involve that you/your child participate in a focus groups interview. The group will consist of 4-6 participants, and the time will be between 40-90 minutes. Your answers will be recorded.
- If you/your child choose to participate in the project, this will involve that you/your child complete an online survey. It will take approx. 15 minutes. The survey includes questions about your/your child responses to the game, as well as your/your child well-being. Your answers will be collected digitally.

If the participated child is under 16 years old, the parent/guardian may on request see the survey/interview guide in advance.

Participation is voluntary

Participation in the project is voluntary. If you/your child chose to participate, you can withdraw your consent at any time without giving a reason. All information about you/your child will then be made anonymous. There will be no negative consequences for you/your child if you chose not to participate or later decide to withdraw. It will not affect any services you/your child get or can get.

Your personal privacy – how we will store and use your/your child personal data

We will only use your/your child personal data for the purposes specified in this information letter. We will process your/your child personal data confidentially and in accordance with data protection legislation (the General Data Protection Regulation and Personal Data Act).

- Nobody but the student Alaa Al-Khayat at OsloMet will get access to your/your child personal data.
- I will replace your/your child name and contact details with a code. The list of names contact details and respective codes will be stored separately from the rest of the collected data. I will store these data crypted and locked.
- Quest back will be used to collect data

No participants will be recognizable in publications.

What will happen to your personal data at the end of the research project?

At the end of this project, and latest 31.06.2023. All personal data, including any digital recordings will be deleted at the end of the project.

Your/your child rights

As long as you/your child can be identified in the collected data, you have the right to:

- access the personal data that is being processed about you/your child
- request that your/your child personal data is deleted
- request that incorrect personal data about you/your child is corrected/rectified
- receive a copy of your personal data (data portability), and
- send a complaint to the Data Protection Officer or The Norwegian Data Protection Authority regarding the processing of your/your child personal data

What gives us the right to process your/your child personal data?

We will process your/your child's personal data based on your consent.

Based on an agreement with Oslo Metropolitan University- OsloMet, NSD – The Norwegian Centre for Research Data AS has assessed that the processing of personal data in this project is in accordance with data protection legislation.

Where can I find out more?

If you have questions about the project, or want to exercise your rights, contact:

- Student at OsloMet- Alaa Munir Al-Khayat, telephone: +47 41 38 47 95, email: s303233@oslomet.no
- My supervisor: Lars Gule, telephone: +47 99 22 53 24, email: larsgu@oslomet.no
- Our Data Protection Officer: Ingrid S. Jacobsen, telephone: +47 67 23 55 34, email: personvernombud@oslomet.no
- NSD – The Norwegian Centre for Research Data AS, by email: personverntjenester@nsd.no or by telephone: +47 55 58 21 17.

Yours sincerely,

Project Leader


Lars Gule

Student


Alaa Al-Khayat

Appendix D: Interview guides

Interview guide for students/adolescents

The purpose of this interview is to examine how the Helping Hand app is used by Syrian refugee adolescents in Lebanon and how you experience the app.

Background

Let's get to know each other..

I will start by presenting myself, my background, what I work with, and why I am doing this research.

1. Can you introduce yourselves?
 - How old are you?
 - What grade are you in?
 - For how long have you been attending school?
 - Where do you currently live? (House? Apartment? Tent? Other?)
 - With who do you live now?

Questions related to the HH app

2. You have been participating in groups where you have been using the HH app.
 - Can you explain what the HH app is?
 - How did you experience the app?
 - Is it difficult/easy to use?
 - What is your impression of the language used in the app? Is the vocal language easy to understand? Is the written language easy to understand?
 - To what extent is the different scenarios relevant to your lives?
 - What do you think of the main characters in the game?
 - Can you relate any of these characters to yourself or any of your friend?
 - How many times have you used the HH app in the group?
 - Did you use the HH app at home or in your spare time? If yes, why did you use it?
 - In your opinion, is it important for you to use the HH app? If yes, why? If no, why?

Question about having used the app

3. Did you first use the HH app before, during, or after attending the HH groups? How so?
4. Can you, in your opinion, explain the utility of the HH app?
5. In your opinion, to what extent is the HH app engaging? Why so? And what aspects of the HH app are the most engaging/entertaining?
6. Have you had life experience that is relatable to the scenarios in the HH app? Can you explain?
7. Have you had any negative experiences related to the HH app? Can you explain?
8. Have you had any positive experiences related to the HH app? Can you explain?

Question about emotional coping before using the HH app

The following questions relate to the time before you started using the HH app.

9. How did you tend to act/behave under difficult circumstances?
 - How did you react when getting angry? (f.ex. at parents, siblings, other kids/adolescents and other adults you live with)
 - How did you react when you got scared? (f.ex. in a specific situation, or in school, before holding a presentation)
 - How did you react when experiencing painful memories?
10. Can you explain how you used to express your emotions under difficult circumstances?

Questions related to emotional coping after using the HH app

The following questions relate to the time after you started using the HH app.

11. You have during the past weeks been using the HH app; a digital game intended to enhance the user's ability to cope with emotionally difficult circumstances and provide emotional support to friends and family.
 - How do you cope with difficult circumstances after using the HH app?
 - Do you do anything differently after having used the HH app?
 - How do you support friends and family in coping with difficult circumstances after using the HH app? Can you explain?
 - Has using the app influenced the way you express your emotions? If yes, how? If no, why not?

12. The HH app is also intended to help the user see more options and possibilities when a difficult circumstance emerge.

- How have you coped with difficult circumstances arising after using the HH app?
- Had the app helped you solve day-to-day problems? Can you explain?

Feedback

13. In your opinion, are digital tools providing emotional support of benefit to adolescents in your age? Why? Why not?

14. Do you have any advice for the producers of the HH app? How can they improve the activities in the game to make it more suitable to adolescents in your age?

15. Do you have any more feedback for the producers of the HH app?

Interview guide for teachers and PSS staff

The purpose of this interview is to evaluate the utility of the “Helping Hand” app in providing psychosocial support in the education of Syrian refugee adolescents in Lebanon. I’m interested in your experiences in regards to the training you received in using the “Helping Hand” app; your experience in teaching the use of the HH app to students; and what observations you have made related to the mental health/mental well-being of the adolescents/ students after the implantation of the app.

Background

1. I suggest we start by introducing ourselves. Could you in short tell me...

- What is your current position?
- How long have you worked with MAPs and your work experience in teaching or as psycho-social support (PSS) staff?
- Do you have any past experience working with teaching arrangements or projects intended to provide psycho-social support to adolescents? Could you elaborate?

Reflections on the learning, health and well-being of adolescents

2. What are your thoughts on/understanding of psychological well-being?

- What factors affect/influence the psychological well-being of Syrian refugee adolescents? Can you provide examples?
3. What are your thoughts on the role of psycho-social support in education? And what is the significance of psycho-social support in the education of Syrian refugee adolescents?

Question related to the implantation of the HH app

4. How would you describe the HH app?
 - What is it's purpose?
5. Can you talk about how you have used the HH app?
 - For how long and how much have you worked with HH? Do you have one or more groups?
 - For how long has your class/group worked with/used the app?
 - Do you have any past experience working with the analogue version of HH with children?
 - How do you present the app for adolescents?
 - Have you used the HH app in groups physically presents, or F2F?
 - If you used the HH app through online classes, what digital platform did you use? How did it work?
 - How did you experience the introductory training arrangements to using the HH app prior to teaching it? Did you feel prepared/comfortable teaching it?
 - How did you utilize the ten-hour introductory training arrangement related to the HH app? Did you utilize all ten hours? If you included some elements and skipped other elements, please elaborate why.
 - Did you follow each scene sequentially/chronologically? If not, in which order did you follow it, and why?
 - Did you have sufficient time to conduct the introductory training?

Experiences and observations after implementing the HH app

6. What are your experiences on the utility of the HH app?
7. What are your experiences of the significance of the app on the adolescents? Why?
8. To what extent did the app engage the adolescents? How?
9. Can you elaborate on how the app affects/influences the adolescents?

- Did you notice any situations where you suspect the HH app had an influence?
 - Can you elaborate on any positive experiences the adolescents may have had when using the HH app?
 - Have you considered any negative experiences the adolescents may have had when using the HH app?
10. Can you provide any examples of situations where you noticed the adolescents acting in a way you suspected the adolescents were acting in a way you suspected is influenced by the HH app?
11. Did you observe the adolescents using the HH app outside of the PSS-classes? At home?

Considerations related to the HH app

12. After having used the HH app can you elaborate on your experience related to:
- The relationship between the students/adolescents
 - The adolescent's ability to self-soothe
 - The adolescent's ability to solve the daily challenges they encounter
13. To what extent do you perceive the HH app as being of relevance in the adolescent's psychological well-being? If so, how is it relevant?
14. Can you comment on your thoughts on social and emotional learning competency in school, and how important this is for the adolescents in school?
- Do you perceive it as easier for the adolescents to express their emotions after using the app?
 - Have you experienced a lower threshold among the adolescents in asking for help/support or talking about psychological difficulties after using the app?

Questions on the HH app directed to teachers and PSS staff

15. To what extent do you experience the HH app as a useful tool on the face of the challenges you experience in your work?
16. Has the app influenced how you and your colleagues relate and cooperate at work?
17. Have you had any negative experience with the HH app? If so, what?
- What do you think contributed to these experiences?

Room for improvement of the HH app and the introductory training

18. Can you comment on how the HH app could be different or improved?
19. Can you comment on the writing instructions the ten-hour introductory training arrangements? How could it be different or improved?
20. Can you comment on the training to use the app as part of PSS initiatives? How could it be different or improved?

Appendix E: Survey

Pre assessment

To measure usefulness of the Helping Hand app, we want to know a little about who you are. We would appreciate it if you could answer these questions before you start playing. After each time you have played, and especially when you have played through all the scenarios and know the game well, we would like you to give us feedback on what you think about the game. All feedback is treated anonymously.

Theme	Question	Alternatives					
background							
	1- Gender	girl	boy				
	2- I am...	adolescent	parent	teacher	health professional	other	
	3- Age	from 11 – 105 years					
Well being							
– 5-WBQ –	4- For the last two weeks I have ... - felt happy and in a good mood - I felt calm and relaxed - felt active and strong - felt obvious and refreshed when I wake up - felt that my daily life was filled with things that interested me	All the time	Most of the time	More than half of the time	Less than half of the time	Some times	Never

Thank you for answering all the questions!

Post assessment

Introduction

You have played The Helping Hand app. We want feedback from you about the usefulness of the game, and we appreciate if you answer the following questions. All feedback is treated anonymously.

Theme	Question	Alternatives					
background							
	5- Gender	girl	boy				
	6- I am...	adolescent	parent	teacher	health professional	other	
	7- Age	from 11 – 105 years					
Well being							
– 5-WBQ – Check if this is already translated to Arabic	8- For the last two weeks I have ... - felt happy and in a good mood - I felt calm and relaxed - felt active and strong - felt obvious and refreshed when I wake up - felt that my daily life was filled with things that interested me	All the time	Most of the time	More than half of the time	Less than half of the time	Some times	Never
Impact of the game							
	9- Do you think the game makes you feel better?	No, not at all	Scale from 1-5			Yes, very much	
	10- How educational do you think the game was?	Not educational	Scale from 1-5			Very educational	
	11- What have you learned?	Open					

	12- What did you like the least and the most about the game?	Open		
	13- How useful do you think the game can be for youth?	Not useful	Scale from 1-5	Very useful
	14- Did you like the game?	Not at all	Scale from 1-5	Very much
	15- Do you think it was to understand what to do in the game?	Very difficult	Scale from 1-5	Very easy
	16- Other comments?	Open		

Thank you for answering all the questions!

Appendix F: Thematic analysis

Thematic analysis of teachers/ PSS staff and adolescents' focus group interviews

Main themes	Sub-themes	Data extracts (female adolescents)	Data extracts (male adolescents)	Data extracts (teachers/ PSS staff)
Value of the app	Purpose	<p>“The “Helping Hand” is a tool meant to help us solve a problem if a problem arises and how to help others”</p> <p>“The app aims to teach us how to help and support others when they need it”</p>	<p>“The purpose of the app is to help us overcome our problems in our every-day life.</p> <p>“The game aims to help us deal with problems and teaches us how to find different solutions.”</p>	<p>“The HH app aims to help adolescents see different solutions when a problem arises.”</p> <p>“The app provides self-help.”</p>
	Utility	<p>“The app taught me a lot of themes related to my life”</p> <p>“It taught me how to express myself and my feelings”</p> <p>“The app taught me that if a problem arises, I know how to solve it. It taught me to see possible solutions”</p>	<p>“The game learns how to deal with problems and teaches us to find different solutions.”</p> <p>“The app teaches us how to deal with school problems, such as bullying and presentation anxiety.”</p> <p>“For me, the app taught me to see that there are several sides of an issue.”</p>	<p>“The app taught adolescents how to deal with positive and negative thoughts and better understand emotions.”</p> <p>“The app teaches adolescents problem-solving skills.”</p> <p>“The app helped the students sort their thoughts; they developed the ability to know which thoughts are negative and positive.”</p> <p>“The app made them reflect on all the problems they encountered through the game.”</p>
	Importance	<p>“The app is important because It helped me to help others”</p> <p>“The app was necessary because if I encountered a complex problem, I could turn back to the app”</p>	<p>“It’s important because the app teaches us relevant topics.”</p> <p>“The game helped me recognize new solutions and possibilities; that’s why it is crucial.”</p>	<p>“The app is essential because it allowed the students to reflect on problems and find different solutions. The app got them to discuss and express their opinions. The students were not used to discussing and</p>

				express their views, neither at school nor at home. But the game gave them this role, and the students developed the ability to provide advice and participate in reflective conversations.”
User experiences	Language	<p>“The language was easy to understand”</p> <p>“The oral language was easy to understand, but some written words were confusing”</p> <p>“Our teacher used to simplify and explain the difficult words in the game, but they were not many”</p>	<p>“The language was easy to understand, but some words were written in dialect and not in Fusha (formal Arabic).”</p> <p>“I learned new words I did not know before.”</p>	
	Scenarios	<p>“The scenarios affected me a lot, they taught me how to express myself”</p> <p>“The different scenarios were very good”</p> <p>“After playing the scenarios, I learned about helping others”</p>	<p>“The different scenarios were very relevant to me because I also face the same challenges in my every-day life.”</p> <p>“I recognized myself in those scenarios.”</p> <p>“They taught me a lot of things.”</p>	<p>“When the students played the app, they lived through those different scenarios and felt a part of them.”</p> <p>“The scenario concerning refugees and belonging affected the students mainly and put them in a discussion that they should not feel excluded and outside the society and that they are a part of it and have the same rights.”</p>
	Characters	<p>“Those characters reminded me of several people I know”</p> <p>“The characters were good, but they were not many”</p>	<p>“I recognized my friend in one of the characters, the one who was bullied.”</p> <p>“The characters were similar to people I know.”</p> <p>“I liked the different characters in the game, and what I liked most is that I could help</p>	

	Engagement	“The app was very, very engaging. It was fun and it taught us things we did not know before”	<p>them solve their challenges through the game.”</p> <p>“The app is very engaging because it is made as a digital game.”</p> <p>“I think it is very engaging because it allows us to be a part of the game.”</p> <p>“For me, it is engaging because the app contains important and relevant topics. We learned new things we didn’t know before.”</p>	<p>“The app has engaged the students to a huge extent. The students became so engaged that they began to ask the teacher if they could teach the game to their siblings and friends.”</p> <p>“I noticed that the students enjoyed the way the app engaged them in problem-solving because they were not used to being included or listened to, but through the app, the students got a role to reflect and make their own choices.”</p> <p>"I had to skip two scenarios because I was not comfortable teaching them.”</p> <p>“There were two scenarios that were not culturally accepted; one that dealt with a girl’s body and the other with love.”</p> <p>“These themes do not fit into either our culture or our religion, and it was very uncomfortable to teach these topics in the mixed-gender class.”</p> <p>“We touched on these topics on the surface, but it wasn’t easy to go in-depth because it is not acceptable to talk about such things in our culture.”</p>
Theories of mind	Definitions of well-being			<p>«Psychological well-being is about the way one handles negative thoughts”</p> <p>“Psychological well-being is also about the mental state of a person”</p>

	Factors influencing well-being: Family			<p>“In my opinion, to achieve mental well-being, one needs guidance on how to sort the negative and positive thoughts and how to process those negative thoughts”</p> <p>“Psychological well-being is about the mental balance a person has. There is a balance between the negative and the positive forces, and in order to achieve mental wellness, neither of those sides should dominate the other”</p> <p>“Psychological well-being is a state that all people have, it goes both ups and downs, and just as one takes care of the physical state, one must also take care of the mental state as well”</p>
	Factors influencing well-being: Living conditions			<p>“I think that the family relationship between each other greatly affects adolescents’ well-being. If the family function dynamically, then it creates a safe environment around their child”</p> <p>“If the family is well, then the child will be well too, and vice versa”</p> <p>“Most of the adolescents who live in a tent struggle with a little place, and lack of privacy”</p> <p>“Many siblings share the same room and perhaps the same clothes”</p>

Factors influencing well-being: Financial conditions			<p>“One of the most critical factors that affect both the family’s and the child’s well-being is the current financial situation”</p> <p>“When the family lives in poverty due to a lack of financial resources, it will naturally affect their well-being”</p>
Factors influencing well-being: Belonging and freedom			<p>“The most significant impact on adolescents’ well-being is the lack of a sense of belonging. I have observed my student; most problems they face are related to the sense of belonging”</p> <p>“They live in insecurity; they do not know if they will stay here or return to their home country”</p> <p>“They feel limited and controlled, especially those who live in a refugee camp. They miss the feeling of freedom”</p>
Factors influencing well-being: war memories and traumas		<p>“A family member of mine died due to the war in Syria, and when I remember this incident, I isolate myself in a room and avoid talking to anyone.”</p>	<p>“An important factor that affects their well-being is the experiences they are left with after the war and after displacement.”</p> <p>“Many have experienced shooting and heard bomb sounds. Others have lost some of their relatives.”</p>
Factors influencing well-being: PSS initiatives			<p>“Programs that provide psychosocial support are crucial for adolescents”</p>

				<p>“Such programs have a high effect on adolescents’ well-being because they teach important and relevant topics.”</p> <p>“In my opinion, such programs are crucial because they make it easy to talk with adolescents about their difficulties.”</p> <p>“Programs that provide psychosocial support are crucial for adults and parents as well because those groups of people also need guidance on how to be aware of their mental well-being.”</p>
App impact on adolescents’ well-being	<p>Positive affect</p> <p>Absence of negative affect</p> <p>Self-efficacy</p>	<p>«I felt happy when I played the app, especially when I had the influence in helping the characters.”</p> <p>«I’m no longer embarrassed when someone bullies me or says ugly things. I started thinking this way after we played the app and reflected on the theme with our teacher.”</p> <p>“I was always scared and nervous when I had to say something in front of the class, but now, I feel less afraid. I got more confidence/ I became more confident”</p>	<p>“The app helped me to feel good, and I’ve got more positive energy when I wake up in the morning.”</p> <p>“I am no longer as much negatively affected when a problem occurs.”</p> <p>“I have become more confident in myself, also when it comes to talking about my feeling and my difficulties.”</p> <p>“I’ve become more self-assured when I stand in front of my class.”</p>	<p>«When the students learned to distinguish between red and green (positive and negative) thoughts, it led to developing their ability to process the red thoughts. It has become more orderly in their heads, which in itself leads to a form of well-being.”</p> <p>«I experienced that one of my students developed a remarkable ability to support himself because he wanted to enroll in an English course, but he doubted himself and had hesitant thoughts. After the app, he began to support himself and switch the dubious thoughts with more motivational thoughts.”</p>

	Social recognition	«After using the app, I felt that my opinions are important»		“At the beginning of the course with HH, some students of mine were from refugee camps and others from ordinary houses. Those from ordinary houses did not want to sit in the same group or next to those from a refugee camp. After using the app, they began to become friends and collaborate on various activities. I felt that the social divide between the poor and others who can afford more no longer mattered.»
	Optimism	“I learned that there is a solution to everything and that things would get better.”	<p>“I began to think more positively about the future.”</p> <p>“When I have a terrible day, I try to think that tomorrow will be better.”</p> <p>“I started imagining what the situation would look like in a week, a month, a year... It’s a strategy I use when I look forward to something.”</p>	
	Emotional coping: Before	<p>“I used to cry, sometimes scream, but mostly cry”</p> <p>“I used to get very angry, and sometimes uses physical violence, like beating others”</p> <p>“I used to be very scared and unsure, failed to stand and became very tired in my body”</p>	<p>“I used to be angry, and sometimes scream.”</p> <p>“I used to be quit and avoided talking to anybody.”</p> <p>“I used to be sad and quiet.”</p> <p>“I used to be afraid.”</p> <p>«When I felt bad or had a bad day, I always started a fight with someone”</p>	<p>«Generally, we have experienced that the students were not capable of expressing their thoughts and feelings. They used to hold feelings inside.»</p> <p>“During using the app, the students reacted very strongly to the language-use when they played a scenario that dealt with refugees. Some of them went out of the class, others got angry. I had to explain to them that this is</p>

	<p>Emotional coping: After</p>	<p>“I used to shrink myself under the duvet at night and play games with my phone” “I cried every time it appeared a bad memory” “When I had a bad memory, I used to either scream or arguing with someone at home. I also used to tell my family, “do not talk to me” or “leave me alone”.</p> <p>“It has become easier to talk about my feelings after using the app” “It was exhausting to suppress emotions for a long time, that’s why I prefer to talk about my feelings now.” “Every time I get nervous, I remember one of the scenarios and how we helped the character overcome her nervousness. I started applying the same strategy, and I noticed that it helps me also overcome my anxiety.”</p>	<p>“It has become easier to cope with difficult situations after using the app.” “It has become easier to deal with difficult situations because now I know I’m not alone. Others are also struggling with other things.” “I’ve learned that it’s okay to be sad but not let it go for a long time because things will get better.” “It is easier to talk about my emotions now after using the app.” “Now, I can put words into my emotions, and it became clearer which thought are red and green.”</p>	<p>just a scenario, and we have to learn how to deal with such language when others say something similar to us as refugees.”</p> <p>«I experienced that the students began to apply the idea of red and green (positive and negative) thoughts into all the situations they encounter in their everyday life. They also started to ask me for confirmation.» «I think that the HH app affected adolescents’ well-being and taught them how to cope with their emotions. The students were often caught up in their thoughts and were influenced by external factors. Those students had no one to talk to, and at school, we only talked about school subjects. The app made them reflect on their own feelings and thoughts.” “After playing the app, the students started talking about their emotions and thoughts.” “The app helped me see "hidden" problems I was not aware of. I sometimes face difficulty when I experience stress, and the app helped me sort out my thoughts and made it easy to reflect and find solutions.”</p>
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	Providing social support	<p>«My friend was once arguing with someone, and she was going to use physical violence. I went to her and calmed her down and told her not to beat but rather seek help from an adult. This happened after we used the app»</p> <p>«I tried to teach the app to my siblings at home so they can learn how to deal with their problems»</p>	<p>«I taught my friend what red and green thought is, and then I helped him sort those thoughts so that he can deal with his difficulties better»</p> <p>«Once I saw that my friend was nervous. I went and talked to him and calmed him down»</p> <p>«If I see someone is sad, I will go and support them»</p>	<p>“My students asked me if they can teach the app to their siblings and friends because they wanted their friends and siblings to learn how to solve their problems.”</p>
Emotional problem-solving skills	Self-management	<p>«I did not know how to solve my problems or control before using the app, but now, I know a little better»</p> <p>«Before, I used to go my own way if someone bothered me, now I have learned to defend myself without fighting»</p> <p>«When I used to argue with someone, I did not know how I should behave or react. Now after using the app, I try to remind myself how the different characters used alternative ways to solve their problems»</p>	<p>«I try to be calm and ignore the problem, but it isn't easy because self-control is not always possible in every situation»</p> <p>«I started to calm myself down when a problem arises and avoid exploding»</p> <p>«I started to think sensibly when I have difficulties»</p>	<p>«One of my students used always to argue with her sister at home about TV use, but after she played the game, she began to reflect on what she should do differently and sort which thoughts are red and green.”</p>
	Decision-making	<p>«Once, a person bullied me, and I instead of reacting, I controlled myself and did</p>	<p>«One day, someone in the neighborhood was rude and bullied me, I got angry, but instead</p>	<p>“I noticed a change in students' relationship with each other because there was an incident where a group of students from the same</p>

	Help-seeking	<p>not allow him say anything hurtful. I also went and told my teacher about it»</p> <p>«It has become easier to ask for help and talk with my teacher about a problem now than before»</p> <p>«I have learned that it is better to talk with someone I trust and ask for advice instead of reacting right away»</p>	<p>of starting a fight with him, I chose to ask for advice from my father»</p> <p>«I will try to apply what I have learned in the app to help me make a sensible choice»</p> <p>«I assume that if someone were to bully me at school, I would most likely tell the problem to my teacher and ask for advice»</p> <p>«I will share my problems with a friend I trust»</p>	<p>refugee camp used to be mean to one of the boys in the same group. After using the app, the boys admitted to the teacher that they were naughty and decided to apologize to the boy because they realized it was wrong.”</p> <p>"My students began to dare to ask for support and advice.”</p> <p>“One of my students came to me after playing the scenario that dealt with suicidal thoughts and told me that she had thought about suicide herself because she is not feeling well at home. I’m following up with this student now.”</p> <p>“Many students did not dare to talk about their difficulties; they thought that their challenges were taboo. After the app, they began to seek out adults and ask for help and advice.”</p> <p>“We need more time to observe our students and see if they will seek help because we have not had enough time.”</p>
Suggested changes of the app	Cultural adjustment		<p>“They who created the HH app should include someone who know the Arab culture and Arabic language so they can create a more relevant scenario.”</p>	<p>«The translation does not have to be literal because some words were culturally inappropriate. One can opt-out or replace inappropriate words with more appropriate words.”</p> <p>“Some scenarios can also be adjusted to suit the culture of the target group.”</p>

	Parents involvement			<p>“Parents should be involved in the app; either they get the opportunity to play it or make a similar app for them so they can gain knowledge about the problem.”</p> <p>“The parents should receive courses/information on red and green thoughts so that when the student talks about their challenges at home, the parents can have knowledge.”</p>
	More scenarios	“Maybe they can build more scenarios so we can learn about more relevant topic.”	“I wish for the HH app to be expanded so we can learn about more relevant problems, e.g., problems related to school, problems at the street between boys, problems between siblings at home.”	
	User interface			<p>“The font size was too small; maybe make it bigger.”</p> <p>“Some of the characters can be adjusted, e.g., some of the adult characters may become a little softer because some characters seemed very strict.”</p> <p>“The app should include videos, not just photos, to get more insight into the different stories.”</p>

Appendix G: Summaries of focus group interviews

Transcription. Teacher and PSS staff group. Summary

Background

Informant A: a teacher with a bachelor's degree in accounting. She has worked as a teacher for 6 years at MAPs in Lebanon. The teacher has previous experience with the analog version of the Helping Hands program and prior experience with similar psychosocial support programs.

Informant B: an English teacher with a bachelor's degree in English. She has worked for four years with MAPs as an English teacher, and the Helping Hands program is the first psychosocial support program she works with.

Informant C: he is an engineer and has worked with MAPs for five years. He worked as part of the management in another organization but changed his job back to MAPs and works as a teacher now. The informant has not previously experienced either the analog version of HH or another PSS program; thus, the HH app is the first PSS-program he works with.

Informant D: he is an educator and has a bachelor's degree in pedagogy and has worked as a teacher in Syria and Lebanon. He has worked with MAPs for two years as a teacher. He has previous experience with HH the analog version, and now he works with HH the digital version.

Informant E: she has a degree in health sciences and IT from Syria and works as a teacher with MAPs. She has also taken courses in PSS with the guidance of Dr. Solfrid and worked with both the analog version and the digital version of HH.

Reflections on the learning, health and well-being of adolescents

- What are your thoughts on/understanding of psychological well-being?

Psychological well-being is about the way one handles negative thoughts. Psychological well-being is also about the mental state of a person. To achieve mental well-being, you need guidance on how to sort the negative and positive thoughts and process negative thoughts. Psychological well-being is also about the mental balance a person has. There is a balance between the negative and the positive forces, and neither side should dominate the other. It is also about seeing the world and others with a positive outlook. Psychological well-being is also about getting out of the mental ailments one has. Psychological well-being is a state that

all people have, it goes both ups and downs, and just as one takes care of the physical state, one must also take care of the mental state as well.

- What factors affect/influence the psychological well-being of Syrian refugee adolescents? Can you provide examples?

The factors that affect psychological well-being are many, including the family's financial condition, place of residence, the freedom of a young person in the current country, the right to a residence permit, and a sense of identity. Other factors may be the family itself and their relationship together. The financial condition is not decisive because if the family members feel belonging and freedom, it will positively affect the psychological well-being anyway. The most significant factor that teachers observed that young people are affected by is the feeling of belonging in a foreign society. Other factors may be negative memories from the war in Syria. The adolescents' current residence also impacts the psychological well-being, most of them struggling with little space and no private space.

- What are your thoughts on the role of psycho-social support in education? And what is the significance of psycho-social support in the education of Syrian refugee adolescents?

Programs that provide psychosocial support are crucial for young people. The content in such programs affect young people positively because they teach an important and relevant issues. Such programs make it easy to talk to adolescents about difficult experiences. Teachers generally support such programs because they see positive effects from them. One of the informants believed that such programs are essential for the adult and parent group as well because they need guidance both for their psychological well-being and for their children.

Question related to the implantation of the HH app

- How would you describe the HH app? What is its purpose?

The HH app aims to help adolescents see different solutions when a problem arises. The app teaches young people that there are several possible solutions. The app is very useful. The app provides self-help. The app taught adolescents how to deal with positive and negative thoughts and better understand emotions. The app teaches adolescents problem-solving skills.

- Can you talk about how you have used the HH app?

All teachers had a group each. The teachers prepared which scenario they will go through before each lesson, and during the class, the teachers explained those scenarios to the students orally. The teachers talked about possible positive and negative thoughts (red and green thoughts) around the theme and wrote a list on the board. The students started using the app

after that. The teachers and students reflected on each scenario after the students finished playing. All teaching took place at MAPs school/education center. One of the teachers used to sit in a circle with her group and asked the students to name an example of a problem they experienced. The teacher encouraged the students to reflect on possible solutions based on what they have learned from the app. The teacher further says that the students liked this activity because they could express themselves, but she also noticed that they had little ability to express themselves.

- Have you used the HH app in groups physically presents, or F2F? If you used the HH app through online classes, what digital platform did you use? How did it work?

All teachers used the HH app in physically present groups. No one used digital teaching.

- How did you experience the introductory training arrangements to using the HH app prior to teaching it? Did you feel prepared/comfortable teaching it?

The teachers had prepared and got acquainted with the HH app a month in advance. The teachers were comfortable teaching the app, and they had played the different scenarios beforehand to familiarize themselves with it. One of the teachers had not participated in the introductory training arrangement, but she received good help and guidance from other teachers.

- Did you follow each scene sequentially/chronologically? If not, in which order did you follow it, and why?

One of the teachers thought it was too short to go through all the scenarios, so she had to skip some. One hour in each scenario was not enough. Other teachers had skipped two scenarios because they felt that these scenarios were not culturally acceptable. One of these scenarios dealt with the body of a girl, and the other with love. The teachers did not feel comfortable teaching these topics when the classes were mixed, both boys and girls. Instead, they focused on the other scenarios that were more relevant to the students.

- Did you have sufficient time to conduct the introductory training?

There was not enough time to complete all the scenarios. The students needed more time to complete the first two because they were not familiar with using the app.

Experiences and observations after implementing the HH app

- What are your experiences on the utility of the HH app?

The app has many benefits for the students. The students were allowed to reflect on problems and find different solutions. The app got them to discuss and express their opinions. The

students were not used to discussing and express their views, neither at school nor at home. But the game gave them this role, and the students developed the ability to provide advice and participate in reflective conversations. The app helped the students sort their thoughts; they developed the ability to know which thoughts are negative and positive.

- To what extent did the app engage the adolescents? How?

The app has engaged the students to a huge extent. The app made them reflect on all the problems they encountered through the game. When the students played the app, they lived through those different scenarios and felt a part of them. The students were given the role of contributing and solving problems and helping others. The students became so engaged that they began to ask the teacher if they could teach the game to their siblings and friends. The students also liked that the game is made digitally because they could explore for themselves. The teachers noticed that the students enjoyed the way the app engaged them in problem-solving because these students are not used to being included or listened to, and through the app, the students got a role to reflect and make their choices.

- Did you notice any situations where you suspect the HH app had an influence?

The teachers had various examples where they noticed that the students reacted in a way that reminded them of the app. One of the teachers mentioned that one of the students always used to argue with her sister at home about TV use, but after the student played the app, she began to reflect on what she should do differently and sort which thoughts are red, and which are green. Another teacher mentioned that the scenario concerning refugees and belonging affected the students mainly and put them in a discussion that they should not feel excluded and outside the society and that they are a part of it and have the same rights. Another teacher experienced that the students began to apply the idea of red and green thoughts in all the situations they encounter in everyday life, and often ask the teacher to confirm those thoughts.

- Have you considered any negative experiences the adolescents may have had when using the HH app?

One teacher mentioned that she had a student who came to her after playing a suicide scenario and said that she had thought about suicide herself because she is not feeling well at home. The teacher is following up on the student now. Another teacher mentioned that a student reacted very strongly to the use of language when they played a scenario that dealt with refugees. The teacher elaborated that he had to explain to the student that this is just a

scenario and that we should learn how to deal with such language when others say such things to us as refugees.

Considerations related to the HH app

21. After having used the HH app can you elaborate on your experience related to:

- The relationship between the students/adolescents
- The adolescent's ability to self-soothe
- The adolescent's ability to solve the daily challenges they encounter

One of the teachers noticed a change in the students' relationship because there was an incident where a group of students from the same refugee camp used to be mean to one of the boys in the same group. After using the app, the boys admitted to the teacher that they were naughty and decided to apologize to the boy because they realized it was wrong. Another teacher noticed that one of the students developed a more remarkable ability to support himself because he wanted to enroll in an English course, but he doubted himself and had hesitant thoughts. After the app, he began to support himself and switch the dubious thoughts with more motivational thoughts. Another teacher mentioned that at the beginning of the course with HH, some students from refugee camps and others from ordinary houses did not want to sit in the same group or next to each other. After using the app, they began to become friends and collaborate on various activities. The teacher felt that the social divide between the poor and others who can afford more no longer mattered.

- To what extent do you perceive the HH app as being of relevance in the adolescent's psychological well-being? If so, how is it relevant?

The teachers elaborated that the app HH was very relevant for students' psychological well-being. They believed that the students were often caught up in their thoughts and were influenced by external factors. Those students had no one to talk to, and at school, we only talked about subjects. Such an app as HH indirectly affected students' well-being, in the form of a game, and made them think about their own feelings and thoughts. Another teacher believed that there is a strong connection between the student's ability to express their thoughts and feelings and mental well-being. The teacher felt that the students could not express themselves before, but after the app, they started talking more, and it had a positive effect on their well-being. Another teacher believed that when students learned to distinguish between red and green thoughts, it led to developing their ability to process the red thoughts. It has become more orderly in their heads, which in itself leads to a form of well-being.

- Have you experienced a lower threshold among the adolescents in asking for help/support or talking about psychological difficulties after using the app?

The teachers felt that the students began to dare to ask for support. Many students did not dare to talk about their difficulties; they thought that their challenges were taboo. After the app, students began to seek out the adults and seek help and advice. The teachers also felt that they need more time to observe their students because now they have not had enough time to notice such an effect.

Questions on the HH app directed to teachers and PSS staff

- To what extent do you experience the HH app as a useful tool on the face of the challenges you experience in your work?

The teacher believed that the app helped them see "hidden" problems they were not aware of. They felt that they themselves experience indistinct and difficulty when they experience stress and that the app helped them sort out such thoughts and made it easy for them to reflect and find solutions.

Room for improvement of the HH app and the introductory training

- Can you comment on how the HH app could be different or improved?

Teachers had several points to point out:

1. the font size was too small. Students with poor eyesight found it challenging to read.
2. The translation does not have to be literal because some words were culturally inappropriate. One can opt-out or replace inappropriate words with more appropriate words.
3. Some scenarios can also be adjusted to suit the culture of the target group.
4. Some of the characters can also be adjusted, e.g., some of the adult characters may become a little softer because some characters seemed very strict.
5. Parents should be involved in the app; either they get the opportunity to play it or make a similar app for them so they can gain knowledge about the problem.
6. The app should include videos, not just photos, to get more insight into the different stories.
7. The parents should receive courses/information on red and green thoughts so that when the student talks about their challenges at home, the parents can have knowledge.

Transcription. Female adolescents' group. Summary

Informant A: 14 years. 5th grade in elementary school. She lives in an apartment with her family.

Informant B: 14 years. 5th grade in elementary school. She lives in a tent in a refugee camp with her family.

Informant C: 13 years. 4th grade in primary school. She lives in an apartment with her family.

Informant D: 14 years. 4th grade in primary school. She lives in a tent in a refugee camp with her family.

Questions related to the HH app

- Can you explain what the HH app is?

The informants believed that the app is a tool that tends to help them solve problems and see possible solutions. The app also aims to learn how to help and support others when they need it. (It seems that informant A and B are good friends, and both are talkative and confident, especially informant A who always took the first word. Informants C and D are less secure and are often influenced by others' opinions; they also seem weaker academically.)

- How did you experience the app?

The informants all agreed that the app has given them a good experience and wish there was more of the game to continue with it.

- Is it difficult/easy to use?

They all agreed that it was easy to use.

- What is your impression of the language used in the app? Is the vocal language easy to understand? Is the written language easy to understand?

The informants generally thought that the language was easy to understand, especially the oral language. Some of the girls felt that some words were difficult to understand as for the writing language because the translation was not precise enough. The teacher present in the class took responsibility for simplifying the terms that were difficult to understand.

- To what extent is the different scenarios relevant to your lives?

The informants did not understand the question, so I had to repeat myself and simplify the question. Informant B believed that she has learned to express herself better after playing the different scenarios. Informant A thought that she was bad at seeing solutions to the problems that arose before and that the various scenarios taught her to see possible solutions.

Informants C and D were insecure and did not have much meaning other than thinking the game affected them well.

- What do you think of the main characters in the game?

The informants thought that the characters were good, but that they were not many. They felt that the characters were often repeated in the scenarios.

- Can you relate any of these characters to yourself or any of your friend?

The informants respond with "sometimes." Informant A mentioned an example of an incident that happened to her friend where the incident reminded her of the app's character. When I asked her to elaborate further, she became insecure and began to look at her friend and smile. Informant C believed that the characters reminded her of several people in her life (There was some nonsense in the background, some of the boys from the boys' group came in and started joking ... and the sound became unclear. It happened repeatedly, and I asked the girls to call the teacher if it happened again. We lost a little thread, so I had to move on to the next question.)

- How many times have you used the HH app in the group?

The informants replied that they used the app for two weeks, with two hours in each class.

- Did you use the HH app at home or in your spare time? If yes, why did you use it?

The informants used the app only at school, and when someone tried to search for the app at home, they did not find it on the App store.

- In your opinion, is it important for you to use the HH app? If yes, why? If no, why?

The informants agreed that it is essential to use the app. Some thought it was necessary because if they encountered a difficult problem, they could turn back to the app. Others felt that the app was important because it taught them how to help others. They learned new topics through the app also.

Question about having used the app

- Can you, in your opinion, explain the utility of the HH app?

The informants had different opinions. Informant A believed that she learned more about how to defend and protect herself after using the app. Informant B thought the same as informant A (she was influenced by her opinion), she also thought that she has become better at helping her friends. On the other hand, Informant C thought that the app helped her start expressing her feelings, something she had not mastered before. Informant D mentioned an example where she reacted differently when a person bullied her, and instead of reacting, she chose to tell the incident to an adult.

- In your opinion, to what extent is the HH app engaging? Why so? And what aspects of the HH app are the most engaging/entertaining?

The informants agreed that the app was very engaging and fun. They had fun while learning new and relevant topics. Then the informants mentioned which scenario was their favorite. Most of them liked the scenario of presentation anxiety because they recognized themselves again in the situation.

- Have you had life experience that is relatable to the scenarios in the HH app? Can you explain?

Informant A was most involved in answering because she drew an example that was about bullying and that a classmate bullied her. This situation reminded her of the bullying scenario. She said that when the incident occurred, she chose to confront the person without conflict. This is something she learned from the app. The others had no answer.

- Have you had any negative experiences related to the HH app? Can you explain?

The informants believed that nothing about the app gave them negative experiences.

- Have you had any positive experiences related to the HH app? Can you explain?

The informants answered yes. Informant B elaborated that she was always embarrassed and nervous when she had to say something in front of the class or when someone teased her, but now she handles such situations better. Informant D mentioned that she is less nervous when they have tests at school now.

Question about emotional coping before using the HH app

- How did you tend to act/behave under difficult circumstances?

The informants had almost the same opinion: they used to keep things to themselves without telling anyone else. They were also afraid of confrontation. (I noticed that the girls were often influenced by each other's opinion)

- How did you react when getting angry? (f.ex. at parents, siblings, other kids/adolescents and other adults you live with)

Informant B informed that she used to explode and scream when she got angry. Informant C used to scream and cry often. Informant D also used to get angry and sometimes use violence.

- How did you react when you got scared? (f.ex. in a specific situation, or in school, before holding a presentation)

The informants mentioned that some used to be nervous and insecure. Others replied that one could notice that they were scared by looking at facial expressions. One of the informants used to shrink under the duvet.

- How did you react when experiencing painful memories?

The informants said that they mostly cried or screamed, and one of them used to get angry at her family. Informant D used to tell her family not to talk to her because she was in pain. (The informants felt comfortable answering this question, and they joked a bit between each other as well)

- Can you explain how you used to express your emotions under difficult circumstances?

The informants could not express their feelings; they were afraid. They were most afraid that their parents would find out and get angry, so they chose to keep things to themselves.

Questions related to emotional coping after using the HH app

16. You have during the past weeks been using the HH app; a digital game intended to enhance the user's ability to cope with emotionally difficult circumstances and provide emotional support to friends and family.

- How do you cope with difficult circumstances after using the HH app?

The informants had a common opinion that before, they used to be quiet, now they dare to say more or ask for help from an adult. (The girls started to get a little restless in their bodies and wanted to finish the interview)

- How do you support friends and family in coping with difficult circumstances after using the HH app? Can you explain?

Informant A mentioned an example where a friend of hers was involved in an argument, and she was to use physical violence, but informant A intervened and denied her, explaining that it is better to tell an adult about the incident instead of hitting. This is because of the app. The others agreed.

- Has using the app influenced the way you express your emotions? If yes, how? If no, why not?

The informants mentioned that they have not yet been exposed to a situation where they needed to express their feelings, so they do not know yet. They assume that if something happens, they will most likely express themselves and their feelings to someone they trust.

17. The HH app is also intended to help the user see more options and possibilities when a difficult circumstance emerge.

- How have you coped with difficult circumstances arising after using the HH app?

The informants say that it has become easier to see other solutions when a problem arises, but they did not have a specific example. (The informants became more restless in their body and asked if there were more questions left).

Feedback

- In your opinion, are digital tools providing emotional support of benefit to adolescents in your age? Why? Why not?

The informants think that such programs are useful because they are about relevant topics for young people of their age. (The girls thought it was difficult to understand the question, so I had to simplify it, but I noticed that they got tired, so they could not think clearly). Informant A further believed that such programs are useful because they teach them to deal with various problems.

- Do you have any advice for the producers of the HH app? How can they improve the activities in the game to make it more suitable to adolescents in your age?

The informants want more of such programs or perhaps build further on the HH app to learn about more varied scenarios and more varied questions.

- Do you have any more feedback for the producers of the HH app?

The informants wanted to inform that they had a lot of fun while using the app and thanked for it.

Transcription. Male adolescents' group. Summary

Informant A: 13 years. 4th grade. Has spent six years at school. Lives with family.

Informant B: 13 years. 5th grade. Has spent five years at school. Lives in an apartment with his father and siblings.

Informant C: 12 years. 5th grade. Has spent five years at school. Living in a house with the family.

Informant D: 15 years. 6th grade. Has spent six years at school, three years in Syria and three years in Lebanon. Lives in a refugee camp with his family.

Informant E: 13 years. 5th grade. Has spent five years at school in Lebanon. Has lived in Lebanon for 6 years. They live in a refugee camp with the family.

Questions related to the HH app

18. You have been participating in groups where you have been using the HH app.

- Can you explain what the HH app is?

The informants said that the app's purpose is to help them overcome their problems in everyday life. The app learns how to deal with problems. The app teaches them how to deal with school problems, especially such as bullying and presentation anxiety.

- How did you experience the app?

The informants' experiences were positive about the app because the app taught them, among other things, how to deal with bullying and what they should do if they are bullied. Others said they felt good when they used the app.

- Is it difficult/easy to use?

The interviewees responded that it was simple and easy to use the app.

- What is your impression of the language used in the app? Is the vocal language easy to understand? Is the written language easy to understand?

The language was easy to understand, but some words were written in dialect and not in Fusha (formal Arabic). The written language was easy to understand, and the respondents learned new words as well.

- To what extent is the different scenarios relevant to your lives?

The informants believed that most of the scenarios were relevant because they also face the same challenges in everyday life. They recognized themselves again in all the different scenarios in the game.

- What do you think of the main characters in the game?

The informants think that the characters were okay; none of them were strange. They liked most that they helped the various characters to overcome the problems they encountered in the game.

(I noticed that the boys were uncomfortable and embarrassed to answer the questions. I guess it was because a teacher was present in the room.)

- Can you relate any of these characters to yourself or any of your friend?

The informants all answered yes. Informant D elaborated with an example where he recognized his friend who was bullied with the character who faced the same problem. The others replied that the characters were similar to people they know without elaborating. (The boys often look at each other and giggle/smile. When I tried to ask directly by name, the informant responded with the same opinion as the others)

- How many times have you used the HH app in the group?

They responded that they used the app five times, with 2 hours in each class.

- Did you use the HH app at home or in your spare time? If yes, why did you use it?

The informants answered with no. One of them said that he tried to search for the game on the App Store at home, but he did not find it. Another asked the teacher to help him download the game on his private phone but also failed.

- In your opinion, is it important for you to use the HH app? If yes, why? If no, why?

The informants responded with yes, it is important to use the HH app. One of the boys elaborated that the app teaches them new topics that are relevant, so it is important to use the app. They said that the app also teaches them to see new possibilities and solutions when a problem arises.

Question about having used the app

- Did you first use the HH app before, during, or after attending the HH groups? How so?

They used the app only during the classes.

- Can you, in your opinion, explain the utility of the HH app?

They mentioned earlier that the app mostly helps them solve problems they encounter in everyday life and see several possible solutions. One of them further said that the app helped him feel good, and he got more positive energy when he woke up in the morning. It was something he struggled with before, and by using the app, he felt more energetic.

- In your opinion, to what extent is the HH app engaging? Why so? And what aspects of the HH app are the most engaging/entertaining?

The informants agreed that the app is very engaging, firstly because it is made as a digital game. Secondly, because it teaches us important and relevant topics and gives us the opportunity to be a part of the game. We learned new things, things we did not know before. The helping hand is significant. The most engaging part for one of the informants was the scenario that dealt with Nora. What he liked most was helping her overcome the anxiety of presentation and get her to develop herself.

- Have you had life experience that is relatable to the scenarios in the HH app? Can you explain?

The informants answered yes. One of them mentioned an example where he was bullied in the neighborhood, and instead of fighting with the bully, he chose to interrogate his father and ask for advice. This situation reminded him of one of the scenarios in the app. Another mentioned that he was going to present a topic in front of the class and got presentation

anxiety and needed someone who could motivate him. The situation also reminded him of Nora's scenario in the app. (It was challenging to communicate with all the boys, they were very insecure and uncomfortable and did not have much meaning themselves. Two boys spoke mostly, and the rest just agreed. It wasn't easy to see facial expressions because they sat with masks. The teacher who was presently made the situation uncomfortable for the boys, in my opinion.)

- Have you had any negative experiences related to the HH app? Can you explain?

The informants replied that they had no negative experiences neither negative feelings. The characters in the game went through negative experiences, but it did not affect them negatively; on the contrary, they learned from it.

- Have you had any positive experiences related to the HH app? Can you explain?

The informants had partially answered the question before, and they added that they only had positive experiences with the app. They learned about relevant topics and played an essential part in the game to guide the characters and solve problems.

Question about emotional coping before using the HH app

- How did you tend to act/behave under difficult circumstances?

The informants had different opinions, some used to be sad, and others used to be afraid. One of them used to think sensibly and imagine what the situation would look like in a week, a month, a year... Another tried to be calm and ignore the problem but found it difficult because it is not always possible to control oneself.

- How did you react when getting angry? (e.g., at parents, siblings, other kids/adolescents and other adults you live with)

The informants mentioned that some used to be angry; others used to be quiet and not talk to anyone. Others used to calm themselves down to avoid exploding. (I observed that three of the informants paid little attention to the questions and rarely answered. When I asked them directly, they copied others' answers)?

- How did you react when you got scared? (e.g., in a specific situation, or in school, before holding a presentation)

The informants mentioned that they used to be nervous and insecure about themselves and the people around them. Some did not dare to talk, and others lowered their heads and avoided eye contact. (Here too, three of the boys copied others' answers when I asked them directly and did not have their own opinions. Some of the boys start joking around with each other).

- How did you react when experiencing painful memories?

They used to be sad and tried to avoid talking to others in the family. One of them mentioned an example where one of his relatives died in the war, and when he remembers this incident, he tends to isolate himself in a room and avoid talking to others. Another also mentioned that he used to have temper tantrums. (The teacher who was present left the classroom, and it was just the students and me alone.)

- Can you explain how you used to express your emotions under difficult circumstances?

One of them used to share his feelings with a friend he trusted. Another used to communicate with his father or mother. The rest used to keep things inside and not share with anyone. (The boys start to get very restless, two of them hid away from the camera, and the rest started talking with each other about other things).

Questions related to emotional coping after using the HH app

- How do you cope with difficult circumstances after using the HH app?

The informants responded that they have not yet encountered a difficult situation, so they were unsure how they would react differently. Some assumed that if someone were to bully them at school now, they would most likely tell the problem to their teacher or family and ask for advice.

- Do you do anything differently after having used the HH app?

The informants agreed that they try to think differently and find different solutions when a challenge arises. The boys try to apply what they have learned in the app to their everyday life. (The boys began to joke a lot with each other, and it became difficult to keep calm and concentration around the questions. I guess it's because the teacher left the room, and the boys became more relaxed.)

- How do you support friends and family in coping with difficult circumstances after using the HH app? Can you explain?

Some informants mentioned that they would help family and friends' sort and analyze which thoughts are red and green and, further, try to work with the red thoughts. Also, if someone were sad or nervous, they would try to comfort the person.

- Has using the app influenced the way you express your emotions? If yes, how? If no, why not?

The informants all answered yes. Most of them were of the opinion that the app has had a positive effect on how they express their emotions. They have become more confident in

dealing with difficult emotions and feel that it is easier to talk about them with others. (There was a break on the internet, so I had to end the conversation and start again. This took time because the boys had to call after the teacher from another room. The boys were very restless and started interrupting me and asking me irrelevant questions about other things.)

- The HH app is also intended to help the user see more options and possibilities when a difficult circumstance emerge. How have you coped with difficult circumstances arising after using the HH app?

(The internet got bad, and the boys did not hear the question, so they kept joking with each other. I had to repeat the question several times). Some of them replied that the app helped them see other possibilities and solutions, so it has become easier to cope with difficult situations. One of them also said that it has become easier for me to cope with difficult situations because now I know that I am not alone, but others are also struggling with other things. Another mentioned that it has now become easier to ask for help from an adult or the family.

Feedback

- In your opinion, are digital tools providing emotional support of benefit to adolescents in your age? Why? Why not?

Everyone answered yes; they stated that such programs are beneficial and motivating for young people, especially when they are made in games or apps. One of them said that such apps teach them things they do not learn otherwise in books. Another mentioned that it was easy to understand through such programs.

- Do you have any advice for the producers of the HH app? How can they improve the activities in the game to make it more suitable to adolescents in your age?

The students want to have more of such programs in their education. They also wish for the Helping Hand app to be expanded so that they get more new scenarios and more problems to solve. Examples: problems related to school, or problems that occur on the street between boys, problems between siblings, etc. As an improvement to the HH app, one of the students suggested that those who created the HH app should include someone who has a good knowledge of Arabic culture and language so that they can create more relevant scenarios.

- Do you have any more feedback for the producers of the HH app?

They had nothing more to say.

