

**The Happy Helping Hand
used by Syrian displaced adolescents in Lebanon:
a Pilot Study of Feasibility, Usefulness and Impact**

Abstract

Background: The ongoing Covid-19 pandemic, economic crises, the aftermath of the explosion in the Port of Beirut, and the impact of the war in neighbouring Syria, have together resulted in a great need for psychosocial support (PSS) among adolescents in Lebanon. Mental health and wellbeing games represent a scalable approach for improving wellbeing and psychosocial skills in adolescents across economic divides, and have potential to improve the equity of mental health service access.

Objective: The Happy Helping Hand (HH) digital game was developed to address the urgent need for innovative approaches to reach Arabic speaking adolescents (including refugees) who are struggling in poverty. The aim of this study was twofold: to evaluate the feasibility and usefulness of the HH, and to examine the potential impact of the game in improving adolescents' psychosocial wellbeing.

Methods: A mixed methods study was undertaken to achieve these aims. The study took place in Central Beqaa from September to October 2020. Participants were recruited in informal settlements for displaced Syrians. 20 Syrian adolescents aged 13 – 17 years participated in a ten-session PSS program which took place over a period of ten weeks. During this program the HH was used in all sessions, and the impact of the game evaluated. Impact was evaluated using a validated wellbeing questionnaire undertaken both at baseline and directly after the end of the PSS program. Usefulness and feasibility was assessed by participants by a questionnaire designed for this study, as well as by an interview and session-to-session reports by the PSS group-leader.

Results: The refugees who used the game found it easy to use, educational and they thought it helped them feel better. After ten weeks of using the HH, significantly better wellbeing was reported by girls and boys. The mean scores in wellbeing changed from indicating depression before using the game, to normal wellbeing (non-depressed) after having used the app for ten weeks.

Conclusions: There is an urgent need to upscale culturally appropriate interventions to address the mental health of adolescents in Lebanon. An evidence-based cognitive behavioral psychosocial game available for free to all young people in Lebanon was tested. The results indicated that the game was feasible, engaging and useful, and after having played the game, the adolescents' wellbeing had increased. This study adds to the evidence of e-health tools as useful to increase wellbeing, improve coping skills and prevent mental health disorders across economic divides.

Keywords: COVID-19; adolescent; games; coping; coping skills; mHealth; mental health; mobile applications; pandemic; wellbeing.

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The ongoing Covid-19 pandemic, economic crises, the aftermath of the explosion in the Port of Beirut, and the impact of the war in neighbouring Syria, have together resulted in a great need for psychosocial support (PSS) among adolescents in Lebanon (World Bank, 2020). Given the huge gap between the number of adolescents who could benefit from PSS interventions, and the number who actually receive evidence based PSS, interventions that can be upscaled at low costs are of particular interest (Bennett-Levy et al., 2010). As such, digital interventions seem more relevant than ever before as a way to provide PSS.

The main goals of PSS for adolescents are to improve wellbeing and to build coping skills for lifelong mental health (Smart et al., 2019). When innovative PSS interventions are developed and used in new contexts, they should be evaluated. This pilot study is the first to investigate the potential benefit of the Happy Helping Hand game (Raknes, 2020a), a cognitive behavioral based digital game for adolescents created to be useful across economic divides. The study was conducted in Lebanon amongst Syrian displaced adolescents, with a view to examining the potential feasibility, usefulness and impact of the game on Arabic displaced adolescents living in poverty. The aims of the study were a) to explore the feasibility and usefulness of the game on the basis of adolescents' experiences and b) to investigate the potential of the app to increase wellbeing.

Methods

Recruited participants

20 adolescents were recruited (11 girls and 9 boys) in the Al Marj area in the Beqaa valley, all of them Syrian displaced adolescents. There was one group for girls and one for boys, and the adolescents were between 13 and 17 years (mean age 14.4). The adolescents with whom the HH was implemented in this study, have witnessed the cruelty of war and many have seen friends and families die. Now they are living as forced displaced Syrians in poverty in Lebanon. The psychologist who ran the groups was also a displaced Syrian. 70% of the participants self-reported that they were illiterate or nearly illiterate, and none of them had their own electronic devices. According to the parents reports to the psychologist before they started the PSS sessions, there were behavioral and psychological problems among some of the adolescents, described as low self-confidence, absence of the future and use of violence.

Milestones in the study

1. Recruiting and training a group leader for PSS groups and data collection.
2. Recruiting adolescents (age 13 – 17) in the Informal Settlements in the Beqaa valley, Lebanon for participation in PSS groups.
3. Implementing 10 sessions PSS where the HH game was used by the adolescents. In the period from 2nd September to 10th October 2020 ten PSS sessions were weekly provided to two groups of adolescents (n=20).
4. Quantitative assessment was undertaken directly before session one and after session ten.

Quantitative data

Adolescents completed the questionnaire before and after the 10-session PSS-program. Data was collected by the group leader by paper and pen.

- i) A five items questionnaire (scale from 0 – 10) which was specifically designed for this study was used to assess the feasibility and usefulness of the HH game. Higher scores means more beneficial. The raw score ranging from 0 to 50 is multiplied by 2 to give the final score from 0 representing the worst imaginable wellbeing to 100 representing the best imaginable feasibility and usefulness.

- ii) Wellbeing was measured by the WHO wellbeing index (WHO5WBI) (Topp, Østergaard, Søndergaard & Bech 2015). The WHO5WBI is a five-items questionnaire validated in Arabic. The raw score ranging from 0 to 25 is multiplied by 4 to give the final score from 0 representing the worst imaginable wellbeing to 100 representing the best imaginable wellbeing.

Qualitative data

- i) Open ended answers reported by adolescents.
- ii) Written session-by-session reports and interview with the psychologist who was leading the groups.

The Happy Helping Hand (HH) game

The HH game was made with user involvement from Syrian refugee adolescents, Norwegian adolescents, and Lebanese, Palestinian, Syrian and Norwegian health-professionals and teachers. The game was launched in Arabic in June 2020, and in Norwegian in September 2020. The Happy Helping Hand is a cognitive behavioral-based tool where children learn how to problem solve, not for learning only, but for their healthy development. HH in its analogue version was developed in Norway from 2007, and is widely implemented in Norwegian schools and school health systems (Haugland et al., 2017). The program has been found to be highly effective in decreasing anxiety in a randomized and controlled study where the analogue version of the HH was used by adolescents in a school-based PSS program run by school health nurses in Norway (Haugland et al., 2020). The Arabic analogue version of HH was designed in 2017, and has been found to be culturally accepted and feasible for use by Syrians in Lebanon, and implementation of the program is associated with better mental health among the children who participate (Raknes & Kolia, 2020).



- PSS for adolescents 13 - 17
- Self-help or blended learning
- Cognitive behavioral based
- Application for phones and tablets
- Arabic

In the HH game, the adolescent helps a friend to master emotional challenges, such as fear of giving presentations, dealing with criticism, suicidal thoughts and bad memories. The game can be used as pure self-help, in PSS in formal- and non-formal education, or in blended learning.

In this study, the game was downloaded on the group leaders' and parents phone/tablet from searching *اليد المساعدة* or Happy Happy Helping Hand. A manual was used to guide the 10-sessions PSS program implemented (Raknes, 2020b). The game has ten scenarios, and in the PSS manual, each of these is the basis for one PSS session. The order of the sessions is flexible, and the PSS group leader was encouraged to choose an order on the basis of what he/she thought would be the best order. The participants met in tents in the camp where they were living, and the following procedures were followed to prevent Covid-19:

- a. Take precautions and health precautionary measures (distributing masks at the beginning of each session, sterilizing hands and wiping electronic devices, tab - phones) that we use in the game, a distance of at least 1 meter between the participants
- b. Adopting a spacious place, good ventilation and a small number of participants

Results

Feasibility and usefulness. As shown in Table 1, feasibility and usefulness were reported as very high by the adolescents. The total mean score on feasibility and usefulness was 98,70. This means that all adolescents gave maximum or near to maximum scores on all questions that has to do with feasibility and usefulness.

Feasibility and usefulness	Mean score
Do you think it was easy to know what to do in the game?	10,00
Did you like the game?	9,85
How educational do you find the game to be?	9,85
How beneficial do you think the game is to teenagers?	9,80
Do you think the game made you feel better?	9,85
Total score	98,70

Table 1. *The Syrian displaced adolescents (N=20) reported that the game was easy to use, they liked it a lot, found it very educational and beneficial, and they thought the game made them feel better.*

Changes in wellbeing

As shown in Table 2, at group level wellbeing increased from before the adolescents played the game to after they had finished the 10-session program where the game was used in all sessions. Both girls and boys reported a large positive change in wellbeing. The change is considered clinically relevant; the mean scores in the groups change from indicating depression before the sessions, to indicating normal wellbeing after the 10 sessions. Girls typically scored slightly lower than boys both before and after the HH was used, but seemed to benefit slightly more than the boys from the program.

Participant	Pre	Post	Change
Total (N = 20)	44.7	72.4	+ 27.7
Boys (n = 8)	48.5	75.0	+ 26.5
Girls (n = 12)	42.1	70.7	+ 28.6

Table 2. *Wellbeing, as reported by the Syrian displaced adolescent (N=20), on the WHO (five) wellbeing index (WHO-5WBI) after having used the Happy Helping Hand game.*

The change in wellbeing from before to after the PSS program, as shown in Figure 2, was statistically significant: On a one-way ANOVA the F-ratio value is 83.38403. The p-value is

$< .00001$. The result is significant at $p < .05$. The effect size assessed in Cohen's $d = (724 - 447) / 960.774948 = 0.288$, hence a positive, small effect size.

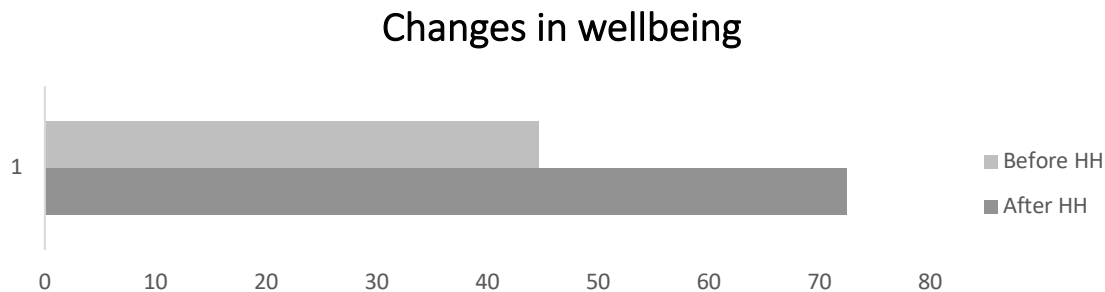


Figure 2. Wellbeing, as self-reported by the Syrian displaced adolescents ($n=20$) on the WHO wellbeing index, increased after the adolescents had used the Happy Helping Hand game.

Qualitative data on feasibility, usefulness and impact of the game

The adolescents responses

The adolescents reported that they found the game beneficial, relevant and useful. The adolescents suggested that the game could, and should, be used both at school and at home.

What did you learn from the game? led to answers like “How to act if I encounter a problem”, “Problem-solving at school and at home with the parents”, “Emotions and their layers and thoughts and how to talk to someone who's dealing with issues”, “Using the Happy Helping Hand to solve daily problems” and “How to solve problems and help others.”

The answers indicated that the adolescents found that the game had increased their ability to cope with daily life, as well as more general coping strategies that could be useful in a number of situations. The answers also indicated that they found that the game was beneficial for both development of social skills and psychological skills.

What did you like the most in the game? led to answers like “The stories are from our current reality”, “The steps to solve each story using the Happy Helping Hand”, “Choosing answers from the thoughts and the emotion bubbles”, “Rami and Noora's story” and “The story about painful memories”, “The organization of each story and the division of the steps” and “The red and green thoughts”.

Hence, the answers indicated that the adolescents could identify with the stories, liked the game with its main characters, scenarios and mini-games, and enjoyed the basic problem-solving system the game is centered around.

What did you like the least in the game? led to answers like “Slow sound”, “The story of presentation anxiety” and “Too much reading”. These answers indicated that for adolescents with little experience from going to school, reading tasks can make the game difficult and exclude adolescents with low reading skills. Importantly but sadly, scenarios from school contexts are not relevant for all adolescents.

The Psychologist's responses

The psychologist reported that he found the game beneficial for the adolescents, engaging, relevant and useful.

The psychologist wrote in session-to-session reports: The game facilitated “*group discussions anxiety, tension and fear, and their reflection on the body.*” Given that higher awareness of feelings and thoughts is beneficial for wellbeing and mental health, as is a basic hypothesis in cognitive behavioral programs, this is a positive finding. Furthermore, the psychologist continued: “*The game also made the adolescent engaged in talking about physical and psychological symptoms associated with their trauma experiences from war (e.g. loss of relatives and home). We talked about psychological symptoms such as withdrawal and avoidance. Discussions about green ideas and red ideas led to reflections about coping and coping strategies that can be tried and used.*” These statements indicate that the HH game was assessed to be a helpful tool to improve coping strategies in by the psychologist who ran the PSS-groups.

Further, the psychologist asked about the possibility of expanding the game with stories written in collaboration with the adolescents “*from their lives and the problems they used the Happy Helping Hand to solve with their families or within their community in the camp.*” The wishes from the adolescents and the psychologist to participate in further game development, indicate that the HH game is feasible, culturally acceptable and found useful.

According to the psychologist, more than half of the adolescents downloaded the game on their parents' phone, and started using it either alone, or with their family. “*In this session a teenage girl talked about the daily problems she was facing with her family, especially in helping her mother in the household. The girl downloaded the application on her mother's phone and she used the HH in solving some relational problems with her mother. She taught her mother this HH technique.*” When a game is downloaded and used between PSS sessions for real life problems, the learning process is more likely to continue both between the PSS sessions and when the PSS program has finished, and more likely to impact problem solving in real life situations.

Even if the psychologist expressed positive attitudes to the game for Syrian displaced adolescents living in poverty, digital divides and poverty as barriers for implementation and impact of the game were raised as a concern: “*The lack of electronic devices made use between the session impossible for some of the adolescents. Many parents did not own have their own phone device in the house (the tent). The inability of some teenagers to read and write, also created difficulties. Some adolescents, especially males, were absent from some of the sessions, due to their commitment to work to meet basic needs at home.*” These expressions showed that the psychologist knew that for many of the least privileged Syrian adolescents, a digital game like this could not be beneficial due to illiteracy and low access to digital devices, electricity and Wifi.

Discussion and Limitations

Digital games can be one way to reach a higher proportion of adolescents with psychosocial services (Uhlhaas & Torous, 2019). The impact of digital PSS has not been widely explored with adolescents living in poverty. In this mixed method pilot study a new cognitive behavioral mental health game targeted Arabic adolescents was evaluated. Feasibility, usefulness and potential impact was assessed for 20 displaced Syrian adolescents in the

autumn of 2020, during the Covid-19 pandemic. The results indicate that for the participating adolescents, using the HH was beneficial and associated with higher wellbeing.

It can be argued that health-games that can be beneficial not only for Western adolescents in developed countries, but across economic and cultural divides, they can be central in work towards sustainability goal number 3: Ensure healthy lives and wellbeing for all at all ages (Patel et al., 2018). The HH game was reported to be easy to use, engaging, relevant and useful by Syrian displaced adolescents. The participants in the study were living in informal settlements in the Beqaa valley in Lebanon. They have been traumatized by the Syrian war, and are living in poverty with lack of access to formal education and health services after they fled to Lebanon. The cost of interventions can be a barrier to implementation everywhere, and low-cost interventions are crucial for access for people in extreme poverty. Further, in the Arab culture, mental health problems is a taboo, and anti-stigma work needed (Dardas & Simmons, 2015). If using the HH game reduces stigma in Arabic families, and increase awareness of the value of mental health, these are potential benefits of the game that can increase equity in health.

To improve wellbeing is of crucial importance (UNHCR, 2020). Our results indicates that for displaced and traumatized adolescents living in poverty, the Happy Helping Hand had a valuable impact on wellbeing. The scale used for measuring wellbeing has high validity both as a screening tool for depression and as an outcome measure in clinical trials, and has been applied successfully across a wide range of study fields (Topp et al., 2015). Wellbeing is highly associated with depression and suicide, hence interventions that increase wellbeing will logically decrease the risk for depression and suicide (Topp et al., 2015). Further studies are needed to draw firm conclusions from this area.

Even if the results are promising, there are several limitations associated with this study. The one-group, pro-post design does not lend itself to the drawing of causal conclusions from the study. Furthermore, given the sample size chosen, generalizations should only be drawn with caution. Other factors than playing the game could have led to increase in wellbeing. Also, importantly, participating in the PSS discussion group led by a psychologist, and not the game per se, could also have led to the increase in wellbeing.

A central question further studies should explore, is whether the results will be replicated when the game is used in PSS groups led by teachers and not only by psychologists. If the adolescents' wellbeing increases when teachers are facilitating the game, upscaling through normal school systems would be easier. Further, studies should explore the same factors when the game is used as poor self-help, meaning without guidance from adults. Also, to prepare studies of the HH as a self-help tool for adolescents in poverty in Lebanon, data should be collected digitally directly from the adolescents, and not by the group leader.

Conclusion

Mental health problems are high frequent among adolescents across the world, and to improve community mental is important worldwide (Thornicroft, Debb & Henderson, 2016). The gap between adolescents who could benefit from PSS interventions, and adolescents who actually are participating in such interventions is huge, especially among traumatized adolescents in poverty (Patel et al, 2018). The central barriers to PSS are high costs, stigma associated with help-seeking and lack of culturally adapted evidence based programs. In this study we found that Syrian refugees living in poverty found the happy HH game both feasible and useful. After the adolescents had used the game, their wellbeing was significantly increased. The

results indicate that the HH game can be a way to improve wellbeing and mental health for Arabic adolescents in poverty. Our results build on the base of evidence on e-health interventions which shows them to be promising tools to increase wellbeing and improve health across economic divides (WHO, 2020).

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Disclosure

I, Dr. Solfrid Raknes, have the following commercial relationship to disclose: The Happy Helping Hand is a self-help material I have commercial interests in, in accordance with the standard sharing rules for innovation in the public sector in Norway.

Accreditation

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