LONG TERM IMPACT OF WAR, CIVIL WAR AND PERSECUTION IN CIVILIAN POPULATIONS

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LONG TERM IMPACT OF WAR, CIVIL WAR AND PERSECUTION IN CIVILIAN POPULATIONS

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EDITORIAL
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Editorial: Long Term Impact of War, Civil War and Persecution in Civilian Populations

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Editorial on the Research Topic

Long Term Impact of War, Civil War and Persecution in Civilian Populations

This special volume of "Frontiers in Psychiatry" has a focus on different aspects of extreme violence, human rights violations, and mental health. The subject is unfortunately highly relevant, as in spite of a growing number of international conventions, statements and contracts, violence and violations of the human rights covered by this documents, is rather increasing than diminishing on a global scale. International humanitarian and human rights standards have defined actions as not permissible "under and circumstances, whatever" (1, 2). This reflects the concept of "natural law" or "jus cogens," i.e., the understanding, that protection against some extreme acts of violence is obviously a basic concept of human ethics and that consequently protection must be given in an equal degree to everyone. The principle further reflects, that this acts have been documented not only to damage democracy, economy, and the development of peaceful civil society, but also to have a severe impact on public and especially on public mental health (3) to a degree that it might create more challenges then even the most commonly discussed Psychiatric illnesses, such as schizophrenia. Violence is destructive in two ways. On the one hand it destroys necessary health and other infrastructure and leads to brain drain of health care experts (4), while on the other hand it creates an increase in needs for that services through deprivation and physical and psychological injuries. Understanding long-term impact requires complex models especially in regard to the impact on populations, as explored by Musisi and Kinyanda in African communities. DroŽdek et al. have explored the limitations of the common models that are based on PTSD as major impact indicator and proposes more comprehensive approaches for a better understanding of trauma. Kienzler and Sapkota have explored the long – term impact in Nepal, a region that has experienced civil war and human rights violations for decades (5). Extreme acts such as torture, and especially sexual torture, civil war, or genocidal actions have been further shown to have an impact not only on the immediate victims, but also on family members and society. Hoffman and Shrira have explored this important issue that further underlines the need of prevention of violence. Recent data also show that there is a transgenerational impact (6), probably even by epigenetic mechanisms (7). Shahini et al. have documented the impact on (former civilian) war veterans together with their family members in Kosovo, a country facing ongoing social and economic problems (8). Increase of suicide and suicidal ideation is a frequently observed problem, and Marie Ingabire and Richters have explored this problem in Congolese refugees in Rwanda.

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WHO ARE THE PERPETRATORS?

There is a wide range of forms and perpetrators of such human rights violations, from obvious ones such as abductions and enslavement of Yezidi women by "non-state actors" such as ISIS/DAESH in Iraq and Syria (9, 10), torture and violence against women and other groups in Iran, or actions frequently described as genocidal against minorities as in Maynmar, or in the people's republic of China. This development is also supported by the abuse of the term of "terrorist" by governments against opposition parties, minorities, and human rights defenders to justify what cannot be justified (11). Understanding how perpetrators are created is important not to justify their actions, but rather to better understand the impact on victims and especially to prevent future violence by early interventions. Further, community and group processes should receive special attention. Vyshka and Çomo have explored this aspect in Albania, a country still haunted by the shadows of a bizarre dictatorship.

WHAT CAN BE DONE?

In acts of violence affecting large populations as in the Rwanda genocide or atrocities in South Africa and Uganda, new models aim at supporting surviving victims and their family members that often have to live together with perpetrators in the same regions by "transitional" justice models like traditional courts and "justice and reconciliation" committees (12). This is expected to help to recreate post-conflict countries in reconfirmation of civil society and rule of law, and give at the same time psychosocial support and reconfirmation to victims. The needs of victims independent from medical and psychiatric concepts and traditional treatment models or diagnostical categories (13) are often summarized by three key aspects. They include a confirmation of what has happened, as perpetrators frequently deny the reality of atrocities besides their responsibility in these acts. Further survivors and their family members need confirmation that the acts were wrong and cannot be justified, and a guarantee of "non-repetition," which is linked to the two earlier aspects. Refugees might need more immediate care and reliable protection, at a minimum until the situation in the home country has significantly improved, which might require transitional justice approaches as outlined above.

Trilesnik et al. are presenting the first data on the important international "RefuKey" stepped treatment project for refugee populations. Ekblad presents a model focusing on the factor of health literacy and human rights in displaced populations, as missing this aspect can increase the risk for long-term sequels in these populations.

The present collection of articles in "Frontiers" brings together articles on different so far insufficiently covered aspects of these problems from different regions of the world. We hope to contribute to a broader discussion on the subject and the editors and "Frontiers in Psychiatry" invite you to enjoy the excellent research and considerations presented by our authors.

AUTHOR CONTRIBUTIONS

The above co-authors served as co-editors of the special volume, and have given input to the editorial and the development of the special issue. TW served as the main writer for the editorial. All authors contributed to the article and approved the submitted version.

REFERENCES

1. Griffith R. How the prohibition of torture under human rights law applies to nursing. *Br J Nurs*. (2021) 30:680–1. doi: 10.12968/bjon.2021.30.11.680
2. Piggott F. Justification doctrine in the prohibition on torture, cruel, inhuman or degrading treatment. *Torture*. (2008) 18:116–29.
3. Wenzel T, Kienzler H, Wollmann A. Facing violence - a global challenge. *Psychiatr Clin North Am*. (2015) 38:529–42. doi: 10.1016/j.psc.2015.05.008
4. Zahlan A. The Arab brain drain. *Popul Bull U N Econ Comm West Asia*. (1979) 16:19–38.
5. Singh S. Nepal's war and conflict-sensitive development. *PLoS Med*. (2005) 2:e29. doi: 10.1371/journal.pmed.0020029
6. Kizilhan J, Wenzel, T. Concepts of transgenerational and genocidal trauma and the survivors of ISIS terror in Yazidi communities and treatment possibilities. *Int J Ment Health Psychiatry*. (2020). doi: 10.37532/ijmhp.2020.6(1).174. [Epub ahead of print].
7. Bierer LM, Bader HN, Daskalakis NP, Lehrner A, Provencal N, Wiechmann T, et al. Intergenerational effects of maternal holocaust exposure on FKBP5 methylation. *Am J Psychiatry*. (2020) 177:744–53. doi: 10.1176/appi.ajp.2019.19060618
8. Wenzel T, Rushiti F, Aghani F, Diaconu G, Maxhuni B, Zitterl W. Suicidal ideation, post-traumatic stress and suicide statistics in Kosovo. An analysis five years after the war. Suicidal ideation in Kosovo. *Torture*. (2009) 19:238–47.
9. Kizilhan JI, Wenzel T. Positive psychotherapy in the treatment of traumatised yezidi survivors of sexualised violence and genocide. *Int Rev Psychiatry*. (2020) 32:594–605. doi: 10.1080/09540261.2020.1809356
10. Kizilhan JI, Friedl N, Neumann J, Traub L. Potential trauma events and the psychological consequences for Yazidi women after ISIS captivity. *BMC Psychiatry*. (2020) 20:256. doi: 10.1186/s12888-020-02671-4
11. Wenzel T, Alksiri R, Chen AF. Terrorism: Group dynamic and interdisciplinary aspects. In: Bhui K, Bhugra D, editors. *Terrorism, Violent Radicalization and Mental Health*. New York, NY: Springer/Nature (2020). doi: 10.1093/med/9780198845706.003.0007
12. Rubanzana W, Hedt-Gauthier BL, Ntaganira J, Freeman MD. Exposure to genocide and risk of suicide in Rwanda: a population-based case-control study. *J Epidemiol Community Health*. (2015) 69:117–22. doi: 10.1136/jech-2014-204307
13. Kizilhan JI, Neumann J. The Significance of justice in the psychotherapeutic treatment of traumatized people after war and crises. *Front Psychiatry*. (2020) 11:540. doi: 10.3389/fpsyt.2020.00540

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OPINION
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Delusions of Immortality in a Post-War Society: The Albanian Case

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Keywords: delusions, immortality, WWII, war, psychosis, group dynamics

INTRODUCTION

The Albanian society suffered deep changes and restructuring immediately following WWII. And as if it were not enough, the society was shaken up for decades thereafter. The population was forced to live in a constant collective psychosis of war, with an imaginary 'enemy' continuously at the gate, apart from multiple everyday restrictions and an almost complete isolation from the neighboring countries (1, 2).

The Second World War (WWII) in the form it affected Albania, with subsequent invasions of fascist Italians and Nazi Germans, was almost simultaneously tinged with the colors of a civil war. Border skirmishes with Yugoslav partisans took place in the northern areas, sometimes corresponding with the crimes perpetrated from communist Albanians themselves. These factors, along with the Italian–Greek war whose hostilities happened partially on Albanian soil, have obviously rendered the theme of war, martyrs, heroes, and survivors, a highly popular one as part of the public political discourse (2, 3).

The moment when communists started ruling Albania might appear to coincide historically with the end of the Second World War; instead the psychological state of war induced by the regime was obviously not over. The psychosis of the war kept on looming with ebbs and tides for more than forty years (1945–1990), and has almost always been present in the psychological and physical environment, and unrelentingly broadcasted by official mass media (4).

The psychiatric and mental consequences in individuals following war, post-war, chronic exposure to hostilities, ill-treatment, and torture related to belligerencies, have been studied among Holocaust survivors (5). Other authors have enlarged their scope of study, and even of the diagnostic notions depicting war-related disorders (6, 7). However, large-scale studies on war impact are usually limited to a simple PTSD model of impact, without consideration of the complex impact of an imaginary of impending war, leading to continuous fear, avoidance behavior, and maladaptive coping styles that will potentially affect generations of a post-war society, even when there is overlapping symptomatology between PTSD and this complex changes in the large group's members (8).

THE POST WAR AS A CONTINUITY OF EVERLASTING HOSTILITIES

The communist propaganda took particular care to put pressure on the general population by, as noted before, continuously evoking the fear of an impending aggression. The case of Albania might be not unique; however, different strategies of influencing general opinion and fomenting feelings of incessant aggression have been documented during the cold war in the region (9).

One of the most productive and efficient strategies to make Albanians believe that the war was "not over," or at least imminent, were the graphic representations recalling the war. This mission was performed through flooding the country with tombstones and headstones of the dead patriots, mainly from the Second World War. The extension of these graphic monsters inside the territory was

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immense, and the writings on these stony premises evoked the incessant presence of the heroes: these are and must be immortal, i.e. still alive and among the people.

The number of stone monuments ('*lapidar*' – from Latin *lapis*, lapid – 'stone') exceeded 500 all over the Albanian soil, and was clearly decreasing after 1990 due to degradation, removal or deliberate destruction (10). Nevertheless, this massive presence for almost forty years (their construction started almost immediately after the end of WWII) might have played an important role into shaping the general opinion approach toward the alleged immortality of heroes.

The stone monuments were obviously not the only way that the official propaganda kept on imposing beliefs on the population (**Figures 1** and **2**, **Supplementary material**). The idea of heroes' immortality while fighting against the enemy, limited in reality mostly to the WWII years, has been a preferred subject for the production of movies, media, and literature (11). Working always under a very strict censorship, almost the entirety of all authors' works, papers, movies, and pictures, highlighted mainly the official policy of the governing party. Some free space (if any) could have been found solely in the interactive discourse between the official doctrine and the individual contributions to the public discourse (12).

The indoctrination and the perseverance on the theme of war, mixed up with a sense of glorification towards the dead, spread all over the society. In an attempt to incessantly control the public opinion, war (mainly WWII) and its aftermath were immortalized in sculptures, pictures, movies, and written media of all forms; from everyday journalism kitsch to serious literary works of hundreds of pages.

As the country entered an unprecedented period of state atheism (1967–1991), religious views were silenced or merely transformed, in a strongly death-denying culture (13). Some behavioral models and changes had therefore time to bloom into a delusional state and collective state of mind we perceive as a form of collective "war psychosis". The alarmism spread from continuous imaginary threats that the communist regime reported on a daily basis, the militarization of the society with a huge amount of micro bunkers covering Albania and built within a psychotic dictator's regime, the morning sirens that announced foreign assaults that never took place; all these and other factors strongly influenced post-war generations (**Figure 3** and **Supplementary material**). Behavioral models and life experiences were therefore influenced and distorted — not merely as a cultural trope.

AN IMMORTAL, ALBEIT HOSTILE GENERAL

The novel "*The General of the Dead Army*" of Ismail Kadare that we want to take as an example for the symbols and delusions of immortality was published in Albanian in 1963, and thereafter translated in several languages and re-published, with a first translation in French some seven years after the launch. The plot is focused on the everyday miseries and passions of an Italian general, visiting Albania with the task of exhuming and repatriating the remains of the soldiers, fallen during the lost battles of his country's army that invaded Albanian soil during WWII. The novel has been adapted as a movie in three versions, two different Albanian productions and one French–Italian coproduction (14), so it can be used for analysis of the public discourse.

A particular, obviously pathological state of mind is depicted, especially through identification and misidentification based delusions that gradually occupy the psychic horizon of the main actor, the *General*. Believing himself to be immortal and identifying his own image with that of a lost corpse, specifically that of the colonel Z, the *General* ambivalently pursues an insistent search of the fate of the dead colonel, and still conceals the remains of the latter, through dispersing the bones immediately after uncovering his skeleton. This psychic drama of the delusional belief in immortality, the particular setting of a post-war environment, and the figure of an army general collecting exhumed skeletons, are the main components of this complex history of psychotic despair.

The history of exhuming soldiers' corpses from Albanian soil has been a long one, and recently flared up again with the re-burial of Greek soldiers fallen during the Italian–Greek war of '40ies. Italian, British, and German soldiers have had also their historical share and war cemeteries have been built up to honor respective sacrifices (**Figure 4** and **Supplementary material**).

The novel *The General of the Dead Army* was an artistic mirror not only of the repatriation of Italian soldiers' remains. This last operation was organized and performed some ten years after the WWII was over. The person in charge of the real mission was a military chaplain in the ecclesiastic hierarchy; whereas the writer in the novel separates the man in charge into two different characters: that of the *General* and that of the *Priest*.

Uncovering skeletons and packing human remains is obviously not a simple and unemotional job. The *General* itself will endure the hardship of digging into the past. The hostilities might have been in reality been over, but the atmosphere encircling post-war life was not pacific. In a desperate attempt, focused to uncover the remains of *colonel Z*, the *General* identifies himself with the lost colonel. He starts flirting with his beautiful widow, and through undergoing a delusive process of identification with the lost corpse of the colonel, the acting character (*the General*) goes through nightmares, flashbacks, insomnia and delusional fantasies about a war he never experienced directly. After the serendipitous discovery of the remains of *colonel Z*, he decides to throw out the sack with the bones: at that point, the delusion was terminated. Unable to accept the incorrect and delusional identification, *the General* could not stand the idea, that after all, he was only identifying himself with a person killed during the WWII at least a decade before. The belief in immortality persisted for at least two hundred twenty pages of the novel of about two hundred sixty; the lines below describe the moments when the *General* gets rid of the remains of a corpse with whom he identified himself for a long time, till the uncovering of the bones corroded the delusion:

> *"…The general stumbled form the second time over the sack.*
>
> *It's this sack, he thought suddenly. It's this sack that's the trouble. It's almost done for us once tonight. Up until now everything had been going perfectly, but now this sinister sack has forced its way into our lives and everything is going wrong!*

"It's this sack that's put a jinx on us," he said out loud.

"What did you say?" the priest answered.

"I say that this sack is bringing us bad luck," the general repeated.

And as he spoke he gave it a vindictive push with his foot. The sack tumbled down the slope and fell with a resounding thwack into the water flowing at the bottom…" (15).

THE RISE AND THE FALL OF A DELUSION

It might seem that the novel *The General of the Dead Army* is a solitary reflection of the post WWII Albanian society vis-à-vis the recent past. Instead, partly reckoning with the legacy of Italy's fascism and the ravages of the Italian invasion and occupation, the writer deals a lot – although implicitly – with the Albanian present (16). Writing under socialism was not an easy job; however, the regime itself used and widely abused the potential of arts and literature to act as mass media, and influence the general opinion, modulate beliefs, and shape emotional group processes (12, 17).

The literature and arts in the post WWII Albania were state-sponsored and therefore, deeply identified with the official ideology. The novel '*The General of the Dead Army*' ('The General') was one of the most successful and widely read; it was included in the study of literature at almost all curricula covering levels from the obligatory education to the Universities. All together, the bulk of written literature and graphic arts produced and sponsored, reflecting the war heroism and its aftermath, aimed as noted before at creating the subconscious feeling of immortal conquerors.

In order to complete the illusive immortality paradigm, the presence of the enemy needed to be kept uninterrupted, and obviously threatening. The *General* dealt with exhuming corpses of his nation's army that was defeated in Albanian soil during WWII, but through a continuous emotional process, the *General* itself underwent a delusional experience. While flirting with the widow of the dead *Colonel Z.* and vesting himself as his reincarnation, he was dealing right from the start with a hostile, if not very unusual environment described with terms close to psychotic imagery: Table 1 reproduces some of the terms depicting the perceived environment.

The quotes and pages of the **Table 1** are selected from the English Version translated by Derek Coltman (Vintage Books, 2008) (15).

The menacing mountains and the foreign soil were the background to a hard physical task (page 3) because the *General* had the task of running from a graveyard to the other, in his desperate campaign against the mud threatening the excavations (page 9) (15). His counterpart, the *Priest* who is the companion on this grizzly pilgrimage, will mirror some ambiguous feeling that probably are actually those of the main character – the *General* itself.

Some emotional reactions in this process are indirectly described through the gaze and the facial features of workers employed to perform exhuming work, or bystanders that curiously follow up the *General* during his journey: **Table 1**.

TABLE 1 | Quotes from the text (15).

Page	
Describing a threatening, hostile environment	
3	Foreign soil
3	*Menacing* mountains
9	From graveyard to graveyard
9	His campaign against the mud
42	…slits were vertical then the little forts had a *cruel*, menacing expression
67	The circle of bystanders was gazing at them with *popping* eyes
203	Generals always inspire respect
The General and his counterpart: emotional experience and physical representation	
4	Feeling of pride
5	…face devoid of all expression
6	…companion's *taciturnity*
11	*Expressionless* features
11	Absent gaze
12	…felt alarm run through every fibre of his being
19	…severe profile and impassive, *masklike* features
43	*Indecipherable* expression in the villagers' eyes
43	We remind them of the invasion…
53	Heavens! Anyone would think I'm having *hallucinations*…
125	"A *nightmare*," the priest said. "Another night I saw Colonel Z. in a dream…"
137	…even a sort of *evil spell*, something sinister anyway, dogging this work of ours…
138	Sense of *oppression*
217	I must sleep, he thought. *Sleep, sleep …* I must sleep at all costs
Words from the afterworld	
14	Don't worry, your grave's going to be deep, really deep
14	…not to leave any clues behind, for fear someone might just notice something and *dig his body up* again.
61	…I have crossed over into a kingdom of bones, of pure calcium
77	…you'll die like a dog and no one will be able to recognize that *carcass of yours*
83	Such *exaggerated attachment* to a husband who's been dead twenty years…
88	…any greater satisfaction for an old soldier than that of pulling his old enemies back up out their graves? It's like *a sort of extension of the war*

The feeling of *pride of the General* (page 4) will be soon overshadowed by the *taciturnity* of the *Priest*, his companion (page 6); but this is just the beginning of the flourishing delusional situation. The *General* himself speaks about hallucinations on page 53; some seventy pages further he has a *nightmare* while dreaming of the dead (yet immortal) *Colonel Z* (page 125). Some kind of *'evil spell'* seems to control the psyche of the main character, as the sense of *oppression* (page 138) is thereafter replaced by a severe loss of sleep (page 217).

Not less interesting are the dilemmas and thoughts coming from the afterworld ghosts of soldiers, inserted in italics inside the chapters of the novel, sometimes interrupting the main flow of the storytelling **(Table 1).**

The author himself will at the end present the idea of the everlasting war: the exhumation – if not profanation of graves – can be seen as *a form of extension of the war* (page 88).

All these written materials; and other art works reproducing (even fictionally) the WWII and its aftermath, have as noted before been omnipresent part of the Albanian public discourse:

hence the psychological potential of keeping the hostilities alive even when there was no war to fight (18). The enemy was there: exhumed and therefore still able to fight and cause damage. The immortality of heroes (partisans) could not stand firm if this page of history was closed. The never-ending war has deeply influenced society and its generations. Several times, authors have suggested that the future of Albania even after the death of the communist dictator would have been conditioned more from its past, rather than from present international developments (19).

CONCLUSIVE REMARKS

According to DSM-5 delusions are fixed beliefs, not amenable to change in light of conflicting evidence (20). Abundant psychological and psychiatric research has considered post-war settings, with post-traumatic stress disorder being probably the main theme. However, when reporting on "war neurosis" (in the older psychiatric terminology), some authors, referring particularly to Balkan culture and setting, have even talked about a specific 'partisan hysteria' (6, 7, 21).

Cotard's syndrome is a rare and uncommon syndrome, which is characterized by various symptoms such as nihilistic delusions, hypochondriacal delusions, delusions of immortality, depression, and anxiety (22). Other forms such as delusions of missing organs, "walking corpse" syndrome, denial of existence and ideas of damnation might be part of the same spectrum, with some authors blaming diverse neurological conditions for this unusual psychopathology (23). From the very wide notion of the delusional disorders, Cotard syndrome is considered as 'monothematic' with contributing factors that influence two levels: the experiential and the inferential (24). Very close to each other, there is an interesting practical explanatory scheme offered by Ramachandran and Blakeslee (24) for Cotard and Capgras delusions.

Its coexistence with other forms of delusions might be quite well possible within the background of a florid psychopathology (25). The fictional case of a psychotic *General* dealing with the hard work of exhuming and repatriating soldiers' remains from a recently fought war is just an illustration of how the propaganda fomented delusions.

Assmann discusses the concept of *pietas* referring to religious rituals in the Ancient Greek literature, and the concept of *fama* defined as the glorious memento of individuals after death and the immortalizing of the name of deceased (26). Greek epos is a living sign of how heroes are considered immortal, be that in the pre- or post-Homeric; with the cult of heroes if not being the same, coming very close to the cult of gods (27).

The Balkan area and other countries that once were part of the Ottoman empire have been of great interest to psychology and psychiatry. In fact, continuous civil and inter-ethnic wars culminating sometimes to genocide have impressively influenced the collective consciousness. Vamık Volkan has been one of the most prolific authors on this issue. He suggested the term of 'chosen trauma', namely the shared mental representation of a massive trauma that the group's ancestors reportedly suffered at the hand of an enemy kept artificially alive (28). While commenting on monuments in Eastern Europe, he has underscored their function to reawaken chosen traumata through group symbols, manipulate groups, and induce group regression as a quasi-psychotic state to justify future aggression and wars (28, 29).

The communist regime in Albania suppressed religion but the virtual immortality it granted to the war heroes probably contributed in turn to a new form of religion. Other authors have also commented on the fact that humans intuitively believe that they survive death, although from a quite different perspective (30). A thorough scrutiny of death rituals in the Balkan area might offer further evidence of distorted perceptions vis-à-vis deceased persons and death as a process. A good example are the death rituals in the Greek Mani region described by Fermor where bones are exhumed and heroic poems are recited to keep the memory of dead warriors (and sometimes other persons) alive (31, 32).

In one of the most popular recent (1995) movies, the Bosnian born Serbian film-maker Emir Kusturica described a group of former partisan war heroes and their supporters, living in a psychotic underground post-communist micro society, producing military weapons, while the leaders convinced them that the war was actually not over in order to himself remain in power (33).

In summary, post-WWII Albanian society has been living under the burden of an unrelenting war psychosis. The enemy was "at the gates", and if not ready to assault, this assault would be seen as just a question of time. The huge number of concrete bunkers (more than one hundred seventy thousands) scattered over the small territory of the Mediterranean country during the time of the communist regime reflecting Hoxha's paranoiac position when leader of the country, contributed to the creation of a state of siege. Literature, graphic arts, cinematography and all other mass media were serving the same idea that the war was not over. Hence the heroes were still alive: their immortality meant that the enemy was still a continuous threat, with the society called to identify with the heroes in the defense of the country.

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All the authors contributed to the conceptualization and the drafting of the paper and they critically reviewed the manuscript.

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SUPPLEMENTARY MATERIAL

The Supplementary Material for this article can be found online at: https://www.frontiersin.org/articles/10.3389/fpsyt.2019.00613/full#supplementary-material

REFERENCES

1. Krasniqi A. Control through fear–the enemy at the gates: the case of Albania. *Remembrance and solidarity* (2018) 85–102.
2. Singleton FB. Albania and her neighbours: the end of isolation. *World Today.* (1975) 31(9):383–90.
3. Lukac DA. Aggression of Italy against Greece and the consequences of failure of Italian expansion. *Balkan Stud* (1982) 23(1):81–99.
4. Crump L. The Balkan Challenge to the Warsaw Pact, 1960–64. In: *The Balkans in the Cold War*. Palgrave Macmillan (2017). p. 151–71. doi: 10.1057/978-1-137-43903-1_7
5. Link N, Victor B, Binder RL. Psychosis in children of Holocaust survivors: influence of the holocaust in the choice of themes in their psychoses. *J Nerv Ment Dis* (1985) 173(2):115–7. doi: 10.1097/00005053-198502000-00009
6. Weisleder P, Rublee C. The neuropsychological consequences of armed conflicts and torture. *Curr Neurol Neurosci Rep* (2018) 18(3):9. doi: 10.1007/s11910-018-0818-6
7. Retterstøl N, Opjordsmoen S. Delusional psychoses associated with unpatriotic conduct during World War II: a long-term follow-up study. *Psychopathology* (1991) 24(4):209–18. doi: 10.1159/000284716
8. Lindley SE, Carlson EB, Hill KR. Psychotic-like experiences, symptom expression, and cognitive performance in combat veterans with posttraumatic stress disorder. *J Nerv Ment Dis* (2014) 202(2):91–6. doi: 10.1097/NMD.0000000000000077
9. Mack JE. Toward a collective psychopathology of the nuclear arms competition. *Polit Psychol* (1985) 1:291–321. doi: 10.2307/3790906
10. Lapidari I. The Department of Eagles. In: *Punctum Books*. The Department of Eagles (2015). p. 19–21.
11. Dilmaç JA. Martyrs never die: virtual immortality of Turkish Soldiers. *Omega (Westport)* (2018) 78(2):161–77. doi: 10.1177/0030222816688903
12. Jones S, Nehru M. *Writing Under Socialism*. Nottingham, Great Britain: CCC Press (2011) p. 1–7.
13. Vyshka G, Kruja J. Inapplicability of advance directives in a paternalistic setting: the case of a post-communist health system. *BMC Med Ethics* (2011) 12:12. doi: 10.1186/1472-6939-12-12
14. https://www.imdb.com/title/tt0084040/?ref_=nm_flmg_cin_41 [Last accessed June 20th, 2019].
15. Kadare I. *The General of the Dead Army*. London: Vintage Books (2008).
16. Weitzman E. Specters of Narrative: Ismail Kadare's The General of the Dead Army. *J Narrat Theory* (2011) 41(2):282–309. doi: 10.1353/jnt.2001.0001
17. Perry E. Moving the masses: emotion work in the Chinese revolution. *Mobilization: An Int J* (2002) 7(2):111–28. doi: 10.17813/maiq.7.2.70rg701202524uw6
18. Blumi I. Hoxha's class war: the cultural revolution and state reformation, 1961–1971. *East Eur Q* (1999) 33:303–26.
19. Artisien PF. Albania in the post-Hoxha era. *World Today.* (1985) 41(6):107–11.
20. *Diagnostic and Statistical Manual of Mental Disorders*. Fifth. Arlington, VA: American Psychiatric Association (2013). p. 87.
21. Antić A. Heroes and hysterics: partisan hysteria and communist state-building in yugoslavia after 1945. *Soc Hist Med.* (2014) 27(2):349–71. doi: 10.1093/shm/hku005
22. Debruyne H, Portzky M, Van den Eynde F, Audenaert K. Cotard's syndrome: a review. *Curr Psychiatry Rep* (2009) 11(3):197–202. doi: 10.1007/s11920-009-0031-z
23. Sahoo A, Josephs KA. A neuropsychiatric analysis of the cotard delusion. *J Neuropsychiatry Clin Neurosci* (2018) 30(1):58–65. doi: 10.1176/appi.neuropsych.17010018
24. McKay R, Cipolotti L. Attributional style in a case of cotard delusion. *Conscious Cogn* (2007) 16(2):349–59. doi: 10.1016/j.concog.2006.06.001
25. Nejad AG, Toofani K. Co-existence of lycanthropy and cotard's syndrome in a single case. *Acta Psychiatry Scand* (2005) 111(3):250–2. doi: 10.1111/j.1600-0447.2004.00438.x
26. Wojtkowiak J. *I'm dead, therefore I am. The post-self and notions of immortality in contemporary Dutch society*. The Netherlands: Ipskamp Drukkers BV, Enschede (2012) p. 21–3.
27. Hodge KM. Why immortality alone will not get me to the afterlife. *Philos Psychol* (2011) 24(3):395–410. doi: 10.1080/09515089.2011.559620
28. Volkan VD. Transgenerational transmissions and chosen traumas: an aspect of large-group identity. *Group Anal* (2001) 34(1):79–97. doi: 10.1177/05333160122077730
29. Castelloe M (2013). *Vamık Volkan Interviewed About His Peacemaking Work. Clio's Psyche. Special Issue on Peacemaking, Trauma, Veteran Suicide, and War*, Vol. 20. pp. 129–43.
30. Bremmer JN. The Rise of the Hero Cult and the New Simonides. *Z Papyrologie Epigraphik.* (2007) 158:15–26.
31. Vyshka G, Çipi B. *Death Rituals in Albania. An anthropological review*. Piscataway, NJ, USA: Gorgias Press (2010) p. 133–40. doi: 10.31826/9781463233983-019
32. Fermor PL (1958). *Mani: Travels in the Southern Peloponnese. New York Review of Books*.
33. https://www.dw.com/de/emir-kusturicas-underground-krieg-als-absurdes-schauspiel/a-19501680. [Last accessed 17.7.2019].

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Living on the Edge: Emotional and Behavioral Problems in a Sample of Kosovar Veterans and Wives of Veterans 16 Years Postwar

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Aim: This study aimed to explore the effects of war traumatic exposure on emotional and behavioral problems in a sample of Kosovar war veterans and the wives of veterans 16 years after the 1998–1999 war, as well as whether the level of education, income, well-being, and substance use are predictors for emotional and behavioral problems.

Methods: Self-report data were obtained from 373 adults, 247 male war veterans (66.2% of the sample) and 126 wives of other male war veterans (33.8% of the sample). The sample was recruited from a list of war veterans provided by the Kosovar National Association of War Veterans. The mean age of participants was 45.42 [standard deviation (SD), 7.64] years. Measurements comprised a sociodemographic brief structured interview, the Well-Being Index (WHO-5), the Harvard Trauma Questionnaire, and the Adult Self Report (ASR). Logistic regression analysis was conducted to explore if the demographic variables were predictors for ASR general scales and subscales. Multivariate analysis of covariance was performed by adding as covariates the continuous variables pointed out in the logistic regression analysis as discriminating factors between the groups. *Post hoc* analyses were corrected, and we estimated partial η^2 to measure the effect size.

Results: The higher traumatic exposure during the war, the greater the tendency to have emotional problems and behavioral problems for both kinds of participants. The result showed that there were no differences on the prevalence of emotional and behavioral problems between the two groups, and both veterans and wives of veterans had no differences on seeking professional help for their emotional and behavioral problems. Wives of veterans living in rural areas showed higher scores on almost all ASR scales compared with those living in urban areas or even with those of veterans from urban and rural areas. Veterans with elementary education level had the highest scores compared with other groups. Veterans with poor well-being had the highest scores compared with other groups. Using Internalizing, Externalizing, and Total Problems as outcome variables and trauma exposure, smoking, drinking alcohol, and well-being as predictors, we found that the model was a significant predictor for both male and female participants on these three scales.

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Conclusion: The relationship found between the level of exposure to traumatic events and emotional and behavior problems, as well as the factors that moderated such relations, in war veterans and their wives, should help global mental health researchers address the contextual dimensions of this relationship and identify better ways to prevent and treat those problems.

Keywords: war traumatic experience, emotional and behavioral problems, veterans, wives of veterans, predictor

INTRODUCTION

War and its consequences remain a challenge for mental health professionals because of specific dynamics that accompany individuals who were either witnesses and/or active participants in it. Studies have shown that conflict situations cause more mortality and disability than any major disease, destroying communities and families and often disrupting the social and economic development of nations (1). Nevertheless, the world is increasingly engaging in armed conflict, a significant part of which is not carried out by individuals trained in war craft, making their reactions even more complex. The war of 1998–1999 in Kosovo involved 36,000 people in combat, most of whom were not trained as professional soldiers.

A 2016 study in Kosovo (2) found a posttraumatic stress disorder (PTSD) prevalence of 11.2% in Kosovar war veterans 8 years after the conflict. Another study (3), which investigated long-term mental health outcome in Kosovo 8 years after the Balkans war, found a prevalence of 33% for PTSD or major depressive episode in a community sample. A large epidemiological survey conducted in the Balkans found prevalence for mood and anxious/depressed disorders of 47.6% and 41.8%, respectively, in 648 Kosovar adults (4).

Although many studies have studied combatants upon their return from service or combat, health professionals continue to debate about the effectiveness of the treatment of those who are faced with mental health problems, as well as about the impact of such problems on family members. A very important argument that should be considered in the context of this relationship is that the mental health problems of veterans are closely related not only to their service or participation in war and their traumatic exposure in the war, but also to the conditions in their lives when they return from war, how they perceive their situation, and the strategies they use to deal with stress. It is understandable that war causes deep moral dilemmas for every individual, but long-term consequences are related to the dilemma of survival, especially when their expectations are not met for the individuals, their families, and their society. Previous wars have demonstrated that veterans' needs peak several decades after their war service, highlighting the necessity of managing current problems and planning for future needs (5).

During the 1998–1999 war, Kosovars were exposed to intense social disruptions including death of family members and being forcefully separated from home and family. People's need for social support intensified at the same time that their support system was disrupted. The presence of psychiatric disorders and chronic use of experiential avoidance were expected to disrupt the process of trauma recovery and increase the difficulty of building the elements linked to high quality of life (6). Financial support, physical well-being, and other demographic variables remain to be explored in their relation with traumatic exposure and emotional and behavioral problems. This very complex context also includes the family, particularly the veterans' wives.

The number of studies examining the effects of war on veterans continues to grow. However, the same cannot be said about research carried out on the effects of war wounds on the wives of veterans. The results are often focused on negative aspects, showing an increase in psychological problems among veterans' wives (7, 8), with fewer studies focused on positive outcomes.

Posttraumatic stress disorder, the most common and perhaps the most visible result of participating in war, is characterized by a variety of symptoms of hypervigilance (9) with aggressive behavior (10, 11), as well as nonphysical forms of aggression (12). Posttraumatic stress disorder is often accompanied by an increased level of anxiety, depression (13), somatic symptoms, and difficulties in functioning.

In previous research, more than a third of war veterans' wives were found to meet the criteria for secondary traumatic stress (14), and veterans' PTSD was related to lower levels of marital adjustment (15–17). The findings of a considerable number of studies indicate that wives of veterans with PTSD are at an increasing risk of experiencing psychological problems and a lower level of marital adjustment than the general population (18–20). Furthermore, levels of avoidance, emotional numbness, and anger among veterans with PTSD are particularly connected with increased psychological and marital distress of their spouses (19).

The present study tested two hypotheses. The first hypothesis proposed that wartime traumatic exposure would predict emotional and behavioral problems in a sample of war veterans and the wives of veterans as assessed with Adult Self-Report (ASR). Building on this model, the second hypothesis stated that low level of education and income, poor well-being, and substance abuse would be additional predictors for a high level of emotional and behavioral problems.

METHODS

The study reported here is related to a larger study (unpublished manuscript, 2019) of the transfer of trauma through generations, which involves children of veterans of the 1998–1999 war in

Kosovo. The war was fought by the Kosovo Liberation Army (KLA), which had been created to respond to Serbian repression against the Albanian population such as the massacre of 53 members of one family (21). Most people in the KLA did not have military training, and some of them did not even have any prior experience using weapons. There are no final data about the exact number of war veterans in Kosovo, as different sources present different numbers.

PARTICIPANTS

We obtained self-report data from 373 adults, 247 male war veterans (66.2% of the sample) and 126 wives of other male war veterans (33.8% of the sample), a significant gender difference, $t(373) = 39.25$, $p = 0.001$ (**Table 1**). The sample was recruited from a list of 24,577 war veterans provided by the Kosovar National Association of War Veterans. This list, which was obtained from an Institute of Medicine (IOM) report, was compiled immediately after the war. However, it should be noted that there are various lists of Kosovar war veterans, with numbers given ranging from 13,000 to 47,000. The latter number most likely includes people who contributed to the war in noncombat roles (e.g., medical care, food supply, armaments supply, etc.) who registered on the longer list to obtain government benefits for war veterans. We used the IOM list as it seemed to be the most reliable source for actual KLA combat veterans. From this list, we identified 800 veterans from six regions of Kosovo who had at least one child of 6 to 18 years. We invited these 800 veterans to consent to their child's participation in a study of the effects of the Kosovar war on children of veterans, and 574 veterans (71.8%) gave consent. On the day of the scheduled data collection interview, 247 veterans and 126 wives of other veterans came to the data collection site and completed the forms for their children, as well as three additional forms about themselves. Data for the remaining children were obtained from other family members (e.g., older brother/sisters or grandparents), who were not asked to complete the additional self-report measures.

The mean age of participants was 45.42 (SD, 7.64) years, which did not differ significantly by gender ($t(371) = 1.64$, $p = 0.101$). Education level of participants was 33.8% (n = 126) with elementary education, 38.3% (n = 143) with secondary education, and 27.9% (n = 104) with higher education. There was no association between gender and education level ($\chi^2(2) = 1.68$, $p < 0.431$). Incomes were categorized according to average public sector income per month in Kosova: 0 to 200 euros (very low income; people with social assistance) = 24% (n = 91); 201 to 400 euros (low income) = 50.4% (n = 188); 401 to 800 euros (moderate income) = 21.7% (n = 81); and greater than 800 euros (high income) = 3.5% (n = 13). There was no association between gender and income ($\chi^2(3) = 1.12$, $p < 0.771$).

MEASURES

Sociodemographic sample characteristics were assessed using a brief structured interview. Wartime exposure and symptom severity on emotional and behavioral problems were assessed by means of the following three self-report questionnaires.

Well-Being Index (WHO-5). The WHO-5 is among the most widely used questionnaires assessing subjective psychological well-being. The WHO-5 is a short questionnaire consisting of five simple and noninvasive questions that tap into the subjective well-being of the respondents. This questionnaire has been translated in 30 languages and has been used in research studies all over the world. Our sample also showed very good internal consistency, with Cronbach's $\alpha = 0.891$ for the total sample, veterans $\alpha = 0.903$ and wives $\alpha = 0.859$. Higher scores mean better well-being.

Harvard Trauma Questionnaire. Part 1 (The Trauma Events Scale) of the Harvard Trauma Questionnaire (HTQ-R) assesses 41 categories of traumatic life events that respondents may have experienced during the war (e.g., as "combat situation" and "forced separation from family members"), with response options of "yes" and "no." The HTQ has demonstrated good internal consistency (22, 23) across culturally distinct populations. Our sample also showed very good internal consistency on the HTQ-R, with Cronbach's $\alpha = 0.856$ for the total sample, veterans $\alpha = 0.858$ and wives $\alpha = 0.853$. From the sum of all variables in this questionnaire, we created a new variable in distinct categories using a cutoff of +2 SDs. The categories of traumatic exposure were 1 = low exposed group = 1 SD, 2 = moderate exposed group >1 SD – <2 SD, 3 = high exposed group >2 SDs above mean, level of exposure during the war.

Adult Self-Report Form. The ASR questionnaire (24) asks participants questions about what they have experienced in the last 6 months. The ASR has 134 items, 11 of which describe socially desirable qualities and the rest of which describe various behavioral, emotional, social, and thought problems. Completion time is generally between 25 and 40 min. For most responses, participants use a three-level Likert scale: 0 = not true, 1 = somewhat or sometimes true, 2 = very true or often true. The last three items consist of questions about the number of days in the past 6 months the respondent has used tobacco, alcohol, and drugs.

The ASR has eight empirically based syndrome scales Anxious/Depressed: Anxiety-Depression, Withdrawn, Somatic Complaints, Thought Problems, Attention Problems, Aggressive Behavior, Rule-Breaking Behavior, and Intrusive Behavior. The sum of the scores on the Anxiety-Depression, Withdrawn, and Somatic Complaints scales yields a broad-spectrum Internalizing Problems score, whereas the sum of the Aggressive Behavior, Rule-Breaking Behavior, and Intrusive Behavior scores yields a broad-spectrum Externalizing score. The third broad-spectrum scale is Total Problems, the sum of all problem items on the form. The ASR also has six *Diagnostic and Statistical Manual of Mental Disorders* (DSM)–oriented scales: Depressive Problems, Anxiety Problems, Somatic Problems, Avoidant Personality Problems, Attention-Deficit Hyperactivity (ADH) Problems (with Inattention and Hyperactivity-Impulsivity subscales), and Antisocial Personality Problems, plus two scales based on research conducted by others (Obsessive-Compulsive Problems and Sluggish Cognitive Tempo). For all problem scales, a higher score represents a higher severity. The 11 personal strengths items (e.g., "I make good use of my opportunities") are summed

TABLE 1 | Distributions of demographic variables for participants.

Variables	Categories	N	%	Chi square
Subject Gender	Male	247	66.20%	$\chi^2(1) = 39{,}25$ p = 0.001
	Female	126	33.80%	
Ag groups	18- 35	31	8.30%	$\chi^2(1) = 259.30$ p = 0.001
	36-60	342	91.70%	
Place	urban	193	52.00%	$\chi^2(1) = .606$ p = 0.436
	rural	178	48.00%	
Education	Elementary	126	33.80%	
	Secondary	143	38.30%	$\chi^2(2) = 6.15$ p = 0.046
	Higher	104	27.90%	
Do you smoke?	Yes	153	41.00%	
	Sometimes	25	6.70%	$\chi^2(2) = 126.13$ p = 0.001
	No	195	52.30%	
Do you drink alcohol	Yes	10	2,70%	
	Sometimes	60	16.10%	$\chi^2(2) = 395.16$ p =0.001
	No	303	81.20%	
Do you have any illness	No	301	80.70%	$\chi^2(1) = 140.59$ p = 0.001
	Yes	72	19.30%	
Have you ever consulted	No	334	89.50%	$\chi^2(1) = 233.31$ p = 0.01
a health professionals'	Yes	39	10.50%	
	Very low	91	24.4%	
Incomes	Low	189	50.4%	
	Moderate	81	21.7%	$\chi^2(3) = 167.1$ p = 0.001
	High	13	3.5%	
Wellbeing	Poor wellbeing	84	22.5%	
	Moderate	184	49.3%	$\chi^2(3) = 44.7$ p = 0.001
	Better wellbeing	105	28.2%	
Traumatic experience during	High	16	4.40%	
the war	Moderate	185	50.50%	$\chi^2(2) = 139.78$ p = 0.001
	Low	165	45.10%	

to yield a Personal Strengths scale score, with higher scores indicating more strengths. In our sample, the ASR manifested excellent internal consistency: Cronbach's α = 0.942 for the total sample, α = 0.941 for veterans and α = 0.943 for wives. There were no significant differences in α by gender.

STATISTICAL ANALYSES

The main descriptive data (mean, SD, frequencies) were calculated for all variables. Differences in sociodemographic and clinical variables were investigated with χ^2 or analyses of variance (ANOVAs) for categorical and continuous variables, respectively.

T scores for all ASR scales were calculated based in Kosovo population norms (25). Logistic regression analysis was conducted to explore the possible prediction of demographic variables on ASR broad scales and subscales. Statistical performance of R^2 effect-size measures (26) also provided an effect size estimate of the variance accounted for by the indirect effect.

Multivariate analysis of covariance analysis was performed by adding as covariates the continuous variables identified in the logistic regression analysis as discriminating factors between the groups. *Post hoc* analyses were corrected, and we estimated partial η^2 to measure the effect size. All data were analyzed using SPSS/PC software version 24.0, and all statistical tests were bilateral with a $p \leq 0.01$.

RESULTS

We defined the prevalence of significant emotional and behavioral problems using a *T* score cutoff point of 60 (84th percentile, borderline + clinical range). For veterans and for wives of veterans, respectively, prevalence was 8.1% and 11.9% for Total Problem scores, 10.1% and 11.1% for Internalizing Problems, and 6.9% and 7.1% for Externalizing. There were no gender differences on the prevalence rate for these broad-spectrum ASR scales.

EFFECTS OF DEMOGRAPHIC FACTORS ON ASR SCORES

Gender. Means and SDs for male veterans and wives of veterans on all ASR problem scales are presented in **Table 2**, with gender differences tested using independent-sample *t* tests. Females had higher scores than males on only one of the ASR scale, namely, Somatic Complaints, $t = -2.48$, *degrees of freedom* (*df*) = 371, $p = 0.014$. No significant differences were found based on religion or place of residence (rural vs. urban).

Residence. Although no main effect of place of living was found, visual inspection of mean scores suggested a possible gender × residence interaction, which was tested in a series of two-way ANOVAs (**Table 3**). Significant interactions were found only for Internalizing Problems, $F = 6.60$, $df = 1$, $p = 0.01$);

TABLE 2 | Prevalence of empirical Total Problems of ASR according to gender.

		Male	Female
	Normal	95.1%	96%
Anxious/Depressed	Borderline	2%	2.4%
	Clinical	2.8%	1.6%
	Normal	92.7%	90.5%
Withdrawn	Borderline	3.6%	5.6%
	Clinical	3.6%	4%
	Normal	86.2%	88.9%
Somatic Complaints	Borderline	7.3%	6.3%
	Clinical	6.5%	4.8%
	Normal	78.9%	81%
Thought Problems	Borderline	12.6%	11.1%
	Clinical	8.5%	7.9%
	Normal	93.9%	93.7%
Attention Problems	Borderline	3.6%	4.8%
	Clinical	2.4%	1.6%
	Normal	93.9%	94.4%
Aggressive Behavior	Borderline	3.2%	4%
	Clinical	2.8%	1.6%
	Normal	92.7%	92.1%
Rule-breaking Behavior	Borderline	4.9%	4.8%
	Clinical	2.4%	3.2%
	Normal	91.1%	88.9%
Intrusive	Borderline	7.7%	7.1%
	Clinical	1.2%	4%
	Normal	82.2%	83.3%
Internalizing	Borderline	7.7%	5.6%
	Clinical	10.1%	11.1%
	Normal	85%	81%
Externalizing	Borderline	8.1%	11.9%
	Clinical	6.9%	7.1%
	Normal	82.2%	79.4%
Total	Borderline	9.7%	8.7%
	Clinical	8.1%	11.9%
	Low strengths	87.4%	89.7%
Personal Strengths	Moderate strengths	3.6%	1.6%
	Higher strengths	8.5%	8.7%

$\eta^2 = 0.02$. As seen in **Table 2**, females living in rural areas had higher scores on these scales than those living in urban areas and then males in either urban or rural areas.

Income. We also analyzed the effects of income on ASR scores. For males, income category had a significant effect on Anxious/Depressed, $F = 3.96$, $df = 3$, $p = 0.009$, $\eta^2 = 0.047$; Withdrawn $F = 3.72$, $df = 3$, $p = 0.01$, $\eta^2 = 0.04$; and Attention Problems $F = 3.76$, $df = 3$, $p = 0.01$, $\eta^2 = 0.04$. *Post hoc* tests indicated that the only significant pairwise effects ($p < 0.01$) were between the very low-income group and the moderate-income group. Male participants from the very low-income group had significanly higher scores on *DSM*–Depressive Problems, *DSM*–Avoidant Personality Problems, and *DSM*-Inattention, compared with those with low and moderate income.

For female participants, income category had a significant effect on Anxious/Depressed, $F = 4.57$, $df = 3$, $p = 0.005$, $\eta^2 = 0.101$, and Internalizing Problems scores, $F = 4.06$, $df = 3$, $p < 0.009$, $\eta^2 = 0.09$. *Post hoc* tests indicated significant differences between the very low-income group and both the low- and moderate-income groups ($p < 0.01$). For female participants, significant differences were also found in *DSM*–Depressive Problems; *DSM*-Anxiety Problems; *DSM*–Avoidant Personality Problems, and *DSM*-Inattention.

Education. Participants were categorized into three groups based on education: elementary (E), secondary (S), and higher education (H). Significant effects for education level were found for male participants on Total Problems, $F = 4.44$, $df = 2$, $p = 0.01$, $\eta^2 = 0.04$. According to Bonferroni correction tests, the elementary education group had significantly higher scores than those in the 2 higher education groups. When multivariate analyses of variance were conducted to test the effect of education level on the ASR subscales, results were significant for four scales for males, with the lowest problem scores in the higher education group and the highest problem scores in the elementary education group: Attention Problems, $F = 7.32$, $df = 2$, $p = 0.001$, $\eta^2 = 0.058$ (H < S < E); and Rule-Breaking Behavior, $F = 7.30$, $df = 2$, $p = 0.001$, $\eta^2 = 0.06$ (H < S < E). Male participants with higher education were also found to have significantly lower scores compared with the elementary education group on *DSM*–Depressive Problems; *DSM*–Avoidant Personality Problems, *DSM*-Inattention, and *DSM*–Antisocial Personality Problems.

For female participants, education level did not have a significant effect on the ASR broad scales. Education categories for female participants were found to have significant effects

TABLE 3 | Mean and standard deviation for ASR Total Problems and t test results according to gender and place of living.

	Male	Female	Urban	Rural
	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)
Anxious/Depressed	6.1(4.9)	7.1(4.9)	6.8(5.3)	5.91(4.3)
Withdrawn	2.8(2.7)	2.8(2.7)	2.9(2.9)	2.7(2.4)
Somatic Complaints	3.5(3.7)	4.5(3.9)	4.1(4.1)	3.5(3.4)
Thought Problems	2.8(2.5)	3.1(3.2)	3.1(2.6)	2.7(2.9)
Attention Problems	4.3(4.2)	5.3(4.1)	4.8(4.6)	4.4(3.6)
Aggressive Behavior	4.2(3.8)	4.3(3.4)	4.4(4.1)	4.1(3.1)
Rule-breaking Behavior	2.5(2.8)	2.1(2.6)	2.5(2.5)	2.1(2.5)
Intrusive	2.8(2.1)	2.8(2.1)	2.9(2.1)	2.6(1.8)
Internalizing problems	12.4(9.7)	14.4(9.9)	13.8(10.7)	12.2(8.5)
Externalizing problems	9.6(7.3)	9.2(6.6)	10.1(7.8)	8.8(6.1)
Total of emotional and behavioral problems	37.7(26.1)	41.2(24.1)	40.7(28.1)	36.4(22.2)
Personal strength	16.1(5.9)	15.6(4.5)	16.1(4.3)	15.6(6.4)

only in *DSM*-Inattention, with the elementary education group having significantly higher scores compared with those with higher education, but not to those with secondary education.

Traumatic Exposure Effects. As described above, traumatic exposure was categorized as low (L), moderate (M), and high (H) for both male and female participants. Significant effects for traumatic exposure were found for male participants on most of scales: Anxious/Depressed, $F = 10.3$, $df = 2$, $p = 0.001$, $\eta^2 = 0.024$; Withdrawn, $F = 7.8$, $df = 2$, $p = 0.001$, $\eta^2 = 0.03$; Attention Problems, $F = 11.1$, $df = 2$, $p = 0.001$, $\eta^2 = 0.058$; Aggressive Behavior, $F = 11.9$, $df = 2$, $p = 0.001$, $\eta^2 = 0.01$; Rule-Breaking Behavior, $F = 11.6$, $df = 2$, $p = 0.001$, $\eta^2 = 0.06$; Internalizing, $F = 11.5$, $df = 2$, $p = 0.01$, $\eta^2 = 0.03$; Externalizing, $F = 11.1$, $df = 2$, $p = 0.01$, $\eta^2 = 0.03$; and Total Problems, $F = 12.3$, $df = 2$, $p = 0.01$, $\eta^2 = 0.04$ (**Table 4**). According to *post hoc* analysis, male participants with low traumatic exposure during the war reported lower scores than males with moderate or high traumatic exposure during the war ($p < 0.01$). On the other hand, no significant differences for traumatic exposure were found for males on the Intrusive syndrome or the Personal Strengths scale. Traumatic exposures during the war was found to have a significant effect on the mean scores of all *DSM* scales for male participants, with participants with higher exposure having higher scores on all *DSM* scales ($p < 0.01$) compared with those with low and moderate exposure during the war.

For females, traumatic exposure had significant effects on Somatic Complaints, $F = 7.12$, $df = 2$, $p = 0.01$, $\eta^2 = 0.11$ (H > L > M); Attention Problems, $F = 4.51$, $df = 2$, $p = 0.01$, $\eta^2 = 0.07$ (H > M > L); and Internalizing Problems, $F = 4.61$, $df = 2$, $p = 0.01$, $\eta^2 = 0.07$ (M > H > L). For female participants, traumatic exposure was found to have significant effect on Depressive Problems; Somatic Problems; ADHP; and Inattention. Females with higher traumatic exposure had significant differences compared with those with a low level of exposure.

Well-being. Participants were categorized into three groups based on well-being in poor (P), moderate (M), and better (B). Significant effects for well-being were found for male participants on 11 scales: Anxious/Depressed, $F = 6.82$, $df = 2$, $p = 0.001$, $\eta^2 = 0.05$; Withdrawn, $F = 7.82$, $df = 2$, $p = 0.001$, $\eta^2 = 0.06$; Somatic Complaints, $F = 5.00$, $df = 2$, $p = 0.007$, $\eta^2 = 0.04$; Thought Problems, $F = 4.52$, $df = 2$, $p = 0.012$, $\eta^2 = 0.04$; Attention Problems ($F = 12.28$, $df = 2$, $p = 0.000$, $\eta^2 = 0.09$; Aggressive Behavior, $F = 5.14$, $df = 2$, $p = 0.007$, $\eta^2 = 0.04$; Rule-Breaking Behavior, $F = 6.99$ $df = 2$, $p = 0.001$, $\eta^2 = 0.05$; Internalizing, $F = 8.66$, $df = 2$, $p = 0.00$, $\eta^2 = 0.07$; Externalizing, $F = 5.22$, $df = 2$, $p = 0.006$, $\eta^2 = 0.04$; and Total Problems, $F = 7.98$, $df = 2$, $p = 0.00$, $\eta^2 = 0.046$. According to Bonferroni correction tests, the better well-being group had significantly lower scores than those in the two other groups. Male participants with better well-being were also found to have significantly lower scores compared with the other group on *DSM*–Depressive Problems; *DSM*–Avoidant Personality Problems, *DSM*-ADHD; *DSM*-Inattention, and *DSM*–Antisocial Personality Problems ($p < 0.01$).

For females, well-being had significant effects on Anxious/Depressed, $F = 10.50$, $df = 2$, $p = 0.000$, $\eta^2 = 0.15$; Withdrawn, $F = 7.46$, $df = 2$, $p = 0.001$, $\eta^2 = 0.11$; Somatic Complaints, $F = 4.76$, $df = 2$, $p = 0.01$, $\eta^2 = 0.07$; Attention Problems, $F = 10.08$, $df = 2$, $p = 0.00$, $\eta^2 = 0.14$; Aggressive Behavior, $F = 6.99$, $df = 2$, $p = 0.001$, $\eta^2 = 0.10$; Rule-Breaking Behavior, $F = 6.00$, $df = 2$, $p = 0.003$, $\eta^2 = 0.09$; Internalizing Problems, $F = 10.44$, $df = 2$, $p = 0.00$, $\eta^2 = 0.15$; Externalizing Problems, $F = 4.51$, $df = 2$, $p = 0.01$, $\eta^2 = 0.07$; and Total Problems, $F = 9.99$, $df = 2$, $p = 0.00$, $\eta^2 = 0.14$.

TABLE 4 | ANOVA results for Total Problems of ASR according to traumatic experience, SES, education, drinking and smoking.

	Trauma exposure		SES		Education		Drinking		Smoking	
	F	p	F	p	F	p	F	p	F	p
Anxious/Depressed	12.91	0.001	3.71	0.012	4.80	0.009	9.99	0.001	7.03	0.001
Withdrawn	8.40	0.001	1.59	NS	3.66	0.026	4.91	0.008	4.82	0.009
Somatic Complaints	10.57	0.001	0.638	NS	3.54	0.030	1.70	NS	2.62	NS
Thought Problems	2.89	NS	1.53	NS	0.436	NS	10.50	0.001	3.56	0.029
Attention Problems	15.22	0.001	2.29	NS	11.29	0.001	6.94	0.001	4.66	0.010
Aggressive Behavior	13.86	0.001	3.28	0.021	3.46	0.032	7.48	0.001	7.05	0.001
Rule-breaking Behavior	12.35	0.001	7.75	0.001	6.61	0.002	2.65	NS	4.89	0.008
Intrusive	1.39	NS	0.202	NS	1.07	NS	2.49	NS	4.64	0.010
Internalizing problems	15.22	0.001	5.15	0.002	5.59	0.004	7.24	0.001	6.60	0.002
Externalizing problems	13.44	0.001	2.11	NS	3.72	0.025	5.86	0.003	8.37	0.001
Total of emotional and behavioral problems	15.25	0.001	3.53	0.015	5.24	0.006	8.41	0.001	7.61	0.001
DSM Scales										
Depressive Problems	14.21	0.001	5.75	0.001	7.73	0.001	3.08	0.04	5051	0.004
Anxiety Problems	9.70	0.001	2.18	NS	3.28	0.04	2.12	NS	3.07	0.047
Somatic Problems	8.62	0.001	1.56	NS	3.37	0.03	.767	NS	2.83	NS
Avoidant Personality Problems	11.11	0.001	4.67	0.003	4.68	0.01	4.47	0.01	4.48	0.01
Attention Deficit Hyperactivity (ADH) Problems	15.32	0.001	1.98	NS	3.77	0.02	8.60	0.001	5.90	0.003
Inattention subscale	15.66	0.001	4.69	0.003	9.48	0.001	6.76	0.001	5.13	0.006
Hyperactivity-Impulsivity subscale	8.88	0.001	.263	NS	.370	NS	6.76	0.001	4.50	0.012
Antisocial Personality Problems	13.91	0.001	2.57	0.05	7.50	0.001	2.26	NS	5.18	0.006
Obsessive-Compulsive Problems	2.63	NS	.132	NS	.358	NS	7.83	0.001	4.32	0.014

For female participants, well-being was found to have significant effect all *DSM*-scales, except for *DSM*–Obsessive-compulsive disorder ($p > 0.01$).

Effects of Drinking and Smoking. Drinking was categorized into the categories of regular drinker (R), nonregular drinker (NR), and nondrinker (N). Significant effects of drinking category were found for men on Anxious/Depressed, $F = 5.09$, $df = 2$, $p = 0.007$, $\eta^2 = 0.04$ (R > NR > N); Thought Problems, $F = 11{,}79$, $df = 2$, $p = 0.001$, $\eta^2 = 0.088$ (R > NR > N); Aggressive Behavior, $F = 4.78$, $df = 2$, $p = 0.009$, $\eta^2 = 0.038$ (R > NR > N); and Total mean scores, $F = 4.59$, $df = 2$, $p = 0.01$, $\eta^2 = 0.036$ (R > NR > N). Results of Bonferroni correction showed that regular drinkers had significantly higher mean scores than nondrinkers, and also nonregular drinkers had significant differences from nondrinkers. For *DSM* scales, drinking categories had a significant effect for male participants only on *DSM*–Avoidant Personality Problems, *DSM*-ADHP (and the Hyperactivity-Impulsivity subscale), and Obsessive-Compulsive Problems. Results showed that nonregular drinkers had significantly higher scores than nondrinkers on those four scales.

For females, drinking alcohol had a significant effect on Anxious/Depressed, $F = 4.63$, $df = 2$, $p = 0.01$, $\eta^2 = 0.07$ (NR > R > N); Attention Problems, $F = 4.37$, $df = 2$, $p = 0.01$, $\eta^2 = 0.06$ (R > NR > N); and Externalizing Problems, $F = 4.07$, $df = 2$, $p = 0.01$, $\eta^2 = 0.06$ (NR > R > N). Significant differences according to Bonferroni correction were found between NR drinkers compared with nondrinkers and not found with regular drinkers. For female participants, drinking was related to only two *DSM* scales, ADHP and the Inattention subscale, with nonregular drinkers having higher scores that nondrinkers.

Multivariate analyses of variance indicated that smoking category (regular smokers = R, nonregular smokers = NR, and nonsmokers = N) had no significant effects on mean scores of any ASR scales for male participants, but it was significant for female participants on nine scales: Anxious/Depressed, $F = 8.85$, $df = 2$, $p = 0.001$, $\eta^2 = 0.126$; Withdrawn, $F = 7.63$, $df = 2$, $p = 0.001$, $\eta^2 = 0.11$; Somatic Complaints, $F = 4.20$, $df = 2$, $p = 0.01$, $\eta^2 = 0.06$; Thought Problems, $F = 4.52$, $df = 2$, $p = 0.01$, $\eta^2 = 0.069$; Attention Problems ($F = 7.17$, $df = 2$, $p = 0.001$, $\eta^2 = 0.11$; Aggressive Behavior, $F = 12.89$, $df = 2$, $p = 0.001$, $\eta^2 = 0.17$; Rule-Breaking Behavior, $F = 8.25$, $df = 2$, $p = 0.001$, $\eta^2 = 0.118$; Intrusive, $F = 4.73$, $df = 2$, $p = 0.01$, $\eta^2 = 0.07$ (NR vs. N, $p = 0.02$); and Total Problems, $F = 12.69$, $df = 2$, $p = 0.001$, $\eta^2 = 0.17$. Female nonsmokers had lower scores in all ASR scales than the R and NR smoking groups (regular and nonregular group), but Bonferroni correction showed that only the differences between NR smokers and N smokers on Withdrawn, Somatic Complaints, Thought Problems, Attention Problems, and Intrusive ($p < 0.01$) were significant. Female participants from the category of nonregular smokers had significantly higher scores on all *DSM* scales (except Anxiety scale $p > 0.01$) compared with those in the nonsmokers group. Bonferoni correction showed that significant differences were found between nonsmokers with nonregular smokers in *DSM*–Somatic Problems, *DSM*–Avoidant Personality Problems, *DSM*-Inattention, and *DSM*–Antisocial Personality Problems. Between nonsmokers and regular smokers, significant differences were found in *DSM*–Depressive Problems and *DSM*-ADH Problems (and the Hyperactivity-Impulsivity).

A MANOVA was conducted to test the effect of Personal Strengths categories (low [L], moderate [M], higher strengths [H]) on ASR scales. Results showed that Personal Strengths categories had significant effects on almost all scales of ASR except, Somatic Complaints, Attention Problems, and Rule-Breaking Behavior for male participants. Male participants from the group with low personal strengths had significantly higher problem scores compared with participants from higher personal strengths on scales Withdrawn, $F = 3.41$, $df = 2$, $p = 0.001$, $\eta^2 = 0.055$ (L > M > H); Intrusive, $F = 6.76$, $df = 2$, $p = 0.001$, $\eta^2 = 0.054$ (L > M > H); Internalizing, $F = 4.86$, $df = 2$, $p = 0.009$, $\eta^2 = 0.038$ (L > M > H); Externalizing, $F = 3.83$, $df = 2$, $p = 0.002$, $\eta^2 = 0.048$ (L > M > H), and Total Problems, $F = 6.16$, $df = 2$, $p = 0.002$, $\eta^2 = 0.048$ (L > M > H).

For *DSM* scales, personal strengths categories had significant effect on Anxiety Problems, $F = 24.99$, $df = 2$, $p = 0.001$, $\eta^2 = 0.171$ (L > M > H), and Obsessive-Compulsive Problems, $F = 6.13$, $df = 2$, $p = 0.003$, $\eta^2 = 0.048$ (L > M > H).

The same results were found for female participants. For eight empirical scales including the three broad scales, personal strengths had significant effects except on Thought Problems. In DSM scales, only Somatic Complaints, Inattention, and Hyperactivity-Impulsivity subscales were not found to be affected by personal strengths. Bonferoni correction showed that significant differences were between the higher personal strengths group and the lower personal strengths group, but not with those who reported moderate strengths. Results showed that more personal strengths were associated with fewer emotional and behavioral problems in both participants.

MULTIPLE REGRESSION RESULTS

Multiple regression was used to test the prediction of ASR scales by traumatic war experience, smoking, drinking alcohol, and well-being for veterans and the wives of veterans. Using Internalizing Problems, Externalizing Problems, and Total Problems as outcome variables and trauma experience, smoking, drinking alcohol and well-being as predictors, we found that the model significantly predicted Internalizing Problems for male participants ($F(4, 242) = 14.75$, $p < 0.001$, with $R^2 = 0.199$). Traumatic exposure ($B_{\text{trauma}} = -0.32$, $t(242) = -5.31$, $p < 0.001$), drinking ($B_{\text{alcohol}} = -0.17$, $t(242) = -2.93$, $p < 0.001$), and well-being ($B_{\text{well-being}} = -0.23$, $t(242) = -3{,}79$, $p < 0.001$) contributed significantly to the model, but smoking ($B_{\text{smoking}} = -0.04$, $t(242) = -1.79$, $p = 0.41$) did not. The multiple regression model for male participants with all four predictors also produced significant effects for Externalizing ($F(4, 242) = 11.69$, $p < 0.001$, with $R^2 = 0.16$) and Total Problems ($F(4, 361) = 27.75$, $p < 0.001$, with $R^2 = 0.20$). Only smoking did not contribute to the multiple regression model for Total Problems and Externalizing Problems (**Table 5**).

For female participants, we found that the model significantly predicted Internalizing Problems ($F(4, 122) = 8.11$, $p < 0.001$, with $R^2 = 0.216$). Traumatic exposure ($B_{\text{trauma}} = -0.32$, $t(122) = -2.71$, $p = 0.008$) and well-being ($B_{\text{well-being}} = -0.302$, $t(122) = -2.71$, $p = 0.008$) contributed significantly to the model, but

TABLE 5 | Multiple regression analysis summaries for traumatic experience, wellbeing, smoking and drinking predicting Internalizing, Externalizing and Total problems.

	Internalizing Problems	**B**	**SEB**	**β**	**t**	**p**
Male	War experience	-.437	.079	-.322	-5.516	.000
	Wellbeing	-.237	.063	-.222	-3.794	.000
	Do you smoke ?	-.484	.591	-.048	-.820	NS
	Do you drink alchohol ?	-3.687	1.258	-.171	-2.931	.004
Female	War experience	-.324	.120	-.234	-2.714	.008
	Wellbeing	-.302	.111	-.236	-2.718	.008
	Do you smoke ?	-1.739	.884	-.166	-1.968	.NS
	Do you drink alchohol ?	-2.437	1.667	-.124	-1.462	NS
	Externalizing Problems					
Male	War experience	-.311	.061	-.302	-5.074	.000
	Wellbeing	-.151	.048	-.187	-3.126	.002
	Do you smoke ?	-.580	.457	-.076	-1.271	NS
	Do you drink alchohol ?	-2.260	.972	-.139	-2.325	.021
Female	War experience	-.189	.081	-.208	-2.334	.021
	Wellbeing	-.105	.075	-.125	-1.398	NS
	Do you smoke ?	-1.453	.599	-.211	-2.427	.017
	Do you drink alchohol ?	-1.632	1.129	-.127	-1.446	NS
	Total Problems					
Male	War experience	-1.182	.212	-.323	-5.569	.000
	Wellbeing	-.642	.167	-.223	-3.838	.000
	Do you smoke ?	-1.356	1.581	-.050	-.857	NS
	Do you drink alchohol ?	-10.537	3.365	-.182	-3.131	.002
Female	War experience	-.765	.301	-.221	-2.538	.012
	Wellbeing	-.631	.280	-.197	-2.253	.026
	Do you smoke ?	-4.715	2.228	-.180	-2.116	.036
	Do you drink alchohol ?	-7.072	4.203	-.144	-1.683	NS

smoking ($B_{smoking} = -1.73$, $t(122) = -1.96$, $p = 0.51$) and drinking ($B_{alcohol} = -2.47$, $t(122) = -1.47$, $p = 1.47$) did not. The model produced significant effects for Externalizing ($F(4, 122) = 5.73$, $p < 0.001$, with $R^2 = 0.16$) in female participants when smoking ($B_{smoking} = -1.45$, $t(122) = -2.42$, $p = 0.01$) was a significant predictor. The model significantly predicted Total Problems ($F(4, 122) = 7.30$, $p < 0.001$, with $R^2 = 0.21$), and only drinking did not contribute significantly to the model.

We looked for interaction effects between these four variables for Internalizing Problems, Externalizing Problems and Total Problems. There was a significant interaction effect between war exposure and smoking with Internalizing Problems $F(4) = 4.31$, $p = 0.002$, for veterans, but this was not the case for wives of veterans. Veterans with high exposure during the war and were smokers had more Internalizing Problems than those having low exposure and nonsmokers. We observed an interaction effect between well-being and smoking $F(6) = 2.86$, $p = 0.012$, with Internalizing Problems for veterans. Veterans with poor wellbeing and smokers had more Internalizing Problems compare to those that had better wellbeing and nonsmokers. For the wives of veterans, the interaction effect was not significant for all the scales.

DISCUSSION

Our multiple regression analysis indicated that traumatic exposure, drinking, smoking, and well-being combined in one model explained 18.5% of Internalizing Problems, 16.4% of Externalizing Problems, and 20.5% of Total Problems for veterans. For the wives of veterans, the model explained 21.6% of the variance in Internalizing Problems, 16.3% of Externalizing Problems, and 19.9% of Total Problems. Results showed that traumatic exposure, drinking, and well-being were most significant predictors for emotional and behavioral problem in veterans and the wives of veterans.

The overall prevalence rates of elevated Internalizing (10.1% in males vs. 11.1% in females), Externalizing (6.9% vs. 7.1%), and Total Problems (8.1% vs. 11.9%) in our study were not high, given that we used a 16th percentile cutoff point using Kosovar norms. In addition, we did not find any effect of gender on prevalence. Our rates are also comparable to those found in other countries, such as in a UK military sample (27), which found a prevalence of 4.5% for any anxious/depressed syndrome, 1.8% for somatization disorder, 18% for alcohol abuse, and 11% for any depressive syndrome.

Other studies that did not use the same questionnaire or methodology have reported that depression was more common than PTSD in war veterans, and with regard to long-term effects, PTSD seems not to be the most common challenge for those who are unwell (28–32). Instead, alcohol, depression, and anxiety disorders are the most commonly observed difficulties in these studies. There are studies that found a high correlation between PTSD and depression (33, 34), suggesting that there may be a substantive relationship between them.

Our finding of few significant gender differences between veterans and wives of veterans is consistent with another study (35) of the prevalence of mental health problems in veterans' wives seeking help in primary care, which found that they have the same prevalence of problems as their spouses, despite the fact that wives of veterans were less preoccupied with the stigma against

receiving primary care services. A study of Vietnamese refugees resettled in Australia for 11 years (36) suggested that they may show good mental health adaptation. Furthermore, the overall service burden of mental disorders was lower for Vietnamese resettled refugees compared with Australian-born respondents. This could reflect cultural differences in the expression of mental distress (37, 38). It could also mean, however, that there was a lack of specialized facilities and services that would allow the veterans and their wives in our study to explore their trauma, which might cause them to turn inward and keep it inside the family system.

Also, the study found that both veterans and wives of veterans had no differences on seeking professional help for their emotional and behavioral problems. Only one veteran and none of the wives of the veterans had asked for professional help, even though 35 veterans and 35 wives of veterans had "Total Problems" scores in the clinical range. Emotional and behavioral distress related to the negative interpersonal effects of the veterans' and wives of veterans' untreated invisible wounds may influence the access to services as well. A high percentage of soldiers were not accessing health and psychological care or not receiving adequate treatment (39).

Posttraumatic stress disorder has been the focus of many studies, whereas emotional and behavioral problems more generally do not seem to have been widely addressed. However, some studies have been interested in exploring the connection of emotional problems with PTSD (40). High levels of anxiety were found in veterans with PTSD and in those without PTSD. This leads to the interesting conclusion that high levels of anxiety in disabled veterans might result from still unprocessed traumatic exposure and unsuccessful adaptation to their physical disabilities, but this does not explain why high prevalences have been found in those without PTSD (41). Meanwhile, other studies (42) found that the prevalence of psychiatric disorders was similar in disabled non-Gulf veterans and disabled Gulf veterans (19% vs. 24%).

It was reported that although the symptoms of PTSD and panic did not change after the soldiers returned, the symptoms of depression, anxiety, and alcohol use had increased significantly (43). We may speculate that because of lack of services and high level of stigma, many wives and veterans may remain untreated, even though the changes in family dynamics after the return of veterans from the war and the culture of communication within family make it necessary for all of them. "Veterans we worked with in Kosova may have been forced to cultivate a stoic sense of heroism and devotion to the homeland, but many of them are not able to convey what they really feel concerning the reality: the goal of protecting their family and in particular their children. Many veterans' families remained without institutional support. They ensured the survival of their family with great difficulty. Our assumption is that they developed an unspoken language that protected them from social pressure but at the same time helped make a distinction between reality and their interior world" (44).

The importance of social support from family and friends is found to be a significant predictor for traumatic symptoms among people who have missing family member(s) as a result of war and who have experienced ambiguous loss (45). Social support was associated with lower levels of both depression and anxiety in a community sample in Mitrovica (46).

It may be speculative, but it seems that the wives of veterans in our sample have managed to synchronize their symptoms within the family even in the absence of specialized services for them and their spouses. This raises the question of whether primary care services are able to provide professional services for the treatment of war-related mental health problems.

A very interesting fact that was not well documented immediately after the end of the war is that a large part of the people in Kosovo who have had health problems, including mental health problems, did not experience exacerbation of their problems in the absence of therapy during the exodus from Kosovo to neighboring countries. Rather, they reported in clinical settings that they were stabilized and that the symptoms returned as soon as they returned home. Mental health resarchers have been attempting to discover the mechanisms that have caused this phenomenon.

Our study found a low prevalence of regular drinking, but the occasional use of alcohol was more common among veterans and wives of veterans. Use of acohol has been reported to be more common among veterans (47–49), but this was not the case in our sample, or at least it is not greater than in other countries, as we had no previous national data for comparison. Our findings are consistent with some similar studies (50), even if they did not use mostly Muslim participants. However, in interpreting these data, we must consider the culture of Kosovo. Over the past 20 years, alcohol and tobacco use has not been a cutural norm in Kosovar families.

Global social-political changes have created far more roles and responsibilities for women. This is true in Kosovo as well. Inadequate preparation of the society for the complex process of female emancipation may correspond to the phenomenon of alcoholism. What is apparent in our society in recent years is the promotion of alcohol to women, which has diminished the proportion of male drinkers. Alcohol is turning into a trend for young people. However, the use of alcohol, in the veteran as well as in the nonveteran population, is not high in our country. Excessive use of alcohol is associated with feelings of insecurity, loneliness, decreased self-esteem, stress, frustrations, discomfort in couple relationships, divided life (partner or part of the family in migration), and health problems (51). An interesting argument might be that the use of alcohol could be a way of dealing with adjustment disorder (52).

The alcohol consumption among military spouses or partners is related to similar factors as among women in the general population (53). Although the percentage of alcohol use has been very low in women, its regular use has been found to be associated with more emotional problems such as anxiety, attention problems, and aggressive behavior. The fact that among the wives of veterans alcohol consumption was associated with behavioral problems is no cause for surprise. While smoking had no significant effects on scales of ASR for veterans, it had a significant effect on veterans' wives scores in the Internalizing, Externalizing, and Total Problems scales and also in all scales of ASR compared with those in the nonsmoking group. There are studies that support the relationship between alcohol use and smoking and mental health problems (54, 55).

Our study produced interesting results about the influence of sociodemographic variables, such as education, income, and

place of living, on emotional and behavioral problems. Wives of veterans living in rural areas showed higher scores on almost all scales of ASR compared with those living in urban areas and to veterans from both urban and rural areas.

Veterans from the low education group had the highest scores compared with other groups. For wives of veterans, there were no differences between groups in all three broad scales of ASR according to education level. Low income was found to be a significant predictor for emotional and behavior problems. Such results are found in other countries too.

All subscales of the ASR were found to have significant mean differences according to traumatic exposure except Intrusive scale for male participants. In all these eight scales, the highest scores came from the higher-exposure group of veterans. Female participants showed significant differences between exposure groups only for Somatic Complaints. The moderate group contains higher scores than the two other groups.

Complex mental health symptoms experienced by people who are faced with traumatic events, such as war, migration, and other types of traumas, place mental health scientists in a position where they must attempt to elucidate the structure of the relationship between symptoms and events. It is not enough to build programs or services that are shaped by explanations that are truncated and not comprehensive or scientific. There are suggestions for providing components for building a verifiable conceptual framework that allows for the understanding of individuals' mental health, resilience, and adjustment to migration challenges (56), which may be applied to the war experience challenges too.

LIMITATIONS

The findings of this study should be viewed in the context of some limitations. First, we recruited participants from the IOM list of 24,577 war veterans provided by the Kosovar National Association of War Veterans, which was compiled immediately after the war. We used this list because it appeared to be the most reliable source for actual KLA veterans, as opposed to also including people who played a support role in the war but were not fighters, such as supply and medical personnel. The noncombatants who subsequently registered as war veterans have, in fact, become a troubling political issue because they are so numerous and because there is little consensus about whether they should receive the same kinds of benefits as combatants receive. In any event, had we used one of the other longer lists, we might have ended up with a somewhat different sample, including men who were noncombatants, which would have detracted from our study. Second, self-report questionnaires were filled out by the veterans and veterans' wives, but our participants were not dyads (couples) because of the fact that they were initially recruited to be informants about their children. Third, our participants may not have accurately reported their trauma level. Fourth, the number of drinkers among the participants in each of the groups was very small. We found several interesting interactions, which might be fruitful to explore in observational studies. Finally, because these data were cross-sectional, any proposed causal pathways must be considered with care.

CONCLUSION

Parsing out the relationship between the level of exposure to traumatic events and emotional problems and behavior in veterans and their wives would help global mental health researchers address the contextual and experiential dimensions of this relationship. Risk of indirect traumatization including transgenerational transmission underlines the importance of such research. When provided with information on the moderated effects of demographic variables, mental health professionals will be able to identify measurable factors that determine resilience or vulnerability and to better develop and evaluate targeted prevention, treatment, and recovery strategies for mental health problems. Significant training needs to exist among primary care services to improve knowledge of and expertise on veterans' mental health issues and those of their family members.

DATA AVAILABILITY

The datasets generated for this study are available on request to the corresponding author.

ETHICS STATEMENT

The study was performed in accordance with the Declaration of Helsinki and was approved by the Ethical Review Committee of the Medical University of Pristina. Written informed consent has been obtained from all study participants.

AUTHOR CONTRIBUTIONS

MIS wrote a first draft of the manuscript. LR, MES and SU reviewed and commented the version. MES and LR revised the commented version, which was reviewed again by all coauthors.

REFERENCES

1. Murthy RS, Lakshminarayana R. Mental health consequences of war: a brief review of research findings. *World Psychiatry* (2006) 5(1):25–30.
2. Shahini M, Shala M. Post-traumatic stress disorder in Kosovo veterans. *SAGE Open* (2016) 6(1):1–7. doi: 10.1177/2158244016633737
3. Eytan A, Munyandamutsa N, Nkubamugisha PM, Gex-Fabry M. Long-term mental health outcome in postconflict settings: similarities and differences between Kosovo and Rwanda. *Int J Soc Psychiatry* (2014) 61:363–72. doi: 10.1177/0020764014547062
4. Priebe S, Bogic M, Ajdukovic D, Franciskovic T, Galeazzi GM, Kucukalic A, et al. Mental disorders following war in the Balkans: a study in 5 countries. *Arch Gen Psychiatry* (2010) 67:518–28. doi: 10.1001/archgenpsychiatry.2010.37
5. Institute of Medicine. *Returning Home from Iraq and Afghanistan: assessment of Readjustment Needs of Veterans, Service Members, and Their Families*. Washington, DC: The National Academies Press (2013). doi: 10.17226/13499

6. Kashdan TB, Morina N, Priebe S. Post-traumatic stress disorder, social anxiety disorder, and depression in survivors of the Kosovo war: experiential avoidance as a contributor to distress and quality of life. *J Anxiety Disord* (2009) 23:185–96. doi: 10.1016/j.janxdis.2008.06.006
7. Solomon Z, Shimrit D-A, Gadi Z, Danny H. Marital adjustment, parental functioning, and emotional sharing in war veterans. *J Fam Issues* (2011) 32(1):127–47. doi: 10.1177/0192513X10379203
8. Calhoun PS, Beckham JC, Bosworth HB. Caregiver burden and psychological distress in partners of veterans with chronic posttraumatic stress disorder. *J Trauma Stress* (2002) 15(3):205–12. doi: 10.1023/A:1015251210928
9. Shalev AY. What is posttraumatic stress disorder? *J Clin Psychiatry* (2001) 62 Suppl 17:4–10.
10. Dennis PA, Dennis NM, Van Voorhees EE, Calhoun PS, Dennis MF, Beckham JC. Moral transgression during the Vietnam war: a path analysis of the psychological impact of veterans' involvement in wartime atrocities. *Anxiety Stress Coping* (2017) 30(2):188–201. doi: 10.1080/10615806.2016.1230669
11. Wilk JE, Quartana PJ, Clarke-Walper K, Kok B. Aggression in US soldier's post-deployment: associations with combat exposure and PTSD and the moderating role of trait anger. *Aggress Behav* (2015) 41(6):556–65. doi: 10.1002/ab.21595
12. Norman SB, Schmied E, Larson GE. Physical aggression among post-9/11 veterans. *J Mil Behav Health* (2015) 3(1):47–54. doi: 10.1080/21635781.2014.995250
13. McCubbin JA, Zinzow HM, Hibdon MA, Nathan AW, Morrison AV, Hayden GW, et al. Subclinical posttraumatic stress disorder symptoms: relationships with blood pressure, hostility, and sleep. *Cardiovasc Psychiatry Neurol* (2016) 9. doi: 10.1155/2016/4720941
14. Frančišković T, Stevanović A, Jelušić I, Roganović B, Klarić M, Grković J. Secondary traumatization of wives of war veterans with posttraumatic stress disorder. *Croat Med J* (2007) 48(2):177–84.
15. Klaric M, Franciskovic T, Stevanovic A, Petrov B, Jonovska S, Nemcic Moro I. Marital quality and relationship satisfaction in war veterans and their wives in Bosnia and Herzegovina. *Eur J Psychotraumatol* (2011) 2:8077. doi: 10.3402/ejpt.v2i0.8077
16. Klaric M, Franciskovic T, Pernar M, Nembic Moro I, Milicevic R, Cerni OE, et al. Caregiver burden and burnout in partners of war veterans with post-traumatic stress disorder. *Coll Antropol* (2010) 34 Suppl 1:15–21.
17. Franciskovic T, Stevanovic A, Jelusic I, Roganovic B, Klaric M, Grkovic J. Secondary traumatization of wives of war veterans with posttraumatic stress disorder. *Croat Med J* (2007) 48(2):177–84.
18. Dekel R, Solomon Z, Bleich A. Emotional distress and marital adjustment of caregivers: contribution of level of impairment and appraised burden. *Anxiety Stress Coping Int J* (2005) 18(1):71–82. doi: 10.1080/10615800412336427
19. Evans L, McHugh T, Hopwood M, Watt C. Chronic posttraumatic stress disorder and family functioning of Vietnam veterans and their partners. *Aust N Z J Psychiatry* (2003) 37:765–72. doi: 10.1111/j.1440-1614.2003.01267.x
20. Lev-Wiesel R, Amir M. Secondary traumatic stress, psychological distress, sharing of traumatic reminisces, and marital quality among spouses of holocaust child survivors. *J Marital Fam Ther* (2001) 27(4):433–44. doi: 10.1111/j.1752-0606.2001.tb00338.x
21. Di Lellio A, Schwandner-Sievers S. The Legendary Commander: the construction of an Albanian master-narrative in post-war Kosovo. *Nations Natl* (2006) 12(3):513–29. doi: 10.1111/j.1469-8129.2006.00252.x
22. De FC, Blanchet A, Hopkins W, Bui E, Ait-Aoudia M, Jehel L. Validation of a French adaptation of the Harvard Trauma Questionnaire among torture survivors from sub-Saharan African countries. *Eur J Psychotraumatol* (2012) 3. doi: 10.3402/ejpt.v3i0.19225
23. Mollica RF, Caspi-Yavin Y, Bollini P, Truong T, Tor S, Lavelle J. The Harvard Trauma Questionnaire. Validating a cross-cultural instrument for measuring torture, trauma, and posttraumatic stress disorder in Indochinese refugees. *J Nerv Ment Dis* (1992) 180(2):111–6. doi: 10.1097/00005053-199202000-00008
24. Achenbach TM, Rescorla LA. *Manual for the ASEBA Adult Forms & Profiles*. VT, USA: Research Center for Children, Youth, & Families, University of Vermont, Burlington (2003).
25. Ivanova MY, Achenbach TM, Rescorla LA, Tumer LV, Ahmeti-Pronaj A, Au A, et al. Syndromes of self-reported psychopathology for ages 18–59 in 29 societies. *J Psychopathol Behav Assess* (2015) 37(2):171–83. doi: 10.1007/s10862-014-9448-8
26. Fairchild AJ, Mackinnon DP, Taborga MP, Taylor AB. R2 effect-size measures for mediation analysis. *Behav Res Methods* (2009) 41(2):486–98. doi: 10.3758/BRM.41.2.486
27. Iversen AC, van SL, Hughes JH, Browne T, Hull L, Hall J, et al. The prevalence of common mental disorders and PTSD in the UK military: using data from a clinical interview-based study. *BMC Psychiatry* (2009) 9:68. doi: 10.1186/1471-244X-9-68
28. Murphy D, Iversen A, Greenberg N. The mental health of veterans. *J R Army Med Corps* (2008) 154(2):136–9. doi: 10.1136/jramc-154-02-13
29. Toomey R, Kang HK, Karlinsky J, Baker DG, Vasterling JJ, Alpern R, et al. Mental health of US Gulf War veterans 10 years after the war. *Br J Psychiatry* (2007) May190:385–93. doi: 10.1192/bjp.bp.105.019539
30. Blanchard MS, Eisen SA, Alpern R, Karlinsky J, Toomey R, Reda DJ, et al. Chronic multisymptom illness complex in Gulf War I veterans 10 years later. *Am J Epidemiol* (2006) 163(1):66–75. doi: 10.1093/aje/kwj008
31. Ikin JF, McKenzie DP, Gwini SM, Kelsall HL, Creamer M, McFarlane AC, et al. Major depression and depressive symptoms in Australian Gulf War veterans 20 years after the Gulf War. *J Affect Disord* (2016) 189:77–84. doi: 10.1016/j.jad.2015.09.016
32. Ikin JF, Creamer MC, Sim MR, McKenzie DP. Comorbidity of PTSD and depression in Korean War veterans: prevalence, predictors, and impairment. *J Affect Disord* (2010) 125(1–3):279–86. doi: 10.1016/j.jad.2009.12.005
33. Lapierre CB, Schwegler AF, Labauve BJ. Posttraumatic stress and depression symptoms in soldiers returning from combat operations in Iraq and Afghanistan. *J Trauma Stress* (2007) 20(6):933–43. doi: 10.1002/jts.20278
34. Angkaw AC, Ross BS, Pittman JO, Kelada AM, Valencerina MA, Baker DG. Post-traumatic stress disorder, depression, and aggression in OEF/OIF veterans. *Mil Med* (2013) 178(10):1044–50. doi: 10.7205/MILMED-D-13-00061
35. Eaton KM, Hoge CW, Messer SC, Whitt AA, Cabrera OA, McGurk D, et al. Prevalence of mental health problems, treatment need, and barriers to care among primary care-seeking spouses of military service members involved in Iraq and Afghanistan deployments. *Mil Med* (2008) 173(11):1051–6. doi: 10.7205/MILMED.173.11.1051
36. Steel Z, Silove D, Chey T, Bauman A, Phan T, Phan T. Mental disorders, disability and health service use amongst Vietnamese refugees and the host Australian population. *Acta Psychiatr Scand* (2005) 111(4):300–9. doi: 10.1111/j.1600-0447.2004.00458.x
37. Steel Z, Silove D, Giao NM, Phan TT, Chey T, Whelan A, et al. International and indigenous diagnoses of mental disorder among Vietnamese living in Vietnam and Australia. *Br J Psychiatry* (2009) 194(4):326–33. doi: 10.1192/bjp.bp.108.050906
38. Tanielian T, Woldetsadik MA, Jaycox LH, Batka C, Moen S, Farmer C, et al. Barriers to engaging service members in mental health care within the U.S. military health system. *Psychiatr Serv* (2016) 67(7):718–27. doi: 10.1176/appi.ps.201500237
39. Hoge CW, Grossman SH, Auchterlonie JL, Riviere LA, Milliken CS, Wilk JE. PTSD treatment for soldiers after combat deployment: low utilization of mental health care and reasons for dropout. *Psychiatr Serv* (2014) 65(8):997–1004. doi: 10.1176/appi.ps.201300307
40. Jevtovic S, Gregurek R, Kalenic B, Brajkovic L, Bras M, Loncar M, et al. Correlation of sleep disturbances, anxiety and depression in Croatian war veterans with posttraumatic stress disorder. *Coll Antropol* (2011) 35 Suppl 1:175–81.
41. Gregurek R, Pavic L, Vuger-Kovacic H, Potrebica S, Bitar Z, Kovacic D, et al. Increase of frequency of post-traumatic stress disorder in disabled war veterans during prolonged stay in a rehabilitation hospital. *Croat Med J* (2001) 42(2):161–4.
42. Ismail K, Kent K, Brugha T, Hotopf M, Hull L, Seed P, et al. The mental health of UK Gulf War veterans: phase 2 of a two phase cohort study. *BMJ* (2002) 325(7364):576. doi: 10.1136/bmj.325.7364.576
43. Duma SJ, Reger MA, Canning SS, McNeil JD, Gahm GA. Longitudinal mental health screening results among postdeployed U.S. soldiers preparing to deploy again. *J Trauma Stress* (2010) 23(1):52–8. doi: 10.1002/jts.20484
44. Shahini M, Ahmetaj A, Charles L Family therapy in postwar Kosova: reforming cultural values in new family dynamics. 2016, AFTA Spingerbriefs

in Family Therapy https://doi.org/10.1007/978-3-319-39271-4_6. doi: 10.1007/978-3-319-39271-4_6
45. Arenliu A, Shala-Kastrati F, Berisha A,V, Landsman M. Posttraumatic growth among family members with missing persons from war in Kosovo: association with social support and community involvement. *Omega (Westport)* (2017) 1–4. doi: 10.1177/0030222817725679
46. Nakayama R, Koyanagi A, Stickley A, Kondo T, Gilmour S, Arenliu A, et al. Social networks and mental health in post-conflict Mitrovica, Kosova. *BMC Public Health* (2014) 14:1169. doi: 10.1186/1471-2458-14-1169
47. Fear NT, Iversen A, Meltzer H, Workman L, Hull L, Greenberg N, et al. Patterns of drinking in the UK Armed Forces. *Addiction* (2007) 102(11):1749–59. doi: 10.1111/j.1360-0443.2007.01978.x
48. Fear NT, Wessely S. Combat exposure increases risk of alcohol misuse in military personnel following deployment. *Evid Based Ment Health* (2009) 12(2):60. doi: 10.1136/ebmh.12.2.60
49. Fear NT, Jones M, Murphy D, Hull L, Iversen AC, Coker B, et al. What are the consequences of deployment to Iraq and Afghanistan on the mental health of the UK armed forces? A cohort study. *Lancet* (2010) 375(9728):1783–97. doi: 10.1016/S0140-6736(10)60672-1
50. Head M, Goodwin L, Debell F, Greenberg N, Wessely S, Fear NT. Post-traumatic stress disorder and alcohol misuse: comorbidity in UK military personnel. *Soc Psychiatry Psychiatr Epidemiol* (2016) 51(8):1171–80. doi: 10.1007/s00127-016-1177-8
51. Gribble R, Thandi GK, Goodwin L, Fear NT. Hazardous alcohol consumption among spouses or partners of military service personnel: a systematic review of the literature. *J R Army Med Corps* (2018) 164(5):380–8. doi: 10.1136/jramc-2017-000845
52. Goodwin L, Jones M, Rona RJ, Sundin J, Wessely S, Fear NT. Prevalence of delayed-onset posttraumatic stress disorder in military personnel: is there evidence for this disorder?: results of a prospective UK cohort study. *J Nerv Ment Dis* (2012) 200(5):429–37. doi: 10.1097/NMD.0b013e31825322fe
53. Jones E, Fear NT. Alcohol use and misuse within the military: a review. *Int Rev Psychiatry* (2011) 23(2):166–72. doi: 10.3109/09540261.2010.550868
54. Iversen A, Waterdrinker A, Fear N, Greenberg N, Barker C, Hotopf M, et al. Factors associated with heavy alcohol consumption in the U.K. armed forces: data from a health survey of Gulf, Bosnia, and era veterans. *Mil Med* (2007) 172(9):956–61. doi: 10.7205/MILMED.172.9.956
55. Jenkins SC, Stevelink SA, Fear NT. Factors associated with poor self-reported health within the UK military and comparisons with the general population: a cohort study. *JRSM Open* (2017) 8(5):1–7. doi: 10.1177/2054270417692729
56. Weine SM, Langenecker S, Arenliu A. Global mental health and the National Institute of Mental Health Research Domain Criteria. *Int J Soc Psychiatry* (2018) 64(5):436–42. doi: 10.1177/0020764018778704

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Implementing a Need-Adapted Stepped-Care Model for Mental Health of Refugees: Preliminary Data of the State-Funded Project "RefuKey"

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Introduction: Refugees have been shown to be a rather vulnerable population with increased psychiatric morbidity and lack of access to adequate mental health care. By expanding regional psychosocial and psychiatric-psychotherapeutic care structures and adapting psychiatric routine care to refugees' needs, the state-funded project "refuKey" based in Lower Saxony, Germany, pursues to ease access to mental health care and increase service quality for refugees. A stepped-care treatment model along with intercultural opening of mental health care services is proposed.

Methods: The project is subject to a four-part evaluation study. The first part investigates the state of psychiatric routine care for refugees in Lower Saxony by requesting data from all psychiatric clinics, participating and non-participating ones, regarding the numbers of refugee patients, their diagnoses, settings of treatment, etc. The second part explores experiences and work satisfaction of mental health care professionals treating refugees in refuKey cooperation clinics. The third part consists of interviews and focus group discussions with experts regarding challenges in mental health care of refugees and expectations for improvement through refuKey. The fourth part compares mental health parameters like depression, anxiety, traumatization, somatization, psychoticism, quality of life, as well as "pathways-to-care" of refuKey-treated refugees before and after treatment and, in a follow-up, to a non-refuKey-treated refugee control group.

Results: RefuKey-treated refugees reported many mental health problems and estimated their mental health burden as high. The symptoms decreased significantly over the course of treatment. Mental health in the refuKey sample was strongly linked to post-migration stressors.

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Discussion: The state of mental health care for refugees is discussed. Implications for the improvement and the need for adaptation of routine mental health care services are drawn.

Keywords: mental health, post-migration living difficulties, refugees, stepped-care model, intercultural opening

INTRODUCTION

Recent years have marked a stark increase in refugees[1] leaving their home countries due to conflicts, poverty, and persecution. The numbers for forced displacement are highest on record with 28.5 million globally displaced people in 2018 (1). In 2015, roughly 890,000 asylum seekers arrived in Germany, of whom 441,900 officially applied for asylum, making Germany the most popular host country in the EU (2).

Several studies have shown an elevated risk for mental disorders in samples of refugees (3–5). A recent meta-analysis on refugee mental health reported increased prevalence rates for posttraumatic stress disorder (PTSD; 4.4–86%), depression (2.3–80%), and anxiety disorders (20.3–88%) (3). Compared to studies with small sample sizes, studies of higher methodological quality with large sample sizes generally report lower prevalence rates of mental disorders in refugees (3, 4). Even though prevalence rates should be interpreted with caution due to the heterogeneity of study designs and sample characteristics, there is evidence that refugees constitute a particularly vulnerable population with about 10 times increased risk of PTSD in comparison to the host countries' native population [e.g., Refs. (3, 4)]. Furthermore, there is a growing body of evidence that the incidence of psychosis in migrant populations is elevated compared to non-migrant population (6). Recent studies further report that risk of developing psychotic disorders is higher for refugees than non-refugee migrants (7, 8).

In this context, research highlights the importance of post migratory factors showing that various stressors related to socioeconomic difficulties in host countries, social and interpersonal challenges, lengthy asylum-seeking process, and complicated immigration policies facilitate long-term mental health problems in refugees after resettlement (3, 9–11). For instance, Knipscheer et al. (12) reported negative effects of the asylum-seeking process on mental health, as they found an association between lack of refugee status and symptom severity of PTSD and depression. Generally, stressful life events that frequently moderate the onset of psychotic disorders might be particularly common among refugees (e.g., migration itself, physical and sexual abuse, perceived discrimination) (9, 13, 14).

Despite the fact that refugees, due to various risk factors, represent a population vulnerable to mental disorders, several structural and social barriers in host countries are preventing this population from receiving adequate mental health care (15). For one, refugees report difficulties in dealing with a foreign, complex health care system (16). Language deficiency represents one of the major access barriers to and a potential source of miscommunication within the health care system, leading to a risk of inadequate clinical assessment (15, 17). Further, the cultural background of an individual might affect symptom patterns, perception of mental disorders, as well as beliefs about mental health care and acceptability of certain treatments (15, 18). Therefore, lack of intercultural competence of mental health care providers, along with the inability to understand the effect of culture on different aspects of mental disorders, present an impediment for adequate health care (19, 20).

In many countries, including Germany, asylum seekers' access to health care is limited directly by law. For the first 15 months after arrival in Germany, asylum seekers' access to health care only covers measures deemed essential for life preservation [e.g., emergency medical care, treatment for acute and painful conditions, care during pregnancy and childbirth, vaccinations; AsylBLG[2] sections 4 and 6 (21)]. During this period, regular treatment of mental disorders is not covered. Since 2016, asylum applications are steadily decreasing in Germany (2). However, the current situation still is a great challenge on how to address the needs of refugees for mental health care adequately. In that regard, stepped-care models may provide a promising framework, as they have proven their effectiveness for various disorders in different settings and regions of the world and are recommended for routine care practices (22). Within stepped care, treatment is distributed to several steps with different treatment thresholds, ranging from lower to higher intensities. This enables an optimized provision of mental health care, which takes into account limited clinical and therapeutic resources (22).

The refuKey project aims to enhance regional psychosocial, psychiatric, and psychotherapeutic care services for refugees by means of stepped-care approaches optimizing regular mental health care in Lower Saxony, Germany (23). Within the scope of the refuKey project, psychosocial counseling centers (PCCs) have been founded close to refugee reception centres and joined forces with a psychiatric clinic nearby as cooperating competence centres. The project provides the clinics and PCCs with professional interpreters and academic refuKey staff to support treatment teams in coping with bureaucratic procedures as well as to help reduce diagnostic and therapeutic insecurities in dealing with refugee mental health and to ensure optimal regional networking. The refuKey staff is composed of clinical psychologists, psychiatrists, psychotherapists, and social workers who are trained and experienced in transcultural competence. By integrating

[1] In this article, we prefer to use the term "refugees" as an umbrella term, which denotes all asylum seekers regardless of the recognition of their claim.

[2] Asylum Seekers Benefits Act.

low- and high-threshold programs, the refuKey project works to provide need-adapted mental health care for refugees and to promote intercultural opening of the mental health care system. The project started in May 2017 and is a cooperation between the Network for Traumatized Refugees in Lower Saxony (NTFN e.V.) and the German Association for Psychiatry, Psychotherapy, and Psychosomatics (DGPPN). The project is funded by the Ministry of Social Affairs, Health and Equality of Lower Saxony. RefuKey is meant to serve as a model/pilot project for further action. This paper aims to present the first naturalistic data of the refuKey project evaluation study.

Objectives

The study's objective is to evaluate the efficacy of the project by answering the following three questions: First, do refugees have better access to mental health care as a result of the project? Better access is defined by an increase in the number of refugee patients treated in participating psychiatric clinics and PCCs as well as an increase in referrals between these institutions. Second, is there a decrease in re-hospitalization rates of refugees in participating psychiatric clinics, as well as a significant improvement of the mental state of refuKey-treated refugees as compared to non-refuKey-treated refugees? Third, is there a decrease of work-related strain in mental health care professionals working with refugees over the course of the project in participating psychiatric clinics?

METHODS

Study Design

The study uses a complex naturalistic mixed-methods multi-centric design examining different aspects of treatment in four study parts (**Figure 1**). The first part investigates the state of psychiatric routine care for refugees in Lower Saxony at the start and end of the project. For this, secondary data from all psychiatric clinics in the state, both participating and not participating in refuKey, were requested *via* an online survey. The aim of the secondary data collection is to measure whether our project can facilitate access to standard psychiatric routine care comparing patient numbers, re-hospitalization rates, and referrals to follow-up treatment between refuKey participating and non-participating clinics. The second part explores the experiences and work-related strain of mental health care professionals involved in mental health care provision for refugees in psychiatric clinics participating in refuKey as well as in a non-participating clinic as a control group, is collected using standardized questionnaires provided at the start and end of the project. Challenges in providing mental health care to refugees and expectations for improvement through refuKey are assessed throughout the project in the third part with structured interviews and focus group discussions. The fourth and main part of the study measures mental health as well as "pathways-to-care" of refuKey-treated refugees before and after treatment using a standardized questionnaire to examine if refuKey treatment is effective. RefuKey treatment outcomes will be compared to a non-refuKey-treated refugee control group to check if refuKey treatment is superior to treatment as usual.

The study was approved by the Ethics Committees of Hannover Medical School and the Medical Association of Lower Saxony.

Sample

For the first study part, chief physicians of psychiatric clinics were recruited *via* a presentation of the project to the Committee[3] of chief physicians of all psychiatric clinics in Lower Saxony and by sending a link to the survey through the committee's mailing list. Seven clinics participated in the survey.

The sample of the ongoing second study part includes professionals who treat and care for refugee patients in psychiatric clinics participating in refuKey. We ask 10 representatives of a

[3] Psychiatry conference Lower Saxony (Niedersächsische Psychiatrie Konferenz).

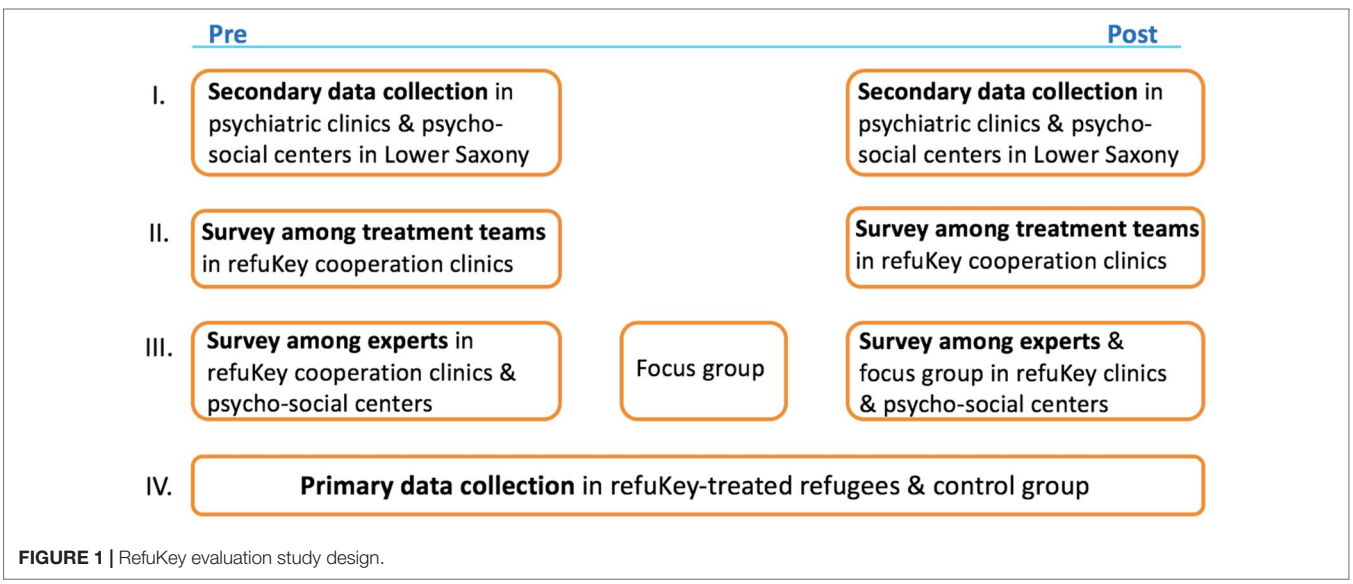

FIGURE 1 | RefuKey evaluation study design.

multi-professional team *per* psychiatric setting covering the professions of psychiatrists; psychologists; occupational, art, music, and body therapists; nurses; and social workers where applicable according to specific settings. A sample of 100 psychiatric clinic employees is planned. All participants are informed about the study by an information sheet and sign the form of consent prior to participation.

In this study part, an expert is defined as someone who works in refugee mental health provision at different levels of delivery within institutions participating in refuKey. The expert sample consists of members of the project steering group, directors of psycho-social centers, clinic directors, clinic personnel, as well as refuKey personnel and counts 14 participants at the start of the project.

Refugees receiving treatment and counseling in refuKey PCCs or psychiatric clinics are included in the sample of the fourth study part. Data collection for this part of the study will continue until the end of the project. Data are collected in four psychiatric clinics (Asklepios Clinic for Psychiatry and Psychotherapy in Goettingen, AWO Psychiatric Centre in Koenigsluther, Karl-Jaspers-Clinic in Oldenburg, Niels-Stensen-Clinics in Bramsche) and five PCCs (Brunswick, Goettingen, Lueneburg, Oldenburg, Osnabrueck) in Lower Saxony, Germany. Written informed consent is obtained from all participants. All participants are informed about the study by an information sheet and sign the form of consent prior to participation.

Refugees who make use of refuKey open counseling hours irregularly as well as refugees who are not capable of filling out a questionnaire due to insufficient educational background or acute mental health conditions (e.g., acute suicidality or acute psychotic symptoms) are excluded from the sample. So far, 171 refugees have participated in the study, while 283 refugees were excluded due to referral to a different mental health institution, transfer to another city, deportation, refusal to participate in the study, or meeting the exclusion criteria. A total of 133 pre-treatment as well as 28 post-treatment measurements including 28 paired pre- and post-treatment measurements were included in the analyses, while 29 participants were excluded due to missing data (**Figure 2**). Additional information about current symptoms and complaints as well as their severity was available for only 100 of the participants. Data from the control group will be collected as a double-blind study from all refugee patients treated in a psychiatric clinic in Lower Saxony, which does not participate in refuKey at a future point in time.

Measures

Secondary Data Collection

In the first part of the study, secondary data were collected in psychiatric clinics in Lower Saxony *via* a short online survey consisting of 11 questions. The survey asked for numbers of refugee patients treated, their diagnoses and reasons for admission, type of diagnostic assessment, settings, types and length of treatment, use of interpreters, re-hospitalization rate, referral to follow-up treatment in the first quarter of 2018, and for a rating of suggested impediments to the quality of mental health care for refugees.

Survey Among Treatment Teams

In the second part, we applied the Maslach Burnout Inventory—Human Services Survey (MBI) by Maslach and Jackson (24) to measure the work-related strain in the care for refugee patients. The MBI consists of 21 items rated from 1 to 6 (1 = "never" to 6 = "very often"). Internal consistency was reported to lie between Cronbach's α of .71 and .82 (24).

We used the Current Mood Scale (Aktuelle Stimmungsskala, ASTS) by Dalbert (25) to assess personnel's mood while

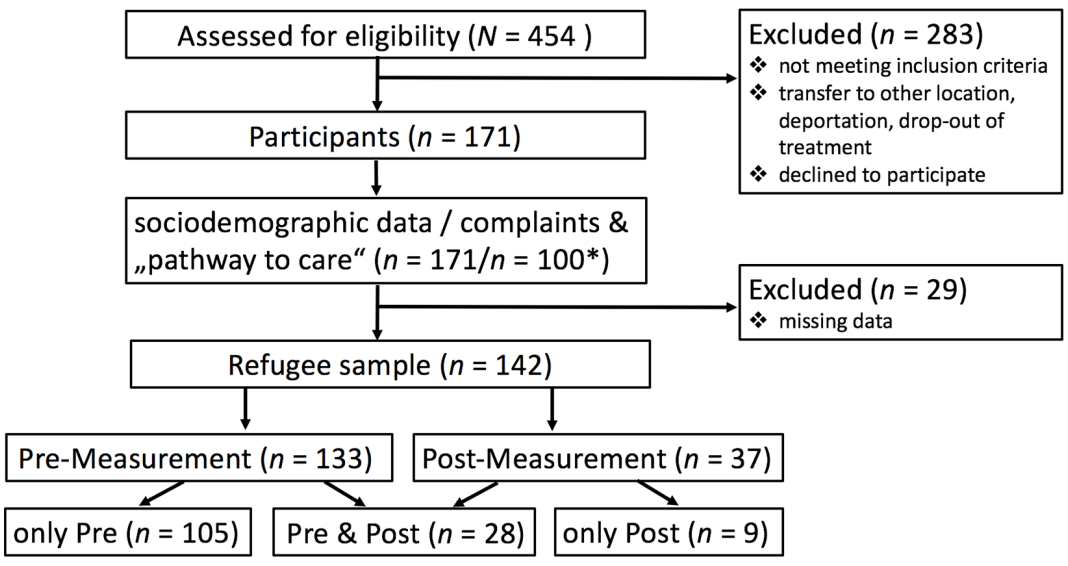

FIGURE 2 | Refugee sample. *Due to the naturalistic design of the study and the hardships of data collection along the treatment process, the information about complaints and "pathway to care" is missing for 71 participants.

providing mental health care for refugee and non-refugee patients. The ASTS assesses mood in the categories of sadness, hopelessness, tiredness, anger and positive mood with 19 items on a seven-point Likert scale (1 = "extremely" to 7 = "not at all"). The internal consistency is relatively high (Cronbach's α = .83–.94) (25).

Additionally, sociodemographic data, such as age, sex, migration background, and occupation, as well as workplace-related data, such as work setting, income, and whether or not refugees are treated, are collected.

Survey Among Experts

The experts in the third part of the study were interviewed using a structured questionnaire composed of open questions asking about challenges in the mental health care of refugees. In particular, they were asked about financial constraints, networks and cooperation, difficulties for treatment teams, and barriers to mental health care access faced by refugees. Expectations about improvements through refuKey were asked about as well.

Primary Data Collection

A standardized questionnaire consisting of validated scales widely used in international refugee research is applied in the fourth part of the study (Health TA Center: Assessment for Trauma and Mental Health in Refugees, www.refugeehealthta.org). The questionnaire is available in eight languages: German, English, Arabic, Farsi, Dari, French, Serbian, and Russian. It contains, if available, validated adaptations of the scales in those languages and, if not, translations into them and back. The questionnaire was tested in a test run.

Mental Health

We assessed the following mental health parameters: general mental well-being with the Warwick Edinburgh Mental Well-Being Scale by Tennant et al. (26), depression and anxiety with the Hopkins Symptom Checklist 25 by Derogatis et al. (27), somatization and psychoticism with the Symptom Checklist 90 by Derogatis (28), traumatization with the Harvard Trauma Questionnaire by Mollica et al. (29), as well as quality of life with the WHO Quality of Life Questionnaire (30).

The Warwick Edinburgh Mental Well-Being Scale (WEMWBS) measures general mental well-being as a sum score of 14 positively worded items rated on a five-point Likert scale. The questionnaire shows high internal consistency (α = .91) (26).

The Hopkins Symptom Checklist 25 (HSCL-25) is a well-known and widely used clinical screening instrument. It assesses anxiety experienced in the last 7 days by means of 10 items and depression by means of 15 items with four categories of response (1 = "not at all," 2 = "a little," 3 = "quite a bit," 4 = "extremely"). Internal consistency is high (α = .89) (31). The scale has been adapted to many languages and has been used with a number of refugee groups.

The Symptom Checklist 90-R (SCL-90) evaluates a broad range of psychological symptoms experienced in the last 7 days rated on a five-point Likert scale. Internal consistency was shown to be at α = .77 for the somatization subscale and α = .73 for the psychoticism subscale (32).

The Harvard Trauma Questionnaire (HTQ) is a cross-cultural screening instrument assessing trauma exposure and its subjective description as well as head trauma and trauma-related symptoms in refugees. In this study, only the last part composed of 30 items regarding posttraumatic symptoms experienced in the last week was administered. The first 16 items reflect the DSM-IV criteria for PTBS and the other 14 items describe trauma-related symptoms. Items are rated on a 1 ("not at all") to 4 ("extremely") Likert scale. Internal consistency of the scale is high (α = .96) (29).

The WHO Quality of Life Questionnaire (WHOQoL)—BREF is a short version of the WHO Quality of Life scale, which is cross-culturally applicable. It has 26 items and a response scale ranging from 1 to 5. The questionnaire assesses physical and psychological quality of life, social relationships, and environment. Psychometric properties were tested internationally and have been reported as high (α = .78, α = .89, α = .70, and α = .80, respectively) (33).

Other Factors

Furthermore, we measured current migrant life stressors with the Post-Migration Living Difficulties Checklist (PMLDC) by Silove et al. (34). The 17-item version that we selected is rated on a scale from 1 ("no problem at all") to 5 ("a very serious problem") and showed good internal consistency of α = .72 (35). Additionally, the three-item scale for perceived discrimination by Finch et al. (36) was used and adapted to the refugee context (internal consistency: α = .76). The sociodemographic and flight-specific data as well as data about current complaints and help-seeking behavior are assessed with the National Migration Questionnaire by the German Association for Psychiatry, Psychotherapy, and Psychosomatics.

Statistical Analysis

Statistical analyses of the data collected so far were conducted using IBM SPSS Statistics 24 (IBM-Deutschland GmbH, Munich, Germany). Descriptive statistics are given in terms of means and standard deviations for continuous variables, and counts and percentages for categorical variables. Prevalence rates were calculated on the basis of cutoff scores, where applicable. Comparability of the participant and non-participant sample was assessed with analyses of variance (ANOVAs) regarding continuous variables, and with chi-square-analysis (χ^2) regarding discrete variables. Descriptive analyses were followed by multivariate analyses of variance (MANOVAs), after having performed power analysis[4], comparing the mental state of refugees treated in psychiatric clinics vs. PCC, and by a paired samples *t* test for a comparison of the refugees' mental state before and after treatment. Analyses were conducted at a significance level of $p = .05$. Assumption of normal distribution was tested in the paired sample using the Shapiro–Wilk Test. The data were normally distributed except for psychoticism, somatization, and trauma symptomatic in the post-treatment measurement. In these cases, the Wilcoxon Signed Rank Test was applied in addition to the

[4]GPower analysis indicated a 93% chance of detecting a large effect size and a 49% chance of detecting a medium effect size (G*Power uses f2 as the effect size parameter (.12 = .01 is small, .252 = .0625 is medium, and .402 = .16 is large) between the two groups as significant at the 5% level (two tailed).

paired samples *t* test. Finally, Pearson's correlation analysis was carried out for the link between post-migration living difficulties and mental health indices.

RESULTS

Secondary Data Collection

The rate of return in this part of the study was relatively low. Of the 32 psychiatric clinics that were approached in the state of Lower Saxony, only 7 completed the survey. Lack of available data about refugee patients in the hospital documentation systems was the major reason for non-participation.

The clinics that did complete the survey reported varying numbers of refugee patients across settings, ranging from 1 to 180 patients in the first quarter of 2018 (see **Figure 3**).

The chief physicians of these clinics ($N = 5$) also rated a given variety of impediments to high-quality mental health care for refugees, i.e., differences in gender roles, institutional racism, time consumption, lack of compliance, lack of trust by the patient, different systems of values, different presentation of symptoms, different understanding of disease, diagnostic uncertainty, and linguistic difficulties. Most notably, out of these, language barriers and lack of sufficient time were reported by all clinics as significant impeding factors. The answers to the other questions in this survey are omitted in this report because of the low return rate.

Survey Among Experts

The impediments to high-quality mental health care for refugees reported by the expert sample match to some extent with those reported by the clinics (see **Figure 4**). In particular, language barriers and limited personnel resources were among the four most widely reported factors together with the insecure legal status of refugees and bureaucratic workload, which was the most-reported factor of all. The other results of the expert survey fall outside the scope of this article.

Primary Data Collection

Sociodemographic and flight-specific data reported by the refugees treated or counseled within refuKey-participating institutions are

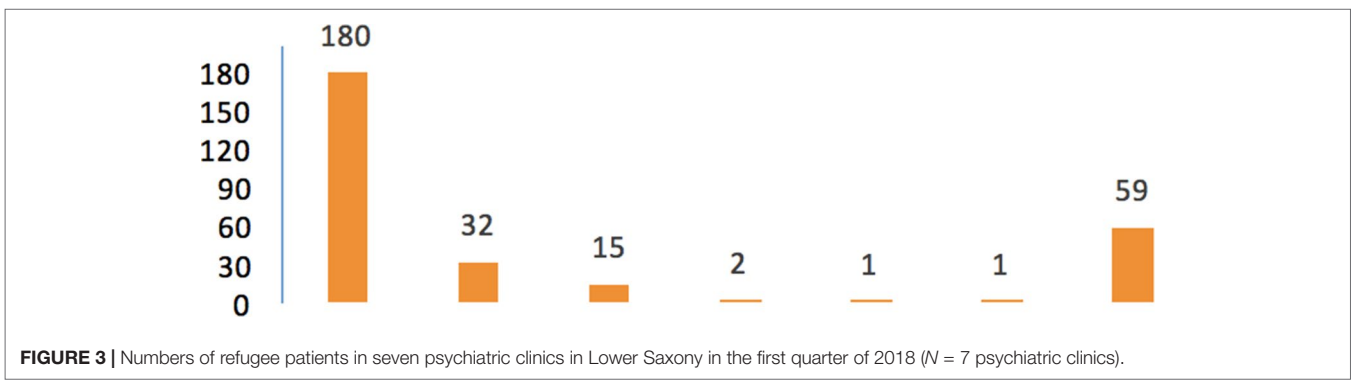

FIGURE 3 | Numbers of refugee patients in seven psychiatric clinics in Lower Saxony in the first quarter of 2018 ($N = 7$ psychiatric clinics).

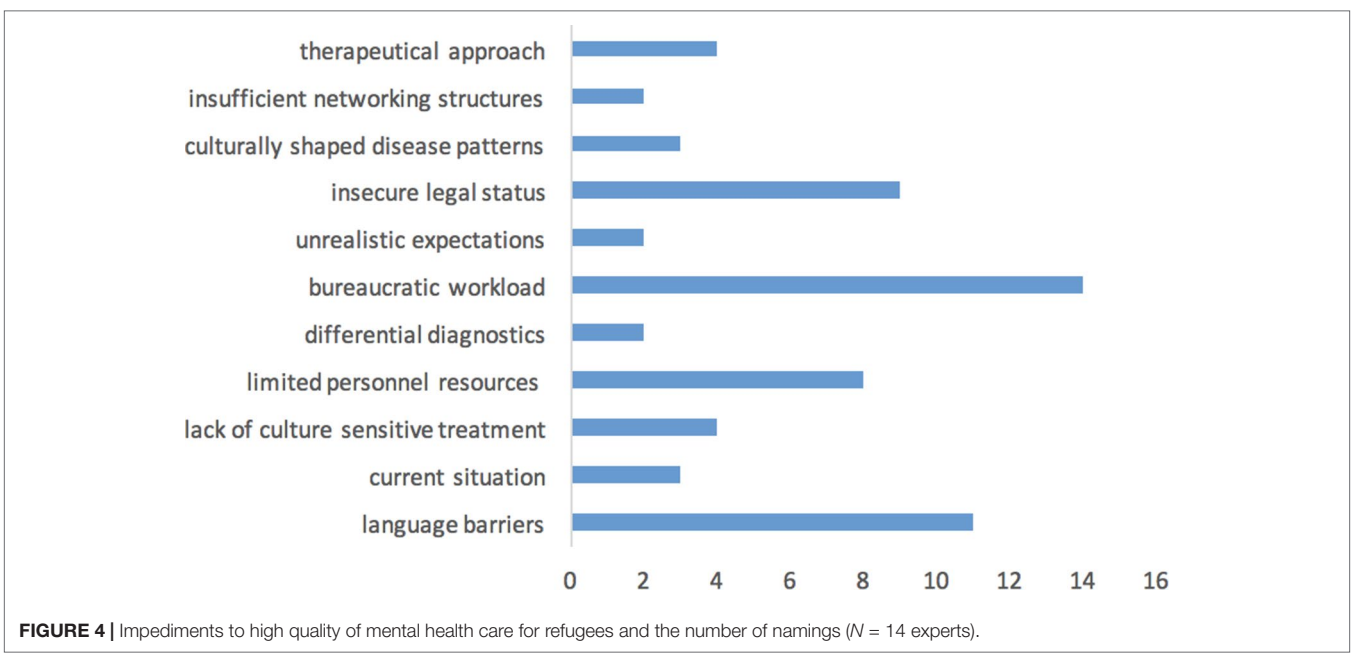

FIGURE 4 | Impediments to high quality of mental health care for refugees and the number of namings ($N = 14$ experts).

presented in **Table 1**. The participant sample in this study so far consisted of 54% males and 46% females, with a mean age of 31.07 years. Participants came from 30 different countries of origin, with Afghanistan (15.4%), Iran (14.2%), Syria (8.0%), and Iraq (6.8%) ranking at the top, followed by Kosovo, Lebanon, Turkey, and Sudan (3.1% each). Notably, over 60% of the participants had an insecure residency status (ranging from threat of deportation to having a residence acceptance), while almost one third of participants did not or could not report any information on residence status.

The refugee patients participating in this study are comparable to those not participating or excluded from the study, in terms of age, gender, and marital status as well as duration of residence and reasons for flight. However, we found significant differences in levels of education [$\chi^2(6) = 19.061$, $p < .01$] as study participants were more educated than non-participants. In terms of legal status, fewer study participants had a residence permit and more are under threat of deportation or are only temporarily tolerated in comparison to non-participants [$\chi^2(7) = 14.922$, $p < .05$].

Complaints and symptoms reported by the participants as reason for seeking help in refuKey are given in **Figure 5**. By far, the most commonly encountered symptom was that of sleeping problems, with three quarters of participants (76%) suffering

TABLE 1 | Sociodemographic and flight-specific characteristics for participating and non-participating refugee patients (ANOVA and chi-squared analysis).

	Total sample (*N* = 454)			Participants (*N* = 171)			Non-participants (*N* = 283)			*F*/χ^2	*df*	*p*
	M/*N*	*SD*/%	Range	*M*/*N*	*SD*/%	Range	*M*/*N*	*SD*/%	Range			
Age	31.6	(10.5)	16–67	31.1	(9.8)	17–62	31.9	(10.8)	16–67	.639		n.s.
Gender												
Male	243	59%		74	54%		169	61%		1.969	1	n.s.
Female	170	41%		63	46%		107	39%				
No information	41			34			7					
Marital status												
Married/in partnership	157	41.2%		54	41.9%		103	40.9%		.523	4	n.s.
Single/divorced/ widowed	224	58.8%		75	58.1%		149	59.1%				
No information	73			42			31					
Education												
Illiteracy	16	9.1%		9	9%		7	9.3%		19.061	6	<.01
No school education	37	21.4%		22	22%		15	20%				
Secondary education	19	10.8%		15	15%		4	5.3%				
Occupational training	4	2.3%		4	4%		0	0%				
High school diploma	24	13.7%		19	19%		5	6.7%				
University	29	16.6%		17	17%		12	16%				
No information	46	26.3%		14	11%		32	42.7%				
Legal status												
Threat of deportation	49	10.8%		20	11.7%		29	10.2%		14.922	7	<.05
Temporary toleration	49	10.8%		21	12.3%		28	9.9%				
Residence acceptance	177	39.0%		56	32.7%		121	42.7%				
Other	16	3.5%		8	4.7%		8	2.8%				
Residence permit	37	8.1%		9	5.3%		28	9.9%		7.324	6	n.s.
Permanent residence permit	2	.4%		1	.6%		1	.3%				
Visa	7	1.5%		2	1.2%		5	1.8%				
No information	117	25.7%		54	31.6%		63	22.3%				
Duration of residence	27.2	(33.9)	1–351	30.6	(30.1)	1–267	25.2	(35.9)	5–351	1.967		n.s.
Reasons for flight												
War	64	38.1%		39	40.2%		25	35.2%		.441	2	n.s.
Natural disaster	3	1.8%		2	2.1%		1	1.5%		.145	2	n.s.
Economic deprivation	24	14.4%		15	15.4%		9	12.8%		.263	2	n.s.
Political/religious persecution	77	46.1%		45	46.4%		32	45.7%		.061	2	n.s.
Social reasons	28	16.8%		19	19.6%		9	12.8%		1.332	2	n.s.
Individual reasons	29	17.4%		20	20.6%		9	12.8%		1.715	2	n.s.
Sex-based/sexual persecution	23	13.8%		9	9.3%		14	20%		4.147	2	n.s.
Other	38	22.7%		23	23.7%		15	21.4%		.160	2	n.s.

Participants/non-participants refuKey refugee patients participating/not participating in the evaluation study; for education and reasons for flight, N = 175, N = 100, and N = 75, respectively; as the data were collected at different points during the treatment process, this information is unfortunately missing for the other 71 participants and 208 non-participants; M, mean; SD, standard deviation; p, level of significance; F value on the F; distribution, test statistics in an analysis of variance; χ2, test statistics in chi-squared tests; df degrees of freedom; n.s, not significant.

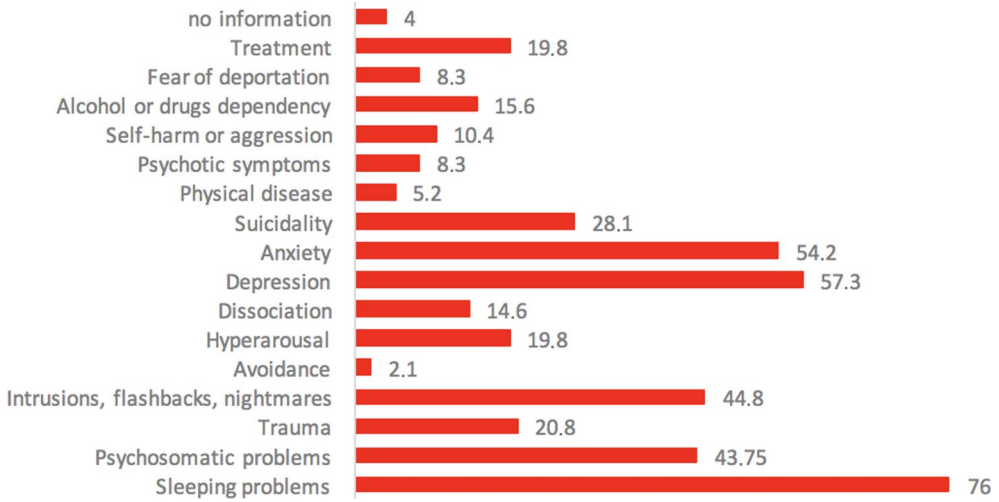

FIGURE 5 | Reported symptoms and complaints in % (*N* = 100 study participants).

from it. Furthermore, approximately half of the participants reported symptoms of depression (57.3%), anxiety (54.2%), psychosomatic problems (43.7%), as well as posttraumatic symptoms (44.8%). The mental health burden of refugees in our sample was very high, reflected by participants' symptom severity estimation shown in **Table 2**. Three quarters (74.8%) reported strong to extreme symptom severity.

The prevalence of clinically relevant symptoms and their severity decreased in the course of treatment as demonstrated in **Table 3**. Prevalence rates decreased from 92.6% to 72.4% for depressive symptoms, from 85.7% to 75.9% for anxiety, from 96.6% to 63% for psychoticism, from 79.3% to 42.9% for somatization, and from 69% to 64.3% for traumatization. Prevalence of very severe symptoms went down to zero after treatment.

Table 4 compares mental health parameters of participants treated in a clinic and participants treated in a PCC. Pre-treatment values did not differ significantly between clinic and PCC, except for pre-treatment depression values being higher in the PCC sample than the clinic sample ($F = 5.126$, $p < .05$).

When comparing post-treatment values to pre-treatment values using a paired t test, we found statistically significant improvements in mental health of refugee patients within refuKey in the aggregated sample (clinic and PCC; see **Table 5**). Significantly reduced mental health burden with moderate to high effect sizes (Cohen's d between .5 and 1) was found for the majority of the measured indices including general well-being ($t = -2.644$, $p < .05$, Cohen's $d = .499$), depression ($t = 3.902$, $p < .001$, Cohen's $d = .613$), anxiety ($t = 3.345$, $p < .01$, Cohen's $d = .751$), psychoticism ($t = 4.945$, $p < .001$, Cohen's $d = .952$), somatization ($t = 4.807$, $p < .001$, Cohen's $d = .908$), and traumatization ($t = 2.529$, $p < .05$, Cohen's $d = .487$) but not for quality of life ($t = -1.816$, n.s.) or post-migration stressors ($t = .919$, n.s.). Since post-treatment psychoticism, somatization, and traumatization were not normally distributed and our sample size was slightly smaller than 30 (the minimum sample size for which this violation could be ignored), the Wilcoxon Signed Rank Test was applied additionally, showing the same result ($p < .001$, $p < .001$, $p < .05$, respectively). After Bonferroni correction for multiple testing, the improvements were still significant for depression, anxiety, somatization, and psychoticism.

Post-migration living difficulties reported by participants are shown in **Table 6**. Family issues (separation from family, worries about family back home, inability to return to home country in case of emergency, loneliness), asylum procedure (fear of being sent back to country of origin), and socioeconomic living conditions (difficulties with employment, difficulties obtaining appropriate accommodation) represented major problems for the participants.

Finally, **Table 7** presents correlations of the Post-Migration Living Difficulties index with the measured mental health indices. Each of these correlations is both highly significant as well as moderate in strength ranging from $r = -.250$ for general well-being to $r = -.537$ for quality of life.

DISCUSSION

The present paper describes the implementation and scientific evaluation of the refuKey project in Lower Saxony, Germany. RefuKey aims to reduce cultural and structural barriers to

TABLE 2 | Estimation of symptom severity/burden in % (*N* = 100 study participants).

No answer	0	1	2	3	4	5	6	7	8	9	10
	No	Very light		Light		Moderate		Strong		Extreme	
12.6	.6	1.1	0	1.1	1.1	3.4	5.2	7.5	14.4	18.4	34.5

TABLE 3 | Prevalence of clinically relevant symptoms and their severity before and after treatment.

	Pre-treatment measurement (%)					Post-treatment measurement (%)				
	N	<Cutoff	Cutoff + 1 *SD*	Cutoff + 2 *SD*	Cutoff + 3 *SD*	Cutoff + 4 *SD*	*N*	<Cutoff	Cutoff + 1 *SD*	Cutoff + 2 *SD*	Cutoff + 3 *SD*	Cutoff + 4 *SD*
Depression (HSCL-25-D)	27	7.4	11.1	37.0	37.0	7.4	29	27.6	31.0	31.0	10.3	0
Anxiety (HSCL-25-A)	28	14.3	10.7	35.7	35.7	3.6	29	24.1	31.0	31.0	13.8	0
Psychoticism (SCL-90-P)	29	3.4	37.9	24.1	24.1	10.3	27	37.0	37.0	14.8	11.1	0
Somatization (SCL-90-S)	29	20.7	31.0	24.1	20.7	3.4	28	57.1	17.9	14.3	10.7	0
Traumatization (HTQ)	29	31.0	34.5	24.1	6.9	3.4	28	35.7	53.6	10.7	0	0

HSCL-25-D, Depression subscale of the Hopkins Symptom Checklist; HSCL-25-A, Anxiety subscale of the Hopkins Symptom Checklist; SCL-90-P, Psychoticism subscale of the Symptom Checklist 90-R; SCL-90-S, Somatization subscale of the Symptom Checklist 90-R; HTQ, Traumatization subscale of the Harvard Trauma Questionnaire.

mental health care faced by refugees by using a need-adapted stepped-care approach and to promote intercultural opening in psychiatric routine care by using a multi-centric approach. The refuKey project offers a differentiated support and care model that includes psychiatric and psychotherapeutic treatments as well as psychosocial counseling with the involvement of interpreters, giving refugees low-threshold access to mental health care services. Furthermore, it provides qualified training in transcultural competence, interpreter-assisted psychotherapy, bureaucratic and legal issues, etc. for mental health care professionals and interpreters. With this approach, refuKey incorporates into its mental health care model all the aspects subsequently recommended in a position paper by the National Academy of Science in Germany (37).

Evidence on refugee mental health care in psychiatric settings in Germany is generally quite scarce. Our secondary data survey provides first insight into the current situation of psychiatric-psychotherapeutic routine care for refugees in Lower Saxony, Germany. The survey shows large differences in the numbers of treated refugees between the psychiatrics clinics as reported by chief physicians, suggesting different levels of transcultural opening in these mental health institutions. Another important finding is the lack of systematic documentation of refugees in psychiatric clinics, explaining the low rate of return in our survey. Records about the authority covering the costs of treatment are often the only indication of refugee status of a patient. Furthermore, the authorities responsible for refugees' health care differ between federal states and change depending on the duration of stay[5]. Due to these differences, some of the refugees cannot be identified as such in the documentation systems of clinics, which makes it difficult to make inferences about the mental health care of this vulnerable group in Germany. An attempt to standardize the documentation processes in medical institutions in Germany is therefore indispensable for improving intercultural opening and finding new strategies for refugee mental health care.

Additionally, in the secondary data collection, chief physicians of psychiatric clinics reported various barriers with a negative impact on the quality of mental health care of refugees. The most commonly reported barriers were 1) communication problems due to lack of language proficiency and 2) the resulting additional time required for psychiatric assessment. Experts also pointed out several difficulties concerning their work with refugees. These included health care barriers (e.g., insecure residence status, bureaucratic burden, linguistic problems) as well as difficulties associated with characteristics of the refugee population itself (e.g., lack of culturally sensitive treatment options, culturally shaped disease patterns, refugees' living conditions). These findings are in line with various structural and social barriers faced by refugees in the health care system that are reported in the literature (15). They also highlight the need for an intercultural opening of the health care system that would, for example, include culturally adapted interventions, cultural competence training for mental health care professionals as

[5]Within the first 15 months, the authorities determined by federal law are responsible for the provision of health care services for refugees (§4&6 AsylbLG). Afterwards, refugees receive the benefits of health insurance (§2 AsylbLG, §264 SGB V) that are covered by the social welfare office.

TABLE 4 | Mental health of refugees turning to psychiatric hospitals and PCC (MANOVA).

	Pre-treatment measurement (*N* = 133)		Pre-treatment measurement in clinic (*N* = 54)		Pre-treatment measurement in PCC (*N* = 79)		*F*	*df*	*p*
	M	*SD*	*M*	*SD*	*M*	*SD*			
General well-being (WEMWBS)	34.5	(11.9)	36.5	(12.2)	33.1	(11.6)	2.637	1	ns
Depression (HSCL-25-D)	44.3	(8.7)	42.3	(8.9)	45.7	(8.3)	5.126	1	<.05
Anxiety (HSCL-25-A)	28.5	(6.4)	27.8	(6.6)	29.0	(6.3)	1.208	1	ns
Psychoticism (SCL-90-P)	18.1	(10.0)	18.4	(9.8)	17.9	(10.2)	.063	1	ns
Somatization (SCL-90-S)	21.6	(12.6)	22.2	(13.6)	21.3	(12.1)	.176	1	ns
Traumatization (HTQ)	84.3	(18.6)	82.1	(20.7)	85.8	(17.0)	1.334	1	ns
Quality of Life (WHOQoL)	65.8	(15.6)	67.4	(16.8)	64.6	(14.8)	.996	1	ns

WEMWBS, Warwick Edinburgh Mental Well-Being Scale; HSCL-25-D, Depression subscale of the Hopkins Symptom Checklist; HSCL-25-A, Anxiety subscale of the Hopkins Symptom Checklist; SCL-90-P, Psychoticism subscale of the Symptom Checklist 90-R; SCL-90-S, Somatization subscale of the Symptom Checklist 90-R; HTQ, Traumatization subscale of the Harvard Trauma Questionnaire; WHOQoL, WHO Quality of Life Questionnaire; M, mean; SD, standard deviation; p, level of significance; F, value on the F distribution; test statistics in analysis of variance; df, degrees of freedom; n.s, not significant.

TABLE 5 | Mental health scores of refugee patients before and after treatment within refuKey (paired *t* test).

	N	Pre-treatment measurement		Post-treatment measurement		*t*	*df*	*p*	Cohen's *d*
		M	*SD*	*M*	*SD*				
General well-being (WEMWBS)	28	38.5	(15.2)	45.1	(14.6)	−2.644	27	<.05	.499
Depression (HSCL-25-D)	27	41.7	(9.0)	34.2	(11.5)	3.902	26	<.001	.613
Anxiety (HSCL-25-A)	28	27.2	(6.8)	22.8	(7.9)	3.245	27	<.01	.751
Psychoticism (SCL-90-P)	27	21.1	(11.6)	9.2	(8.7)	4.945	26	<.001	.952
Somatization (SCL-90-S)	28	24.9	(14.7)	12.8	(12.9)	4.807	27	<.001	.908
Traumatization (HTQ)	27	79.1	(20.7)	69.2	(19.5)	2.529	26	<.05	.487
Quality of Life (WHOQoL)	25	67.9	(18.8)	74.3	(23.9)	−1.816	24	ns	–
Post-Migration Living Difficulties (PMLDC)	28	58.8	(12.9)	56.0	(15.1)	.919	27	ns	–

WEMWBS, Warwick Edinburgh Mental Well-Being Scale; HSCL-25-D, Depression subscale of the Hopkins Symptom Checklist; HSCL-25-A, Anxiety subscale of the Hopkins Symptom Checklist; SCL-90-P, Psychoticism subscale of the Symptom Checklist 90-R; SCL-90-S, Somatization subscale of the Symptom Checklist 90-R; HTQ, Traumatization subscale of the Harvard Trauma Questionnaire; WHOQoL, WHO Quality of Life Questionnaire; PMLDC, Post-Migration Living Difficulties Checklist; M, mean; SD, standard deviation; p, level of significance; t, value on the t distribution; test statistics in a t test; df, degrees of freedom; Cohen's d, measure of effect size; n.s, not significant.

well as availability of professional interpreters to overcome language barriers, as implemented by the refuKey project.

First preliminary findings on the treatment of refugees within refuKey showed significant improvements (both statistically and in terms of effect sizes) on most general and symptom-specific outcome measures. RefuKey patients displayed increased general well-being and lower depression, anxiety, psychoticism, somatization, and traumatization values at the end of treatment, while perceived quality of life did not increase significantly, which could be ascribed to insufficient statistical power due to small sample size. As the post-migration stressors did not change over the course of the treatment and despite the fact of possible confounders, the improvement in refuKey patients' mental health might be attributable to the treatment itself. However, a control group is needed to evaluate the specific effectiveness of treatment within refuKey as compared to treatment as usual.

Another important point to emphasize is that refugees admitted to psychosocial counseling centers showed psychiatric symptom severity levels similar to those admitted to psychiatric clinics. In this context, it is especially important to distinguish between the refugees who could be treated solely by psychosocial interventions in the PCCs and those who display more severe symptoms, in order to provide sufficient care for the latter group through cooperation and networking between PCCs and psychiatric clinics. This finding speaks in favor of a need-adapted stepped-care model with cooperating competence centers as implemented in the refuKey project to overcome structural and social barriers. In this sense, experience that will be gained in the course of the refuKey project regarding the close collaboration between PCCs and psychiatric clinics will deepen our understanding of how to implement stepped-care approaches, especially concerning the extent of the needed support and the question of how to overcome access barriers.

Additionally, we examined the relationship between post-migratory living difficulties and indicators of mental health in refugees treated within refuKey and found an association between the two. Specifically, a higher load of post-migration stressors was strongly associated with lower quality of life and moderately associated with lower general well-being. A moderate association of post-migratory living difficulties with more severe syndrome-specific outcomes such as symptoms of depression, anxiety,

TABLE 6 | Prevalence of post-migration living difficulties (PMLDC) before treatment.

	N	*M*	*SD*
Communication difficulties	134	3.18	(1.31)
Discrimination	125	2.64	(1.45)
Conflicts with your own/other ethnic groups in Germany	128	1.94	(1.42)
Separation from your family	130	3.68	(1.51)
Worries about family back home	131	4.02	(1.37)
Being unable to return to your home country in an emergency	128	4.09	(1.46)
Difficulties with employment (being permitted to work, finding work, bad working conditions, etc.)	123	3.53	(1.50)
Difficulties in interviews with immigration officials	131	3.22	(1.67)
Conflicts with social workers/other authorities	128	1.95	(1.42)
Not being recognized as a refugee	119	3.35	(1.76)
Being fearful of being sent back to your country of origin in the future	132	4.63	(.96)
Worries about not getting access to treatment for health problems	133	3.38	(1.57)
Not enough money to buy food, pay the rent, or buy necessary clothes	131	3.11	(1.46)
Difficulties obtaining financial assistance	124	2.79	(1.58)
Loneliness, boredom, or isolation	131	4.15	(1.23)
Difficulties learning German	133	3.26	(1.41)
Difficulties obtaining appropriate accommodation	130	3.76	(1.50)

TABLE 7 | Correlation between mental health indices and Post-Migration Living Difficulties Scale (PMLDC, Pearson's correlation analysis).

	N	*r*	*Sig.* (2-tailed)
General well-being (WEMWBS)	131	−.250**	.004
Depression (HSCL-25-D)	129	.415**	.000
Anxiety (HSCL-25-A)	131	.341**	.000
Psychoticism (SCL-90-P)	133	.367**	.000
Somatization (SCL-90-S)	134	.401**	.000
Traumatization (HTQ)	130	.457**	.000
Quality of Life (WHOQoL)	132	−.537**	.000

WEMWBS, Warwick Edinburgh Mental Well-Being Scale; HSCL-25-D, Depression subscale of the Hopkins Symptom Checklist; HSCL-25-A, Anxiety subscale of the Hopkins Symptom Checklist; SCL-90-P, Psychoticism subscale of the Symptom Checklist 90-R; SCL-90-S, Somatization subscale of the Symptom Checklist 90-R; HTQ, Traumatization subscale of the Harvard Trauma Questionnaire; WHOQoL, WHO Quality of Life Questionnaire; PMLDC, Post-Migration Living Difficulties Checklist; r Pearson's correlation coefficient, Sig. level of significance.

psychoticism, somatization, and traumatization was similarly observed. Exposure to multiple post-migration stressors combined with psychological resource constraints faced by refugees may lead to poorer mental health and thus explain this association(38). In this study, the main stressors reported by refugee participants were fear of deportation, concerns about family members back home, inability to return home in case of emergency as well as loneliness, boredom, and isolation. Similarly, studies examining the nature of post-migration stressors in samples of asylum seekers reported fear of deportation and concerns about family members back home, but also delays in processing asylum applications, and not having a work permit as main stressors (39, 40). Furthermore, the link between psychoticism and post-migration stressors has been addressed by research showing elevated risk of psychosis not only in first- but also in second-generation migrants (6). Selten and Cantor-Graae, (41) suggest that social defeat, defined as the long-term experience of an outsider status or a subordinate position, might be the mechanism underlying the enhanced risk of psychosis in the respective population.

Interestingly, we found no increase in quality of life after treatment but observed a strong negative association between quality of life and post-migration stressors. This finding might suggest that in contrast to the other mental health measures, quality of life depends more on factors such as post-migration stressors, which are not solely influenced by a psychotherapeutic or psychiatric treatment. Even though our analysis of the former relationship does not allow causal inferences, it seems likely that attempts to reduce post-migration stressors could improve quality of life in refugees. This hypothesis is supported by longitudinal evidence examining distress in refugees in relation to the state of their asylum-seeking process, which revealed a decrease in mental health burden only for those refugees who obtained a positive legal status outcome within the measurement data points (40). Moreover, Laban, Gernaat, Komproe, Schreuders, and De Jong (42) compared recently arrived (<6 months) with long-term (>2 years) asylum seekers and found increased prevalence of psychiatric disorders in the long-term group, which implies an influence of post-migration factors on mental health. Thus, it would be beneficial to the mental health of refugees to reduce post-migration stressors through appropriate administrative changes to the asylum procedure and social policies. Providing culturally adapted and timely mental health care for refugees including support for social integration has also positive socio-political consequences. Integration of refugees to the host country is a manifold and multifaceted process, including adaptation into the educational, labor, health, and community systems and affected by various factors such as pre- and post-migratory experiences and openness of the host society towards cultural diversity (43). Moreover, it has been shown that the psychiatric impairment goes along with poor integration measures in refugees (35). Therefore, early recognition and mitigation of the psychiatric symptoms *via* culture-sensitive and need-adapted approaches are crucial to promote social integration and psycho-social functioning of the refugees who have to contend not only with their previous traumatic experiences but also with the post-migratory stress factors.

With our primary dataset, we provide a naturalistic overview of various demographic and clinical variables in a help-seeking refugee population. Therefore, our results should not be generalized to refugees outside psychiatric and psychosocial settings. Furthermore, no causal conclusions regarding post-migration factors can be drawn from our data, since it is cross-sectional. Additionally, since this is an ongoing study, the statistical power is still low. Therefore, we could not yet control for covariates within our analysis and cannot exclude that the results are influenced by a third variable (e.g., country of origin, changes in asylum status), so that the results should be interpreted with caution. Self-reports were provided in the patients' native language to overcome a possible source of bias, which can be regarded as one of the key strengths of our study. It is also important to emphasize that it is challenging to assess the effectiveness of

these complex interventions in a way that allows for drawing robust conclusions. For that reason, further evaluation strategies such as prospective comparative methods will be combined with the ongoing evaluation process.

To conclude, this study provides the first scientific naturalistic preliminary dataset from the implementation of an innovative need-adapted stepped-care model project (refuKey) in Lower Saxony, Germany. The existence of structural and social barriers regarding the access of refugees to adequate and high-quality mental health care was discussed. Our data also support findings concerning the impact of the post-migratory living difficulties on mental health and quality of life of refugees. In addition, the need for stepped-care approaches and firm networking between psychosocial centers and psychiatric clinics was underlined. First results suggest a positive impact of the project on the mental health care situation of asylum seekers who seek help from refuKey mental health care services and indicate that the mental health care model implemented by the project might serve as a good adaptation to the needs of refugees.

DATA AVAILABILITY

The datasets generated for this study are available on request to the corresponding author.

ETHICS STATEMENT

The studies involving human participants were reviewed and approved by Ethics committee of the Hanover Medical School. The patients/participants provided their written informed consent to participate in this study.

AUTHOR CONTRIBUTIONS

BT, LE, IO, and IG-C contributed conception and design of the study. BT, LE, KL, and GP contributed to the acquisition of data. LE organized the database. BT performed the statistical analysis. BT, UA, and JW wrote sections of the manuscript. All authors contributed to manuscript revision, read and approved the submitted version.

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REFERENCES

1. UNHCR: https://www.unhcr.org/figures-at-a-glance.html
2. Federal Ministry of the Interior. (2019). Migration Report of the Federal Office for Migration and Refugees by order of the Federal Government - Migration Report 2015. Retrieved from http://www.bamf.de/SharedDocs/Anlagen/DE/Publikationen/Migrationsberichte/migrationsbericht-2016-2017.pdf?__blob = publicationFile
3. Bogic M, Njoku A, Priebe S. Long-term mental health of war-refugees: a systematic literature review. *BMC Int Health Hum Rights* (2015) 15(1):29. doi: 10.1186/s12914-015-0064-9
4. Fazel M, Wheeler J, Danesh J. Prevalence of serious mental disorder in 7000 refugees resettled in western countries: a systematic review. *The Lancet* (2005) 365(9467):1309–14. doi: 10.1016/S0140-6736(05)61027-6
5. Steel Z, Chey T, Silove D, Marnane C, Bryant RA, Van Ommeren M. Association of torture and other potentially traumatic events with mental health outcomes among populations exposed to mass conflict and displacement: a systematic review and meta-analysis. *JAMA* (2009) 302(5):537–49. doi: 10.1001/jama.2009.1132
6. Bourque F, van der Ven E, Malla A. A meta-analysis of the risk for psychotic disorders among first-and second-generation immigrants. *Psychol Med* (2011) 41(5):897–910. doi: 10.1017/S0033291710001406
7. Dapunt J, Kluge U, Heinz A. Risk of psychosis in refugees: a literature review. *Transl Psychiatry* (2017) 7(6):e1149. doi: 10.1038/tp.2017.119
8. Hollander AC, Dal H, Lewis G, Magnusson C, Kirkbride JB, Dalman C. Refugee migration and risk of schizophrenia and other non-affective psychoses: cohort study of 1.3 million people in Sweden. *BMJ* (2016) 352:i1030. doi: 10.1136/bmj.i1030
9. Li SS, Liddell BJ, Nickerson A. The relationship between post-migration stress and psychological disorders in refugees and asylum seekers. *Curr Psychiatry Rep* (2016) 18(9):82. doi: 10.1007/s11920-016-0723-0
10. Georgiadou E, Zbidat A, Schmitt GM, Erim Y. Prevalence of mental distress among Syrian refugees with residence permission in Germany: a registry-based study. *Front Psychiatry* (2018) 9:393. doi: 10.3389/fpsyt.2018.00393
11. Giacco D, Laxhman N, Priebe S. Prevalence of and risk factors for mental disorders in refugees. *Semin Cell Dev Biol* (2018) 77(5):144–152. doi: 10.1016/j.semcdb.2017.11.030
12. Knipscheer JW, Sleijpen M, Mooren T, ter Heide FJJ, van der Aa N. Trauma exposure and refugee status as predictors of mental health outcomes in treatment-seeking refugees. *BJPsych Bull* (2015) 39(4):178–82. doi: 10.1192/pb.bp.114.047951
13. Stepniak B, Papiol S, Hammer C, Ramin A, Everts S, Hennig L, et al. Accumulated environmental risk determining age at schizophrenia onset: a deep phenotyping-based study. *The Lancet Psychiatry* (2014) 1(6):444–53. doi: 10.1016/S2215-0366(14)70379-7
14. Veling W, Selten JP, Susser E, Laan W, Mackenbach JP, Hoek HW. Discrimination and the incidence of psychotic disorders among ethnic minorities in The Netherlands. *Int J Epidemiol* (2007) 36(4):761–8. doi: 10.1093/ije/dym085
15. Morris MD, Popper ST, Rodwell TC, Brodine SK, Brouwer KC. Healthcare barriers of refugees post-resettlement. *J Community Health* (2009) 34(6):529. doi: 10.1007/s10900-009-9175-3
16. Asgary R, Segar N. Barriers to health care access among refugee asylum seekers. *J Health Care Poor Underserved* (2011) 22(2):506–22. doi: 10.1353/hpu.2011.0047

17. Bauer AM, Alegría M. Impact of patient language proficiency and interpreter service use on the quality of psychiatric care: a systematic review. *Psychiatr Serv* (2010) 61(8):765–73. doi: 10.1176/ps.2010.61.8.765
18. Kohlenberger J, Buber-Ennser I, Rengs B, Leitner S, Landesmann M. Barriers to health care access and service utilization of refugees in Austria: evidence from a cross-sectional survey. *Health Policy* (2019) doi: 10.1016/j.healthpol.2019.01.014
19. Betancourt JR, Green AR, Carrillo JE, Park ER. Cultural competence and health care disparities: key perspectives and trends. *Health Affairs* (2005) 24(2):499–505. doi: 10.1377/hlthaff.24.2.499
20. Schouler-Ocak M, Graef-Calliess IT, Tarricone I, Qureshi A, Kastrup MC, Bhugra D. EPA guidance on cultural competence training. *Eur Psychiatry* (2015) 30(3):431–40. doi: 10.1016/j.eurpsy.2015.01.012
21. Asylbewerberleistungsgesetz. (n.d.). Retrieved from http://www.gesetze-im-internet.de/asylblg/index.html#BJNR107410993BJNE000109116
22. National Institute for Health Care and Excellence [NICE], 2011. Common mental health problems: identification and pathways to care. *Clin Guidel.* Retrieved from: https://www.nice.org.uk/guidance/cg123/resources/common-mental-health-problems-identification-and-pathways-to-care-pdf-35109448223173
23. Trilesnik B, Eckhoff L, Özkan K, Loos G, Penteker I, Graef-Calliess. IT. *Evaluation des Pilotprojektes "refuKey" zur Optimierung der psychiatrisch-psychotherapeutischen Versorgung von traumatisierten Geflüchteten in Niedersachen*. DGPPN Kongress, Berlin (2018).
24. Maslach C, Jackson SE, Leiter MP, Schaufeli WB, Schwab RL. *Maslach burnout inventory* Vol. 21. Palo Alto, CA: Consulting Psychologists Press (1986) p. 3463–4. z
25. Dalbert C. Subjektives wohlbefinden junger erwachsener: theoretische und empirische analysen der struktur und stabilität. *Z Differentielle Diagnostische Psychol* (1992) 13(4): 207–220
26. Tennant R, Hiller L, Fishwick R, Platt S, Joseph S, Weich S, et al. The Warwick-Edinburgh mental well-being scale (WEMWBS): development and UK validation. *Health Qual Life Outcomes* (2007) 5(1):63. doi: 10.1186/1477-7525-5-63
27. Derogatis LR, Lipman RS, Rickels K, Uhlenhuth EH, Covi L. The Hopkins Symptom Checklist (HSCL): a self-report symptom inventory. *Behav Sci* (1974) 19(1):1–15. doi: 10.1002/bs.3830190102
28. Derogatis LR. *Symptom Checklist-90-R: administration, scoring & procedure manual for the revised version of the SCL-90*. Minneapolis, MN: National Computer Systems (1994).
29. Mollica RF, Caspi-Yavin Y, Bollini P, Truong T, Tor S, Lavelle J. The Harvard Trauma Questionnaire: validating a cross-cultural instrument for measuring torture, trauma, and posttraumatic stress disorder in Indochinese refugees. *J Nerv Mental Dis* (1992). 180(2): 111–6. doi: 10.1037/t07469-000
30. Whoqol Group. Development of the World Health Organization WHOQOL-BREF quality of life assessment. *Psychol Med* (1998) 28(3):551–8. doi: 10.1017/S0033291798006667
31. Thapa SB, Hauff E. Psychological distress among displaced persons during an armed conflict in Nepal. *Soc Psychiatry Psychiatr Epidemiol* (2005) 40(8):672–9. doi: 10.1007/s00127-005-0943-9
32. Franke GH. *Symptom-Checkliste von LR Derogatis: SCL-90-R; deutsche Version*. Göttingen: Beltz Test (2002).
33. Bandar NFA, Jani R, Karim MA. Psychometric properties of the WHOQOL-BREF questionnaire among disabled students in Malaysian higher learning institutions. *Appl Res Qual Life* (2014) 9(3):469–78. doi: 10.1007/s11482-013-9244-8
34. Silove D, Sinnerbrink I, Field A, Manicavasagar V, Steel Z. Anxiety, depression and PTSD in asylum-seekers: associations with pre-migration trauma and post-migration stressors. *Br J Psychiatry* (1997) 170(4):351–7. doi: 10.1192/bjp.170.4.351
35. Schick M, Zumwald A, Knöpfli B, Nickerson A, Bryant RA, Schnyder U, et al. Challenging future, challenging past: the relationship of social integration and psychological impairment in traumatized refugees. *Eur J Psychotraumatol* (2016) 7(1):28057. doi: 10.3402/ejpt.v7.28057
36. Finch BK, Hummer RA, Kol B, Vega WA. The role of discrimination and acculturative stress in the physical health of Mexican-origin adults. *Hisp J Behav Sci* (2001) 23(4):399–429. doi: 10.1177/0739986301234004
37. Leopoldina (Nationale Akademie der Wissenschaften). *Traumatisierte Flüchtlinge – schnelle Hilfe ist jetzt nötig*. Halle, Germany: Saale. (2018)
38. Ryan DA, Benson CA, Dooley BA. Psychological distress and the asylum process: a longitudinal study of forced migrants in Ireland. *J Nerv Mental Dis* (2008) 196(1):37–45. doi: 10.1097/NMD.0b013e31815fa51c
39. Begley M, Garavan KC, Condon M, Kelly I, Holland K, Staines A. Asylum in Ireland—a public health perspective. In: *Project Report*. Department of Public Health Medicine and Epidemiology, University College Dublin, and the Congregation of the Holy Ghost, Dublin (1999).
40. Ryan D, Dooley B, Benson C. Theoretical perspectives on post-migration adaptation and psychological well-being among refugees: towards a resource-based model. *J Refugee Stud* (2008) 21(1):1–18. doi: 10.1093/jrs/fem047
41. Selten J. Cantor-Graae E. Social defeat: risk factor for schizophrenia? *Br J Psychiatry* (2005) 187(2):101–102. doi:10.1192/bjp.187.2.101
42. Laban CJ, Gernaat HB, Komproe IH, Schreuders BA, De Jong JT. Impact of a long asylum procedure on the prevalence of psychiatric disorders in Iraqi asylum seekers in The Netherlands. *J Nerv Mental Dis* (2004) 192(12):843–51. doi: 10.1097/01.nmd.0000146739.26187.15
43. Robila M (2018). Refugees and social integration in Europe, presented at United Nations Expert Group Meeting of the United Nations Department of Economic and Social Affairs (UNDESA) Division for Social Policy and Development, New York, 2018. Retrieved from: https://www.un.org/development/desa/family/wp-content/uploads/sites/23/2018/05/Robila_EGM_2018.pdf

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Variables Connecting Parental PTSD to Offspring Successful Aging: Parent–Child Role Reversal, Secondary Traumatization, and Depressive Symptoms

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The effects of parental trauma on offspring of Holocaust survivors (OHS) are debated in the literature. Recently, scholars suggested that it may be more productive to ask when and *via* which mechanisms such effects are observed. Following, the current study examines if parental Holocaust-related posttraumatic stress disorder (PTSD) symptoms are linked with the aging processes of their middle-aged offspring. Beyond this association, we also suggested a putative mediation path, indicating three underlying mechanisms by which parental trauma lingers on: perceived parent–child role reversal, secondary traumatization, and depressive symptoms. Using a convenience sample of 682 community-dwelling participants, comprising 341 older adult parent–middle-aged offspring dyads (*M* age = 81.71 and 54.58 for parents and offspring, respectively) to address this issue. Parents reported PTSD with the valid measure of PTSD Checklist for Diagnostic and Statistical Manual of Mental Disorders, fifth edition. OHS reported perceived parent–child role reversal, secondary traumatization, depressive symptoms, and completed indices of successful aging. Based on parents' reports, we divided the parent–offspring dyads into three groups: OHS whose parents had probable PTSD (*n* dyads = 43), OHS whose parents did not have PTSD (*n* dyads = 161), and comparison with parents who did not undergo the Holocaust (*n* dyads = 137). Findings reveal that OHS with parents suffering from probable PTSD aged less successfully than comparisons. Serial mediation analyses validated the aforementioned putative pathway (perceived parent–child role reversal, secondary traumatization, and depression) linking parental PTSD with offspring successful aging. Our findings are discussed through a vignette depicting a fictional OHS character. These underlying mechanisms suggest that different types of interventions, each geared towards a specific mechanism, may mitigate the lingering effect of parental PTSD on diminished OHS successful aging.

Keywords: Holocaust, intergenerational transmission, parental posttraumatic stress disorder, parent–child role reversal, successful aging

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INTRODUCTION

A fair amount of earlier evidence suggests that mass trauma exposure, such as genocide, may shape late-life physical [e.g., (1–3)] and psychological (4, 5) morbidity in survivors. Admittedly, less is known about how parental exposure to genocide may affect the aging process of subsequent generations which were not directly exposed [see (6) for exception]. Accordingly, the goal of the current study is twofold: first, to examine whether offspring of Holocaust survivors' (OHS) aging is associated with parental trauma and posttraumatic stress disorder (PTSD), namely, tying parental trauma to offspring's successful aging; second, to assess potential mediators that may link parental trauma and PTSD to OHS's successful aging. These mediators include the parent–child role reversal common in Holocaust survivor families, whereby the child assumes a parental role as explained below, as well as secondary traumatization and depressive symptoms experienced by the OHS. These variables are hypothesized to serially mediate the association between parental PTSD and the offspring's successful aging.

Trauma and Successful Aging

The notion that parents' trauma transmits into offspring has been debated (e.g., 7–9). Using a meta-analysis to examine 32 studies on this topic did not reveal an overall effect of OHS being more impaired on psychosocial functioning (10). Still, this study did find indications of greater distress among OHS relative to comparisons if they experienced stressful events. For example, OHS who coped with breast cancer reported greater distress relative to comparisons (those whose parents did not undergo the Holocaust) patients (11). Recently, a literature review (12) revealed that half the studies addressing transmission of trauma to OHS found some indications of more psychopathology in OHS participants; yet, these authors noted that those studies were methodologically inferior to the studies which did not find such effects. In both middle-aged and older OHS, impaired physical health was noted [(13, 14); but see (15), who did not find such results].

In light of the mixed evidence regarding mental and physical health of OHS, researchers claim that efforts should shift from focusing on "if OHS are more vulnerable?," to questions addressing the mechanisms and conditions, under which transmission may be observed. For example, in which families should we expect to see trauma transmission, and by which mechanisms should transmission transpire (8, 16)? Following, it may be that intergenerational transmission of trauma is not automatic, nor is it an unavoidable outcome of parental trauma; rather, it may stem from an unresolved attempt by parents to cope with their own trauma.

Aligned with this idea, parental PTSD has been generally associated with an increased risk for psychopathology in young offspring (17, 18). OHS also showed increased vulnerability to PTSD and other psychiatric disorders, especially when they perceived both their parents to have PTSD (19) or perceived one of the parents to have a negative parental style (16), meaning parents characterized as being stuck in the trauma or those who are numb and emotionally detached. It remains to be resolved whether and how parental PTSD is linked with the aging process of OHS.

Secondary Traumatization Mediates Parental PTSD–Offspring's Successful Aging Link

The term secondary traumatization is defined by manifestation of PTSD symptoms in cases where there was no direct exposure, e.g., if an OHS would have nightmares about parental Holocaust experiences (20, 21).

In Shrira et al. (6), the link between parental PTSD–offspring's successful aging was mediated by OHS's secondary traumatization. This finding is most important for two reasons: first, not much is known with regard to secondary traumatization in OHS [for exceptions, see (22, 23)]. Second, although many studies have linked PTSD to impaired health and premature death (24–26) and negative aging evaluations (27), secondary traumatization is not often considered in the aging context. In the next two sections, we respectively address two additional potential mediators of the association between parental PTSD (emerging from long-term trauma) and offspring's successful aging.

Parent–Child Role Reversal

Initial data reveal elevated secondary traumatization in a minority of OHS who reported faulty parental communication of trauma, i.e., parental trauma was communicated in an intrusive manner [cf. (28)]. Their secondary traumatization level in turn was related to more impaired health problems and negative perceptions regarding aging (29). There are several documented detrimental parenting styles that some Holocaust survivors (HS) have been known to engage in, e.g. HS parents becoming overprotective, viewing the world as a place fraught with danger, such as allowing their children to go on an organized field trip (30, 31). In other cases, the parent who has not adequately dealt with their own trauma may reject their children. Yehuda et al. (32) found that the more an OHS felt rejected as a child by their parents, the greater the trauma transmission was. The third and perhaps most detrimental parenting style is that of role reversal, namely, the parental child, where the child assumes the role of the parent—who is too emotionally frail to function as a parent and who also has too many unmet needs (33). The parents' psychopathological need for an attachment figure, due to their own arrested attachment resulting from childhood exposure to genocide, renders their own child, their "parent" (30, 31). Such OHS may feel burdened by being charged with taking care of parents' emotions and well-being at the expense of their own attachment and development. Some HS, particularly those who are more affected by their past trauma, may indirectly convey their emotional susceptibility to OHS, causing them to be the "parent," who is now worrying about their well-being [see (23, 34)]. We thus hypothesize that parental PTSD may lead to role reversal, which will in turn lead to higher

secondary traumatization [e.g., (23)]. Below, we address how this path of parental PTSD *via* role reversal, *via* secondary traumatization, will lead to depression.

Secondary Traumatization and Depression

Although it is known that PTSD and depression overlap often, and that such a comorbid condition is often qualitatively different (35), depression is often ignored. Depression is also frequently ignored with regard to the issue of secondary traumatization, although we know that there are strong associations between the two conditions (36). This lacuna also exists with regard to the Holocaust literature (37, 38). Nevertheless, it is very likely that parental PTSD, leading to OHS role reversal, which would putatively perpetuate a higher secondary traumatization level, would cumulate in high levels of depressive symptoms. In turn, suffering from depressive symptoms would, by definition, impair one's level of successful aging, as noted below.

Successful Aging

Successful aging may be addressed in several manners. The seminal successful aging operationalization by Rowe and Kahn (39) is based on the tenet that disease, disability, and decline may not be inevitable aging processes. Successful aging is thus described as the combination between a lack of disease and disability along with an active engagement with life. Some critique this position, as it may include very few older people who are able to maintain high levels of functioning (40). A contemporary view suggests moving from a binary definition of successful aging (i.e., successful vs. unsuccessful aging) to a continuous measure, as even when aging may be associated with limitations in one aspect of functioning, persons may perform relatively well in other domains (41). Following, we operationalize successful aging as a continuous, multidimensional construct that incorporates several indices [cf. (42)].

Summary and Hypotheses

To recapitulate, we assessed the relationship of parental PTSD with the primary outcome of successful aging, as well as with the secondary outcomes of parent–child role reversal, secondary traumatization, and depressive symptoms. We propose a model in which parental PTSD relates to role-reversal (parental child) among OHS. Role reversal should associate with higher levels of secondary traumatization in OHS, which in turn should be positively associated with their depressive symptoms. Finally, higher depressive symptoms should associate with less successful aging in OHS.

More specifically, we hypothesized that OHS with parental PTSD will present less successful aging relative to comparisons (i.e., those whose parents were not exposed to the Holocaust), whereas OHS without parental PTSD will age as successfully as comparisons. Second, we hypothesized that the association of parental PTSD with offspring successful aging will be serially mediated *via* parenting (role reversal), OHS's secondary traumatization level, and level of depressive symptoms.

MATERIAL AND METHODS

Participants

A convenience sample included 682 community-dwelling participants, who who comprised 341 dyads, of parents and adult offspring. All parents were Jewish of European origin born before 1945. Offspring were born after 1945 and had two parents who were alive during World War II. HS and their offspring included 204 dyads, and comparison parents without a Holocaust background and their offspring included 137 dyads. Holocaust background was determined by parents' presence under Nazi or pro-Nazi occupation or domination during World War II.

Dyads were next divided according to probable parental PTSD (for more details see the Measures section). There were 43 Holocaust dyads with a parent suffering from probable PTSD, 161 Holocaust dyads with a parent without PTSD, and 137 comparison dyads (all of them with parents without PTSD).

Table 1 presents the background characteristics of the study groups. HS with or without PTSD were older than comparison parents. HS with probable PTSD had lower education level and rated their economic status as lower than both other groups. The groups did not significantly differ in parental gender and marital status. OHS whose parents had probable PTSD were older relative to comparison offspring. The offspring groups did not significantly differ in any of the other background characteristics.

In the total sample, 12.6% of parent–offspring dyads were father–son dyads, 22.0% were father–daughter dyads, 23.2% were mother–son dyads, and 42.2% were mother–daughter dyads. The ratio of the dyad types did not significantly differ across the three study groups, $\chi^2(6) = 3.20$, $p = 0.78$.

Among HS, the median year of emigrating to Israel was 1949, and median age at the time of immigration to Israel was 19. Holocaust-related experiences (e.g., being in a concentration camp, work camp, ghetto, hiding, living with partisans, having been exposed to hunger, extreme weather conditions, and extreme physical abuse) were documented among HS. Compared to survivors without PTSD, a significantly greater number of survivors with probable PTSD were in work camps [41.9% vs. 19.3%, $\chi^2(1) = 9.50$, $p = 0.002$], exposed to hunger [37.2% vs. 20.5%, $\chi^2(1) = 5.19$, $p = 0.02$), extreme weather conditions [34.9% vs. 19.3%, $\chi^2(1) = 4.74$, $p = 0.02$], and physical abuse during the Holocaust [16.3% vs. 5.0%, $\chi^2(1) = 6.37$, $p = 0.01$]. Significantly more survivors without PTSD reported to have been in hiding than survivors with probable PTSD [47.8% vs. 23.3%, $\chi^2(1) = 8.37$, $p = 0.004$].

Measures

Background characteristics. Background characteristics were completed by all respondents and included age, gender, education, and marital status. Education was rated on a scale from "no formal education" (1) to "academic degree" (6). Self-rated economic status was rated with a single item on a scale from "not good at all" (1) to "very good" (5).

PTSD symptoms. PTSD symptoms were rated by all parents *via* the PTSD Checklist for Diagnostic and Statistical Manual of Mental Disorders, fifth edition (43). This questionnaire is

TABLE 1 | Background characteristics of the study groups.

	Holocaust survivors with probable PTSD dyads	Holocaust survivors without PTSD dyads	Comparison dyads	Comparison tests
n	43	161	137	
Parents				
Mean age (*SD*)	83.58[a](5.12)	82.63[a](5.84)	80.05[b](6.10)	$F(2,338) = 9.68$, $p < 0.0001$, $\eta^2 = 0.05$
Gender (%)				$\chi^2(2) = 1.80$, $p = 0.40$
Woman	72.1	62.1	67.2	
Man	27.9	37.9	32.8	
Education (%)				$\chi^2(4) = 32.99$, $p < 0.0001$, $\varphi_c = 0.31$
Below high school	67.4	44.4	25.2	
Full high school	16.3	24.4	21.5	
Above high school	16.3	31.3	53.3	
Marital status (%)				$\chi^2(8) = 11.24$, $p = 0.18$
Married	39.5	46.9	55.5	
Widowed	58.1	45.6	39.4	
Divorced	0.0	5.6	2.2	
Single	2.3	0.6	0.7	
Partner	0.0	1.3	2.2	
Mean self-rated economic status (*SD*)	3.07[a](0.70)	3.51[b](0.77)	3.63[b](0.86)	$F(2,335) = 8.03$, $p < 0.0001$, $\eta^2 = 0.04$
Offspring				
Mean age (*SD*)	56.20[a] (5.68)	55.06[a,b] (6.07)	53.50[b](5.57)	$F(2,338) = 4.56$, $p = 0.01$, $\eta^2 = 0.02$
Gender (%)				$\chi^2(2) = 0.63$, $p = 0.72$
Woman	67.4	62.1	65.7	
Man	32.6	37.9	34.3	
Education (%)				$\chi^2(4) = 1.80$, $p = 0.77$
Below high school	2.3	1.9	4.4	
Full high school	20.9	18.9	19.7	
Above high school	76.7	79.2	75.9	
Marital status (%)				$\chi^2(8) = 8.36$, $p = 0.39$
Married	83.7	84.7	85.3	
Widowed	4.7	0.6	2.9	
Divorced	9.3	11.5	5.9	
Single	0.0	1.9	2.9	
Partner	2.3	1.3	2.9	
Mean self-rated economic status (*SD*)	3.69(0.80)	3.84(0.80)	3.97(0.84)	$F(2,337) = 2.27$, $p = 0.10$

When the F test was significant, we performed a post hoc Bonferroni test to assess main effect differences. The superscript letters (a and b) represent means that significantly differ from each other in the post hoc tests (i.e., if one mean is marked with "a" and another mean is marked with "b," these two means are significantly different from each other).

a 20-item measure of PTSD symptoms as appearing in the Diagnostic and Statistical Manual of Mental Disorders, fifth edition (44). HS were instructed to refer to their experiences during the Holocaust, whereas comparison parents were instructed to refer to the most traumatic event that had happened to them. Most comparison parents referred to a sudden death of a close person (32.3%) or to a life-threatening illness or disability that happened to a close person (19.4%). Others referred to being diagnosed with a life-threatening illness (8.1%), undergoing (or being injured in) war, combat or terrorist attack (9.6%), surviving a severe accident (6.5%), being physically attacked (4.8%), or undergoing other life-threatening events (e.g., natural disaster, experiencing abuse, etc., 19.3%).

For each symptom, parents were asked to choose their response on a 5-point Likert scale from 1 (*not at all bothered*) to 5 (*extremely bothered*) when referring to the last month. The PTSD symptom score was the sum of ratings. Higher scores indicated higher levels of PTSD symptoms. The PTSD Checklist for Diagnostic and Statistical Manual of Mental Disorders, fifth edition was found to have excellent convergent and discriminant validity (45). The Hebrew version of the scale was previously used (6). Cronbach's α coefficient for this sample was 0.91. Probable PTSD was determined by a cut-off score of 33 or higher (cf. 45).

Perceived parental rearing behaviors. Offspring completed the Perceived Parental Rearing Behavior Questionnaire (46). The questionnaire includes 20 items examining perceived parenthood in four areas. The advantage of a self-report measure is that, frequently, the subjective experiences are more influential than the so-called objective reality (46). Offspring were instructed to refer to the parent who participated in the study. For each behavior, offspring were asked to choose their response on a 5-point Likert scale from 1 (*not at all*)

to 5 (*all the time*) when referring to how the parent behaved towards them during their childhood. The behavior score was the sum of ratings in each scale. The scales included role reversal (seven items; e.g., "I felt like a parent to my parent"), affection (seven items; e.g., "My parent showed me that s/he loved me"), punishing (three items; e.g., "My parent hit me"), and overinvolvement/protection (three items; e.g., "My parent was too involved in my life"). Higher scores indicated higher frequency for each of the behaviors. Cronbach's α coefficient was 0.71, 0.88, 0.66, and 0.70, for role reversal, affection, punishing, and overinvolvement/protection scale, respectively. The original questionnaire was developed in Hebrew.

Secondary traumatization. Offspring completed the modified Secondary Trauma Questionnaire (21). They rated the frequency in which they experienced 18 symptoms of distress, due to traumatic events experienced by their parent, using a scale ranging from 1 (*never or rarely*) to 5 (*very often*). Participants were asked to specifically refer to the parent who participated in the study. OHS were asked to relate to the Holocaust as the traumatic event, and comparisons were instructed to refer to the traumatic event reported by their parents (the students informed them of that event before they began to complete the questionnaire). The final score was based on the sum of answers. Higher scores reflect higher secondary traumatization. Cronbach's α was 0.91. Previous studies have used the Hebrew version of this measure [e.g., (29, 47)].

Depressive symptoms. Offspring completed the depression subscale derived from the 18-item Brief Symptom Inventory (BSI-18) (48). We computed the mean of six items rated on a scale ranging from 0 (*not at all*) to 4 (*very much*) with a Cronbach's α of 0.86. Previous studies have used the Hebrew version of this measure [e.g., (6)].

Successful aging. Offspring completed several indices of successful aging including chronic medical conditions, disability, somatic symptoms, and a global assessment of health (self-rated health).

Chronic medical conditions were assessed by a sum of 11 listed illnesses that participants reported to have been diagnosed with by a physician. The illnesses consisted of heart disease, high blood pressure, high cholesterol, stroke or cerebral vascular disease, diabetes or high blood sugar, chronic lung disease, such as chronic bronchitis or emphysema, asthma, arthritis (including osteoarthritis or rheumatism), osteoporosis, cancer or malignant tumor, and Parkinson's disease.

Disability was measured by asking respondents to rate difficulties in preforming five functional activities [adapted from (49)] including stooping, kneeling, or crouching, reaching or extending arms above shoulder level, pulling or pushing heavy objects, lifting or carrying heavy weights, and picking up a small coin from a table. Each activity was rated on a scale from 1 (*not difficult to perform at all*) to 4 (*extremely difficult to preform*). The final score was based on the average of answers. Higher scores reflect higher disability. Cronbach's α was 0.70. Previous studies have used the Hebrew version of this measure [e.g., (29)].

Somatic symptoms were assessed using the somatization subscale derived from the 18-item Brief Symptom Inventory (BSI-18) (48). We computed the mean of six items rated on a scale ranging from 0 (*not at all*) to 4 (*very much*) with a Cronbach's α of 0.76. Previous studies have used the Hebrew version of this measure [e.g., (6)].

Self-rated health was rated on a scale from 1 (*very good*) to 5 (*not good at all*) (50).

In order to compute the overall successful aging score, the four scores were standardized (medical conditions, disability, somatic symptoms, and the reverse-coded self-rated health score), and then, the standardized scores were averaged. Subsequently, the averaged standardized score was multiplied by −1, so that high scores will reflect greater successful aging [cf. (6, 51)].

Procedure

Undergraduate student from a yearly seminar were instructed to recruit eligible participants available in their surroundings. The seminar students were instructed how to approach the interviewees and respond to potential difficulties. This study was conducted across three yearly seminars, from January 2014 until April 2018. The seminar students requested participants to take part in a study, which aimed to examine how families cope with difficult life events. Participants read and signed an informed consent form, which also noted that the questionnaire included queries regarding aging, death, various difficult life events, and the Holocaust. Following that, participants (mostly offspring) accessed an online questionnaire *via* a link sent to them. The students interviewed participants (mostly parents) who could not complete the online questionnaire themselves. Participants were interviewed, predominantly in the urban areas around Haifa (12.8% of HS living in Israel), Tel Aviv (12.0%), and Jerusalem which (11.3%), areas with the highest HS prevalence in Israel[1] in their homes or other places convenient to them. The study received approval by an ethic review committee in Bar-Ilan University on November, 2014.

Data Analysis

Group differences in perceived parental rearing behaviors, secondary traumatization, depressive symptoms, and successful aging were assessed with a series of univariate analyses of covariance (ANCOVAs). As parental age and education level, as well as offspring age, significantly differed between the groups, these variables were controlled for. We also controlled for parental and offspring gender, as gender may potentially moderate intergenerational transmission (19).

The PROCESS macro (52) was applied to test the hypotheses regarding the serial mediation effects. The multicategorical independent variable (study groups) was coded into two dummy indicator variables, D_1 and D_2, denoting Holocaust exposure without PTSD and with probable PTSD, respectively, and leaving the comparisons as the reference group. To predict offspring successful aging, we used perceived parental rearing behavior (the ones found to significantly[1] differ between the groups), secondary traumatization, and depressive symptoms as three mediators, M_1, M_2, and M_3, respectively. Possible mediation

[1]According to reports by te Ministry of Social Affairs amd Social Services (2016).

paths were assessed in a serial mediation analysis using a bias-corrected bootstrap with 5,000 resamples. The serial mediation analysis controlled for all the abovementioned covariates.

RESULTS

Group Differences in Main Study Variables

Table 2 presents the results of the ANCOVAs comparing the groups on successful aging, perceived parental rearing behaviors, secondary traumatization, and depressive symptoms.

The groups significantly differed in successful aging, role reversal, secondary traumatization, and depressive symptoms. Bonferroni *post hoc* tests showed that OHS with or without parental PTSD had lower successful aging score than comparisons. OHS with parental PTSD also reported higher role reversal, secondary traumatization, and depressive symptoms compared with both other groups. The groups did not differ in perceived parental affection, punishing, or overinvolvement.

Supplementary analyses assessed the effect of paternal vs. maternal PTSD. OHS with parental PTSD were thus divided into two subgroups: those with paternal (n = 12) and maternal PTSD (n = 31). In ANCOVAs comparing the four groups, i.e, OHS with paternal PTSD, maternal PTSD, OHS without parental PTSD, and comparisons, we controlled for all abovementioned covariates except for parental gender. The groups differed in successful aging, $F(3,326) = 6.00$, $p = 0.001$, $\eta^2 = 0.052$. Bonferroni post-hoc tests showed that all three OHS groups (with paternal or maternal PTSD and without parental PTSD) reported lower successful aging score than comparisons. The groups further differed in role reversal, $F(3,322) = 4.81$, $p = 0.003$, $\eta^2 = 0.043$, and secondary traumatization, $F(3,318) = 6.40$, $p < 0.0001$, $\eta^2 = 0.057$. Both OHS with paternal or maternal PTSD reported higher role reversal and secondary traumatization than comparisons. The groups did not differ in perceived parental affection, punishing, or overinvolvement ($F < 1.10$). Finally, the groups differed in depressive symptoms, $F(3,321) = 4.64$, $p = 0.003$, $\eta^2 = 0.042$. OHS with maternal PTSD reported higher depressive symptoms than comparisons.

Serial Mediation Analysis Predicting Offspring Successful Aging

Table 3 presents the findings from the serial mediation analyses (adjusted for covariates). Both parental exposure to the Holocaust (D_1) and parental PTSD (D_2) predicted lower successful aging score among offspring (Y). As both dummy variables were significant, the group difference reflected lower successful aging among OHS (both with and without probable PTSD) relative to comparisons. Parental PTSD explained 8% of the variance in successful aging. Moreover, parental PTSD (D_2) predicted higher role reversal (M_1). Parental PTSD explained 8% of the variance in role reversal. When both study group variables (D_1 and D_2) and role reversal (M_1) were included as predictors of offspring secondary traumatization (M_2), both parental PTSD (D_2) and role reversal predicted higher secondary traumatization among offspring (M_2) (explaining 24% of the variance in secondary traumatization). In addition, when both study group variables (D_1 and D_2), role reversal (M_1), and secondary traumatization (M_2) were included as predictors of offspring depressive symptoms (M_3), both role reversal and secondary traumatization predicted higher depressive symptoms among offspring (M_3) (explaining 34% of the variance in depressive symptoms). Finally, when study group variables (D_1 and D_2) alongside the three mediators—role reversal (M_1), offspring secondary traumatization (M_2), and offspring depressive symptoms (M_3)—were included as predictors of offspring successful aging (Y), parental exposure to the Holocaust (D_1), and offspring depressive symptoms (M_3) significantly predicted less successful aging (Y) (explaining 34% of the variance in successful aging).

The bootstrap analyses estimating the indirect effects of study group on offspring successful aging found three significant indirect effects. One indirect effect connected parental PTSD to less successful aging among offspring through a) higher perceived role reversal, which was then related to b) higher depressive symptoms [indirect effect = −0.03, 95% lower limit confidence interval (LLCI) = −0.08, 95% upper limit confidence interval (ULCI) = −0.005]. A second indirect

TABLE 2 | Results of univariate analyses of covariance comparing groups on successful aging, perceived parental rearing behaviors, secondary traumatization, and depressive symptoms.

Variable	OHS with parental PTSD	OHS without parental PTSD	Comparisons without parental PTSD			
	M (*SD*)	*M* (*SD*)	*M* (*SD*)	*F*	*p*	η^2
Successful aging	–0.26 (0.92)[a]	–0.09 (0.70)[a]	0.20 (0.56)[b]	8.80	<0.0001	0.051
Role reversal	2.59 (0.84)[a]	2.20 (0.73)[b]	2.06 (0.74)[b]	6.83	0.001	0.041
Affection	3.21 (1.02)	3.10 (1.08)	3.12 (1.17)	0.16	0.849	0.001
Punishing	2.10 (0.74)	1.91 (0.69)	1.90 (0.74)	1.21	0.299	0.007
Over-involvement	3.54 (0.77)	3.33 (1.00)	3.27 (0.95)	1.17	0.309	0.007
Secondary traumatization	32.37 (11.22)[a]	26.96 (9.90)[b]	24.54 (8.62)[b]	9.32	<0.0001	0.055
Depressive symptoms	1.61 (0.77)[a]	1.35 (0.57)[b]	1.22 (0.46)[b]	6.98	0.001	0.042

n is 43, 161, and 137 for OHS with parental PTSD, OHS without parental PTSD, and comparisons, respectively. Means are adjusted for parental and offspring age, parental and offspring gender, parental education level, and self-rated economic status. Means that do not share letters significantly differ from each other in a post-hoc Bonferroni test.

TABLE 3 | Estimated unstandardized coefficients (coeff.) for the effect of study group (D_1 *and* D_2) on offspring successful aging (Y), mediated by role reversal (M_1), secondary traumatization (M_2), and depressive symptoms (M_3).

	Outcome									
	Perceived role reversal (M_1)		Offspring secondary traumatization (M_2)		Offspring depressive symptoms (M_3)		Offspring successful aging (Y)			
							Mediated		Unmediated	
	Coeff.	*p*	Coeff.	*p*	Coeff.	*p*	Coeff.	*p*	Coeff.	*p*
Predictors										
Holocaust survivors without PTSD (D_1)	0.11	0.22	1.93	0.08	0.05	0.39	–0.19	0.009	–0.28	0.0009
Holocaust survivors with probable PTSD (D_2)	0.49	0.0006	5.27	0.002	0.11	0.20	-0.17	0.13	–0.45	0.0005
Perceived role reversal (M_1)	—	—	5.36	<.0001	0.12	0.003	–0.05	0.35	—	—
Offspring secondary traumatization (M_2)	—	—	—	—	0.03	<0.0001	–0.005	0.23	—	—
Offspring depressive symptoms (M_3)	—	—	—	—	—	—	–0.56	<0.0001	—	—
R^2	0.08		0.24		0.34		0.34		0.08	
F(df)	3.23		11.11		16.37		14.37		3.64	
	(8,312)		(9,311)		(10,310)		(11,309)		(8,312)	
P	0.001		<0.0001		<0.0001		<0.0001		0.0005	

Analyses controlled for parent's and offspring age, parental education level, and self-rated economic status, as well as parent's and offspring gender.

effect connected parental PTSD to less successful aging among offspring through a) higher secondary traumatization, which was then related to b) higher depressive symptoms (indirect effect = −0.08, 95%LLCI = −0.17, 95%ULCI = −0.02). Finally, a third indirect effect connected parental PTSD to increased role reversal that was related to higher secondary traumatization among offspring, which was then related to higher depressive symptoms among offspring, which was finally related to less successful aging among offspring (indirect effect = −0.04, 95%LLCI = −0.08, 95%ULCI = −0.01).

Figure 1 presents the indirect effects connecting parental PTSD to offspring successful aging.

DISCUSSION

This study has shown two main results. First, it revealed that the aftermath of parental PTSD lingers and is associated with successful aging of the middle-aged OHS, thereby suggesting intergenerational trauma transmission. Second, the current results support a pathway, which potentially reflects a putative underlying complex mechanism *via* which the aftermath of parental trauma lingers on more than seven decades later to affect OHS. Namely, parental PTSD can lead to a parent–child role reversal, which in turn may exacerbate secondary traumatization leading to OHS increased depressive symptoms,

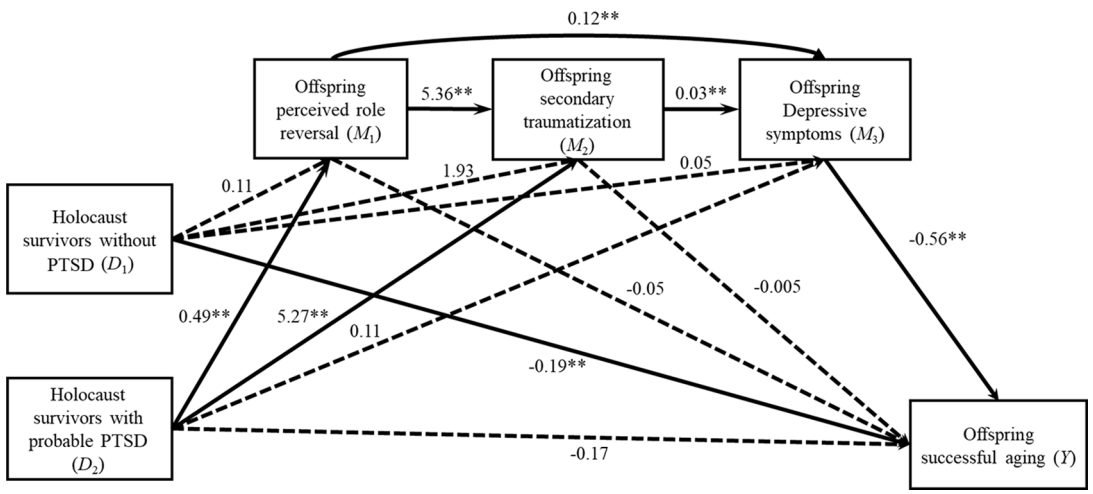

FIGURE 1 | Offspring perception of role reversal, secondary traumatization, and depressive symptoms mediate the relationship between parental PTSD and offspring successful aging (controlled for parental and offspring age, parental education level, and self-rated economic status, and parent's and offspring gender). Values refer to estimated unstandardized coefficients from the first four regression equations presented in **Table 3**. $^{**}p < 0.01$.

which in turn impairs successful aging. Each of these findings is discussed below.

The first finding suggests intergeneration transmission, echoing earlier scholars who called on reshifting the focus from asking—if intergenerational transmission of Holocaust trauma exists—to the question of, under what conditions does intergenerational transmission exist (8, 16)? The current study shows that it exists, at least when parents had PTSD (17, 18). This finding can be appended to those findings, which found effects of intergenerational transmission, at least under some conditions. As it seems that effects on offspring aging were not related to parental trauma exposure per se, but rather only to parental PTSD—these results as shown below (indirect pathway) seem able to resolve some of the aforementioned questions about the underlying mechanisms involved (8).

To the best of our knowledge, only one single paper has previously substantiated the OHS successful aging–parental PTSD link (6). Earlier works did not typically examine physical health among OHS (for exceptions, see 13–14, 15, 53). Even in those exceptions, parental PTSD was not addressed. Although lower health measures were obtained in OHS (with HS mothers) (13), such data emerged from a sample which may have been biased. Shrira et al. (14) revealed in a random sample that examined OHS vis-à-vis comparisons that OHS (especially OHS with two survivor parents) reported more medical issues, higher medication use, and increased physical symptoms. In other studies that applied nonselect samples, OHS were the same as comparisons in their physical morbidity (15, 53); note, however, that in both these studies, the OHS were relatively young.

The Story of the Indirect Pathway

The main and critical finding, which was beyond the more direct track, suggests the underlying mechanisms linking parental PTSD and offspring aging. The mediation pathway tells a complex story that addresses the underling mechanisms involved in intergenerational transmission of trauma to OHS. These mechanisms can be seen as putative claims that may resolve Kellermann's (8) question concerning how such trauma transmits.

The current results validated the entire pathway beginning from parental PTSD proceeding to parent–child role reversal, continuing to offspring secondary traumatization that potentially catalyze offspring depressive symptoms that finally may affect offspring aging. Although each individual link was established as reviewed in the introduction, herein, we address the integrative story. We do this with the aid of a fictional character called Sophia, who personifies a representative case of OHS whose parents suffered from PTSD. One of the first things Sophia said when asked to describe herself, was "that I would do anything to alleviate the suffering of my Mom. If anyone, and I mean anyone would hurt her, they will face my wrath."

Sophia's mother was in Auschwitz and had a tattooed number. She had PTSD and was frequently hypervigilant; thinking that Sophia was in danger, she also avoided Holocaust reminders such as going to a Holocaust museum or taking showers in a public place (e.g., beach), her arousal level when reminded about such issues rose dramatically, and as shown below, she also displayed negative alterations in cognitions. When Sophia was a baby, her mother was not always present emotionally; she felt her mother was "there"—thinking about her parents' sibling who perished. She remembers her younger brother (Muli, named after her Father's brother Shmuel) alternately being hugged very tight by her mother at times (as if to say I won't let anything happen to you, literally afraid for his life, or perhaps her mother needed assurance that he was real) while at other times receiving less tactile affection. It was as if her mother expressed warmth but was hesitant/ambivalence towards hugging, perhaps being afraid to get too close, because it will bring only pain; it is a vulnerability to love. Sophia thinks that it was the same for her.

Incidentally, Sophia's name was twist of a Yiddish name, named after her mother's sister who perished. Sophia remembers from a very early age her mother saying that she Sophia is her mother's victory over the Nazis. Sophia also remembers from a very young age her mother listening to a radio program for tracing lost relatives from the Holocaust, which was broadcasted every afternoon, where people called in giving names and places to ask if anyone knew what happened to them. She remembers the tension at home during this program being so "thick" along with the eerie "quiet." Often, her mother after this program would be reclusive and withdrawn.

Her mother always worried and never believed anything a bureaucrat would say. Thus, for example, if the official at social security asked her to bring one document, she would literally panic and worry, looking for all documents that might be related. Sophia would calm her down and explain that she needed only the requested document. She would also often go with her mother on errands, where her presence as a reassuring figure, to calm her frantic mother down, was often needed.

One of Sophia's earliest memories was to go into her father's room when he was having a nightmare, screaming and shouting in Yiddish, a language she did not fully speak. In the beginning, she would sit there shaking. After a while, she felt it was her job to sit there, calm him down by either making soothing noises, stroking his arm, or bringing her father a cup of water. Incidentally, she felt that if she would rub off his tattooed number, she could make his pain disappear. When neighbors complained about the noise her father made at nights, they would come to her. Her father, a biochemist by training, worked in construction, rarely spoke, and in some ways much less dominant than her mother. Yet, there was much strength in his stoic but quiet demeanor.

Her mother, who worked in a bakery, tried her best to give her treats. Fridays were special, as Sophia would come after school to work in the bakery with her mother. At the age of 6, Sophia remembers a German tourist entering the bakery. Her mother literally lost it. She started screaming, that he should leave, people started stopping and asking what was wrong. A small-to-medium crowd of tens of people had already gathered. Her mother speaking German and screaming at this person, that he already did enough, she was thrusting her arm out to him with the tattooed number. At the end, the police arrived on the scene.

For Sophia, to obtain permission to go on a school field trip was no trivial manner. This is also an issue for her as a mom when her own child wants to go on a trip. Likewise, her staying out late at night as a teenager was often a point of profound strife. When

a boy in her high school was killed in a terror attack, her mother who found her crying, said "crying will help bring him back?"

Indeed, it is very clear that Sophia's parents loved her very much, and raised a family providing for them to their best ability. Yet, as they were suffering from PTSD, they may have been reliving the worst nightmares of the past and thus their diminished presence in the present. From Sophia's case, one can obviously see that HS with PTSD, who may be living in the past, especially after being exposed to an infinite number of trauma reminders [cf. (54)], may be less available to care for the needs of their children leading to their greater susceptibility to developing psychological distress (55). A parent suffering from PTSD after experiencing massive trauma at a much younger age may not find adaptive ways to cope (30). Coping with such PTSD may demand many resources (56). When parental resources are lacking, as clearly in Sophia's parents' case, it may be conducive in creating a parent–child role reversal, as children sacrifice their own needs in order to try and satisfy the needs of their parents (57). Posttraumatic HS may also have themselves been robbed of forming secure attachment as they focused on survival during these formative years (30). Such a situation may lead to OHS becoming a "parent" to supply that protection and unconditional love towards their parents, who were themselves robbed.

One example driving this parent–child role reversal may be the recurrent thoughts experienced by parents. For example, a HS parent who experiences nightmares may be calmed down by the child who comes in every night, sits with the parent, and may bring them a cup of water. Other examples may relate to avoidance judgments the parents make (e.g., "Do not go on a field trip"), whereby the OHS may assume the role of psychotherapist, educator, parent—facilitating their "fitting in."

Taking the above into consideration renders likely the probability of the "parental child" to experience more secondary traumatization. This is true not only because the parent exhibits PTSD (37), but rather also because the child has fewer resources and more difficulty with emotional regulation. Instead of being able to reframe, such persons may opt for avoidance of negative stimuli; while this may temporarily alleviate some pain, it will exacerbate the situation. This in turn may expedite the downhill spiraling of given situations, such as when being reminded of parental trauma, OHS might prefer a lower type of emotional regulation e.g.., avoidance. For example, when confronted with any reminder of parental PTSD (58), or any trauma reminder (54), e.g., seeing a child on television who wakes up from nightmares, such avoidance may in turn strengthen their levels of secondary traumatization.

Having elevated secondary traumatization would likely increase risk for developing depression (59). Often prolonged or chronic secondary traumatization is linked with depression (60). In addition, being depressed, especially as one ages, puts one in a frame of mind of a negative schema (Sophia as a mom being hesitant to let her own children go on a field trip), whereby it is likely that one will focus on losses as opposed to gains. This is important, as a balanced and adapted approach to losses and gains comprises an important concomitant of successful aging [e.g., (61)]. Accordingly, depression is associated with multiple adverse physical health outcomes (62). Therefore, similarly to the way depression mediates the effects of PTSD on health behaviors (e.g., physical inactivity and medication nonadherence) and health [cf. (62)], it may well mediate the effect of secondary traumatization on health.

Hitherto through the conglomerated persona of Sophia, we have tied the results with detailed description of what can transpire in some HS families. Still, it should be noted that Sophia's case should not be considered as typical of all OHS. Indeed, most OHS function well to the same degree as comparisons (8, 10). Previous works (16), as well as the current findings, seem to suggest that specific characteristics such as parental PTSD is what enabled the process of intergenerational transmission.

Limitations and Future Studies

These data should be examined in context of the following limitations. First, we employed a convenience sample which was biased towards academic education and elevated socioeconomic status in a cross-sectional design. Yet, such a sample was also advantageous. Namely, the current study which in contrast to previous works did not specifically select participants from Holocaust organizations, thus likely leading to a less biased sample where obtaining effects is more difficult (10, 64). Given the cross-sectional design, we apply caution regarding causality; at the very most, the significant mediated pathway suggests a possible mechanism that still requires longitudinal verification. Moreover, the sample may not have been large enough to enable clear comparisons of paternal and maternal PTSD. In principal, we also found it difficult to collect data from OHS whose both parents are alive and sufficiently healthy to rate their PTSD levels. Hence, due to this limitation, we could not examine the interaction between paternal and maternal PTSD. Previous studies show that maternal exposure (13) or maternal PTSD (19) may have stronger effects on offspring, whereas other studies found paternal effects as well (23). This issue should be further investigated in the context of offspring successful aging with larger groups of OHS whose Holocaust survivor parents are suffering from Holocaust related PTSD Fourth, our measures of parental PTSD and successful aging were obtained *via* self-report while the interviewers were seminar students. Future studies should include professional interviewers and use a psychiatric assessment of parental PTSD. Other measures, such as biological indices of offspring physical health, which can further increase clarification of result interpretation, were also not included.

Practical Implications

These data indicate the importance of an interdisciplinary approach. Namely, there might be several underlying mechanisms involved in subsuming the link between parental PTSD and offspring' successful aging. These processes may be instrumental both in preventive and reactive interventions aimed to increase OHS successful aging. As noted above, the model enables several interventions, each geared at a different model phase, for example, psychotherapy aimed at alleviating the parental child syndrome, or trauma therapy that may reduce secondary traumatization, or therapies designed for depression which may relieve depression symptom levels. OHS successful aging may be further enhanced through preventive programs that may include focusing on specific OHS groups who

may be at higher risk for late-life physical health impairments, such as those with parent–child role reversal, high levels of secondary traumatization, and those with elevated depression symptoms. Applying such a focused approach may enable the developing of a campaign to highlight the value of psychosocial interventions as well as preventive activities (e.g., exercise, performing common screening tests) (64). Moreover, more reactive interventions can address successful aging issues and focus on negative aging perceptions, especially in light of data demonstrating that favorable age perceptions are beneficial to future functioning (65).

DATA AVAILABILITY STATEMENT

The datasets generated for this study are available on request to the corresponding author.

ETHICS STATEMENT

The studies involving human participants were reviewed and approved by Bar Ilan Ethics Committee. The patients/participants provided their written informed consent to participate in this study.

AUTHOR CONTRIBUTIONS

Both authors took part in planning the theoretical and conceptual basis for the study. YH wrote the first draft of the introduction and discussion. AS performed the statistical analyses and wrote the first draft of the results. Both authors took part in critically reviewing and editing the manuscript.

REFERENCES

1. Iecovich E, Carmel S. Health and functional status and utilization of health care services among holocaust survivors and their counterparts in Israel. *Arch Gerontol Geriat* (2010) 51:304–8. doi: 10.1016/j.archger.2010.01.005
2. Keinan-Boker L. Increased cancer incidence in Holocaust survivors and the implications for survivors of other extreme events. *Expert Rev Anticancer Ther* (2018) 18:1059–62. doi: 10.1080/14737140.2018.1521274
3. Zamstein O, Biderman A, Sherf M, David RB, Dreiher J. Cardiovascular morbidity and risk factors in Holocaust survivors in Israel. *J Am Geriatr Soc* (2018) 66:1684–91. doi: 10.1111/jgs.15461
4. Barel E, Van IJzendoorn MH, Sagi-Schwartz A, Bakermans-Kranenburg MJ. Surviving the Holocaust: a meta-analysis of the long-term sequelae of a genocide. *Psychol Bull* (2010) 136:677–98. doi: 10.1037/a0020339
5. Steel Z, Chey T, Silove D, Marnane C, Bryant RA, Van Ommeren M. Association of torture and other potentially traumatic events with mental health outcomes among populations exposed to mass conflict and displacement: a systematic review and meta-analysis. *JAMA* (2009) 302:537–49. doi: 10.1016/j.jpsychires.2008.01.002
6. Shrira A, Ayalon L, Bensimon M, Bodner E, Rosenbloom T, Yadid Y. Parental posttraumatic stress disorder symptoms is related to successful aging in offspring of Holocaust survivors. *Front Psychol* (2017) 8:1099. doi: 10.1037/a0020608
7. Danieli Y. *International handbook of multigenerational legacies of trauma*. New York, NY: Plenum Press (1998). doi: 10.1007/978-1-4757-5567-1
8. Kellermann NPF. *Holocaust trauma: psychological effects and treatment*. New York: iUniverse (2009).
9. Shmotkin D, Shrira A, Goldberg SC, Palgi Y. Resilience and vulnerability among aging Holocaust survivors and their families: an intergenerational overview. *J Intergener Relatsh* (2011) 9:7–21. doi: 10.1080/13607863.2015.1013921
10. Van IJzendoorn MH, Bakermans-Kranenburg MJ, and Sagi-Schwartz A. Are children of Holocaust survivors less well-adapted? A meta-analytic investigation of secondary traumatization. *J Trauma Stress* (2003) 16:459–69. doi: 10.1017/S0954579401003170
11. Baider L, Goldzweig G, Ever-Hadani P, Peretz T. Breast cancer and psychological distress: mothers' and daughters' traumatic experiences. *Support Care Cancer* (2008) 16:407–14. doi: 10.1007/s00520-007-0320-1
12. Lindert J, Knobler HY, Kawachi I, Bain PA, Abramowitz MZ, McKee C, et al. Psychopathology of children of genocide survivors: a systematic review on the impact of genocide on their children's psychopathology from five countries. *Int J Epidemiol* (2017) 46:246–57. doi: 10.1093/ije/dyw161
13. Flory JD, Bierer LM, Yehuda R. Maternal exposure to the Holocaust and health complaints in offspring. *Dis Markers* (2011) 30:133–9. doi: 10.1155/2011/250470
14. Shrira A, Palgi Y, Ben-Ezra M, Shmotkin D. Transgenerational effects of trauma in midlife: evidence for resilience and vulnerability in offspring of Holocaust survivors. *Psychol Trauma* (2011) 3:394–402.
15. Levav I, Levinson D, Radomislensky I, Shemesh AA, Kohn R. Psychopathology and other health dimensions among the offspring of Holocaust survivors: results from the Israel National Health Survey. *Isr J Psychiatry Relat Sci* (2007) 44:144–51.
16. Danieli Y, Norris FH, Engdahl B. A question of who, not if: psychological disorders in Holocaust survivors' children. *Psychol Trauma* (2017) 9:98–106. doi: 10.1037/tra0000192
17. Lambert JE, Holzer J, Hasbun A. Association between parents' PTSD severity and children's psychological distress: a meta-analysis. *J Trauma Stress* (2014) 27:9–17. doi: 10.1002/jts.21891
18. Leen-Feldner EW, Feldner MT, Knapp A, Bunaciu L, Blumenthal H, Amstadter AB. Offspring psychological and biological correlates of parental posttraumatic stress: review of the literature and research agenda. *Clin Psychol Rev* (2013) 33:1106–33. doi: 10.1016/j.cpr.2013.09.001
19. Yehuda R, Bell A, Bierer LM, Schmeidler J. Maternal, not paternal, PTSD is related to increased risk for PTSD in offspring of Holocaust survivors. *J Psychiatr Res* (2008) 42:1104–11. doi: 10.1016/j.jpsychires.2008.01.002
20. Figley CR. *Compassion fatigue*. New York, NY: Brunner/Mazel (1995).
21. Motta RW, Hafeez S, Sciancalepore R, Diaz AB. Discriminant validation of the Modified Secondary Trauma Questionnaire. *J Psychother Indepen Pract* (2001) 24:17–24. doi: 10.1300/J288v02n04_02
22. Giladi L, Bell TS. Protective factors for intergenerational transmission of trauma among second and third generation Holocaust survivors. *Psychol Trauma* (2013) 5:384–91. doi: 10.1037/a0028455
23. Letzter-Pouw S, Shrira A, Ben-Ezra M, Palgi Y. Trauma transmission through perceived parental burden among Holocaust survivors' offspring and grandchildren. *Psychol Trauma* (2014) 6:420–9. doi: 10.1037/a0033741
24. Lohr JB, Palmer BW, Eidt CA, Aailaboyina S, Mausbach BT, Wolkowitz OM, et al. Is post-traumatic stress disorder associated with premature senescence? A review of the literature. *Am J Geriatr Psychiatry.* (2015) 23:709–25. doi: 10.1016/j.jagp.2015.04.001
25. Pacella ML, Hruska B, Delahanty DL. The physical health consequences of PTSD and PTSD symptoms: a meta-analytic review. *J Anxiety Disord* (2013) 27:33–46. doi: 10.1016/j.janxdis.2012.08.004
26. Solomon Z, Greene T, Ein-Dor T, Zerach G, Benyamini Y, Ohry A. The long-term implications of war captivity for mortality and health. *J Behav Med* (2014) 37:849–59. doi: 10.1016/j.dr.2017.08.002
27. Avidor S, Benyamini Y, Solomon Z. Subjective age and health in later life: the role of posttraumatic symptoms. *J Gerontol B Psychol Sci Soc Sci* (2016) 71:415–24. doi: 10.1093/geronb/gbu150
28. Wiseman H, Barber JP, Raz A, Yam I, Foltz C, Livne-Snir S. Parental communication of Holocaust experiences and interpersonal patterns in offspring of Holocaust survivors. *Int J Behav Dev* (2002) 26:371–81. doi: 10.1080/01650250143000346

29. Shrira A. Perceptions of aging among middle-aged offspring of traumatized parents: the effects of parental Holocaust-related communication and secondary traumatization. *Aging Ment Health* (2016) 20:65–73. doi: 10.1080/13607863.2018.1448970
30. Bar-On D, Eland J, Kleber RJ, Krell R, Moore Y, Sagi A, et al. Multigenerational perspective on coping with the Holocaust experience: an attachment perspective for understanding the developmental sequelae of trauma across generations. *Int J Behav Dev* (1998) 22:315–38. doi: 10.1080/016502598384397
31. Brom D, Kfir R, Dasberg H. A controlled double-blind study on children of Holocaust survivors. *Isr J Psychiatr Relat Sci* (2001) 38:47–57.
32. Yehuda R, Halligan SL, Grossman R. Childhood trauma and risk for PTSD: relationship to intergenerational effects of trauma, parental PTSD, and cortisol excretion. *Dev Psychopathol* (2001) 13:733–53. doi: 10.1017/s0954579401003170
33. George C, Solomon J. The caregiving system: a behavioral systems approach to parenting. In: Cassidy, J, and Shaver, PR, editors. *Handbook of attachment: theory, research, and clinical applications*. New York, NY: The Guilford Press (2008). p. 833–56.
34. Shrira A, Menashe R, Bensimon M. Filial anxiety and sense of obligation among offspring of Holocaust survivors. *Aging Ment Health* (2019) 23:752–61. doi: 10.1001/jama.2009.1132
35. Flory JD, Yehuda R. Comorbidity between posttraumatic stress disorder and major depressive disorder: alternative explanations and treatment considerations. *Dialogues Clin Neurosci* (2015) 17:141–50.
36. Bride BE, Robinson MM, Yegidis B, Figley CR. Development and validation of the secondary traumatic stress scale. *Res Soc Work Pract* (2004) 14:27–35. doi: 10.1177/1049731503254106
37. Baranowsky AB, Young M, Johnson-Douglas S, Williams-Keeler L, and McCarrey M. PTSD transmission: A review of secondary traumatization in Holocaust survivor families. *Can Psychol* (1998) 39:247-256. doi: 10.1037/h0086816
38. Shenkman G, Shrira A, Ifrah K, Shmotkin D. Interpersonal vulnerability among offspring of Holocaust survivors gay men and its association with depressive symptoms and life satisfaction. *Psychiatry Res* (2018) 259:89–94. doi: 10.1080/15350770.2011.544202
39. Rowe JW, Kahn RL. Human aging: usual and successful. *Science* (1987) 237:143–9. doi: 10.1126/science.3299702
40. Martin P, Kelly N, Kahana B, Kahana E, Willcox BJ, Willcox DC, et al. Defining successful aging: a tangible or elusive concept? *Gerontologist* (2015) 55:14–25. doi: 10.1093/geront/gnu044
41. Kok AA, Aartsen MJ, Deeg DJ, Huisman M. Capturing the diversity of successful aging: an operational definition based on 16-year trajectories of functioning. *Gerontologist* (2017) 57:240–51. doi: 10.1093/geront/gnv127
42. Pruchno RA, Wilson-Genderson M. A longitudinal examination of the effects of early influences and midlife characteristics on successful aging. *J Gerontol B Psychol Sci Soc Sci* (2015) 70:850–9. doi: 10.1093/geronb/gbu046
43. Weathers FW, Litz BT, Keane TM, Palmieri PA, Marx BP, Schnurr PP. *The PTSD Checklist for DSM-5 (PCL-5)*, Scale available from the National Center for PTSD at www.ptsd.va.gov. (2013) doi: 10.1111/jgs.15461
44. American Psychiatric Association. *Diagnostic and Statistical Manual of Mental Disorders (DSM-5®)*. Arlington, VA: American Psychiatric Pub. (2013). doi: 10.1176/appi.books.9780890425596
45. Bovin MJ, Marx BP, Weathers FW, Gallagher MW, Rodriguez P, Schnurr PP, et al. Psychometric properties of the PTSD checklist for diagnostic and statistical manual of mental disorders—fifth edition (PCL-5) in veterans. *Psychol Assess* (2016) 28:1379–91. doi: 10.1037/pas0000254
46. Kellermann NPF. Perceived parental rearing behavior in children of Holocaust survivors. *Isr. J. Psychiatr. Relat. Sci.* (2001) 38:58–68.
47. Dekel R, Hantman S, Ginzburg K, Solomon Z. The cost of caring? Social workers in hospitals confront ongoing terrorism. *Br J Soc Work* (2007) 37:1247–61. doi: 10.1093/bjsw/bcl081
48. Derogates LR. *Brief Symptom Inventory (BSI)-18. Administration, scoring and procedures manual*. Minneapolis, MN: NCS Pearson (2001).
49. Nagi SZ. An epidemiology of disability among adults in the United States. *Milbank Mem Fund Q Health Soc* (1976) 54:439–67. doi: 10.2307/3349677
50. Benyamini Y, Blumstein T, Lusky A, Modan B. Gender differences in the self-rated health–mortality association: is it poor self-rated health that predicts mortality or excellent self-rated health that predicts survival? *Gerontologist* (2003) 43:396–405. doi: 10.1093/geront/43.3.396
51. Bodner E, Hoffman Y, Palgi Y, Shrira A. A light in a sea of darkness: the moderating role of emotional complexity in the PTSD symptoms-successful aging association. *Aging Ment Health* (2018) 22:826–33. doi: 10.1080/13607863.2017.1317332
52. Hayes AF. *An Introduction to mediation, moderation, and conditional process analysis: a regression-based approach*. New York, NY: Guilford Press (2013).
53. Fridman A, Bakermans-Kranenburg MJ, Sagi-Schwartz A, Van IJzendoorn MH. Coping in old age with extreme childhood trauma: aging Holocaust survivors and their offspring facing new challenges. *Aging Ment Health* (2011) 15:232–42. doi: 10.1080/13607863.2010.505232
54. Hoffman Y, Shrira A, Bodner E, Ben-Ezra M. Prime and prejudice: The effect of priming context and prejudicial attitudes on post-traumatic stress disorder symptoms following immigrant violence. *Psychiatry Res* (2017) 254:224–31. doi: 10.1016/j.psychres.2017.04.061
55. Fonagy P. The transgenerational transmission of holocaust trauma. *Attach Hum Dev* (1999) 1:92–114. doi: 10.1080/14616739900134041
56. Gerhart JI, Canetti D, Hobfoll SE. Traumatic stress in overview: Definition, context, scope, and long-term outcomes. In: Cherry, KE, editor. *Traumatic stress and long-term recovery: coping with disasters and other negative life events*. New York, NY: Springer (2015). p. 3–24. doi: 10.1007/978-3-319-18866-9_1
57. Alexander PC. Parent–child role reversal: development of a measure and test of an attachment theory model. *J Syst Ther* (2003) 22:31–44. doi: 10.1521/jsyt.22.2.31.23349
58. Shrira A. Transmitting the sum of all fears: Iranian nuclear threat salience among offspring of Holocaust survivors. *Psychol Trauma* (2015) 7:364–71. doi: 10.3389/fpsyg.2017.01099
59. Baranowsky AB, Young M, Johnson-Douglas S, Williams-Keeler L, McCarrey M. PTSD transmission: a review of secondary traumatization in Holocaust survivor families. Can Psychol (1998) 39:247–56. doi: 10.1037/h0086816
60. Schick M, Morina N, Klaghofer R, Schnyder U, Müller J. Trauma, mental health, and intergenerational associations in Kosovar Families 11 years after the war. *Eur J Psychotraumatol* (2013) 4:21060. doi: 10.1037/10723-010
61. Kornadt AE, Rothermund K. Preparation for old age in different life domains: dimensions and age differences. *Int J Behav Dev* (2014) 38:228–38. doi: 10.1177/0165025413512065
62. Blazer DG. Depression in late life: review and commentary. *J Gerontol A Psychol Bio Sci Med Sci* (2003) 58:M249–65. doi: 10.1093/gerona/58.3.M249
63. Schnurr PP, Green BL. Understanding relationships among trauma, posttraumatic stress disorder, and health outcomes. In: Schnurr, PP, and Green, BL, editors. *Trauma and health: physical health consequences of exposure to extreme stress*. Washington, DC: American Psychological Association (2004). p. 247–75. doi: 10.1037//0022-3514.75.1.141
64. Shmotkin D, Lomranz J. Subjective well-being among Holocaust survivors: an examination of overlooked differentiations. *J Pers Soc Psychol* (1998) 75:141–55. doi: 10.1037/tra0000029
65. Keinan-Boker L. The mothers have eaten unripe grapes and the children's teeth are set on edge: the potential inter-generational effects of the Holocaust on chronic morbidity in Holocaust survivors' offspring. *Isr J Health Policy Res* (2014) 3:11. doi: 10.1186/2045-4015-3-11
66. Wurm S, Diehl M, Kornadt AE, Westerhof GJ, Wahl HW. How do views on aging affect health outcomes in adulthood and late life? Explanations for an established connection. *Dev Rev* (2017) 46:27–43. doi: 10.1016/j.dr.2017.08.002

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The Long-Term Mental Health Consequences of Torture, Loss, and Insecurity: A Qualitative Study Among Survivors of Armed Conflict in the Dang District of Nepal

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Background and Objectives: Nepal has witnessed several periods of organized violence since its beginnings as a sovereign nation. Most recently, during the decade-long Maoist Conflict (1996–2006), armed forces used excessive violence, including torture, resulting in deaths and disappearances. Moreover, there is widespread gender-, ethnic- and caste-based discrimination, and grossly unequal distribution of wealth in the country. While the immediate mental health effects of the conflict are well studied, less is known about the long-term effects of the conflict. This article sets out to explain how Nepalese survivors of violence perceive their wellbeing and mental health, search for help and construct their health care pathways and therapeutic itineraries. The aim is to provide a better understanding of local explanatory models and healthcare behaviors.

Methods: Semi-structured interviews were carried out with 25 people (14 men, 11 women) aged 30 to 65 in Dang district in 2013. To elicit illness narratives, a translated and culturally adapted version of the McGill Illness Narrative Interview (MINI) was used. Additionally, participants were interviewed about their war experiences and present-day economic and social situations. The transcripts were coded using deductive and inductive approaches and analyzed through thematic analysis.

Results: The study provides insight into temporal narratives of illness experience and explanatory modules. Symptoms were found to be widespread and varied, and were not solely attributed to violent experiences and memories, but also to everyday stressors related to survivors' economic, social, and familial situations. In terms of help- and health-seeking behavior it was found that participants resorted to various coping strategies such as social activities, avoidance, withdrawal, and substance use. Many participants had received biomedical treatment for their psychosocial problems from doctors and specialists working in public and private sector clinics and hospitals as well as different forms of traditional healing.

Conclusions: These results shed light on the long-term impact of the Nepalese conflict on survivors of extreme violence, highlighting local explanatory models and help- and

health-seeking behaviors. These findings inspire recommendations for the development of context specific and holistic psychosocial interventions focusing on well-being, social determinants of health, and human rights.

Keywords: trauma, PTSD, idioms of distress, mental health, global mental health, violence, torture, Nepal

INTRODUCTION

Nepal, although never colonized by any other country, has witnessed structural and organized violence since its unification as a sovereign nation in the mid-eighteenth century including, most recently, during the decade-long Maoist Conflict (1996–2006) (1). During the Maoist Conflict, armed forces used excessive violence, including torture, resulting in deaths and disappearances. Moreover, there continues to be widespread gender, ethnic, and caste-based discrimination, and grossly unequal distribution of wealth. While the immediate mental health effects of the conflict are well studied, this article provides insight into the ways Nepalese survivors perceive their mental health problems, seek help, and respond to mental health treatment in the long-term.

Understanding the long-term effects of armed conflict on people's mental health and wellbeing is crucial for several reasons. On the one hand, the long-term recovery from wars is complex as communities undergo reconstruction and reorganization of social and political life and struggle to provide adequate health and social support to those suffering from physical and mental health problems (2, 3). In contrast, support for survivors is usually provided on a short-term basis in the form of humanitarian assistance, which now increasingly also includes the provision of psychiatric and psychosocial services to address trauma-related mental health problems (4–8). One reason for the provision of short-term mental health support in the face of long-term suffering might be the fact that there is little systematic research into the long-term consequences of war and violence on people's mental health and wellbeing.

Research tends to be conducted in the immediate aftermath of conflict periods, and the few existing longitudinal studies have tended to focus on small sets of psychological symptoms or syndromes or on high-income country settings (9, 10). Nevertheless, findings related to the long-term mental health effects of war among Bosnian and Croatian civilians have highlighted that psychological symptoms and general psychological distress decrease over time, and that only a subsample of survivors continue to suffer from high levels of psychological symptoms due to distinct war experiences and contemporary stressors (9, 11). Similarly, a study focusing on mental health outcomes among Sri Lankan adolescents four years after the tsunami highlighted the interplay between traumatic experiences, social support networks, and ongoing daily stressors. It was found that daily stressors were transmitters of the impact of trauma on adolescents' mental health problems and that social support moderated pathways from trauma to daily impairment. Consequently, it was recommended that interventions focus "not only on trauma processing but also on reducing current stress and improving social support" (12, p. 487).

These findings are in line with previous research that has highlighted the importance of investigating how war-related stressors cause and/or amplify existing daily or chronic stressors, and how such chronic stressors mediate the impact of war on mental health and psychosocial functioning (13). It has further been emphasized that such an integrated understanding should inform the development and implementation of holistic and context-specific interventions (2). Holism is crucial in that interventions which solely focus on healing the effects of war exposure have been shown to have limited impact as long as people face ongoing exposure to structural violence and daily stressors related to poverty, job insecurity, and housing, among others. Context-specificity is important as both war-related and chronic stressors differ across geographic, economic, cultural and sociopolitical settings as well as by age and gender (see also 14).

Even though it is now widely accepted that there exists a bidirectional relationship between war exposure and social determinants of health even in the long-term, the development of and evidence-base for holistic and culturally sensitive context-specific interventions continues to be sparse (15, 16). Johnson, (15) has linked the reasons for this gap to several factors including that (i) responses to social determinants are political rather than merely clinical; (ii) clinical professionals and researchers may feel as though they are overstepping boundaries when intervening in people's private lives and may feel overwhelmed or even helpless in the face of social challenges; (iii) the range of targets for social interventions is wide as it encompasses national, communal, family and individual levels; (iv) there are other professions that are viewed as already intervening on social levels; and (v) the mental health field continues to be domineered by psychiatry and psychology with a less developed literature and work-force in social care. Despite these obstacles, calls for investing in national and local policies that directly target the underlying social causes of mental illness are becoming louder.

Our article seeks to contribute to this nascent field by exploring how Nepalese survivors of the Maoist Conflict (1996–2006) experience and reflect on their mental health and wellbeing, help- and health-seeking, as well as received treatment seven years after the end of the conflict. We begin by reviewing the epidemiological, public health and anthropological literature in order to establish mental health outcomes during and right after the conflict. This is followed by findings of our own investigation into temporal narratives of illness experience; salient prototypes regarding current health problems; and causal attributions and treatment expectations. In addition, help- and health-seeking behavior and pathways to care will be explored as they unfold in the present. The findings inspire

recommendations for the development of holistic as well as culture- and context-specific, and long-term psychological and social interventions focusing on well-being, social determinants of health, and human rights.

BACKGROUND LITERATURE REVIEW

The Nepalese Civil War, also known as the Maoist Conflict or Maoist Revolution, was a decade-long armed conflict between the Communist Party (Maoists) and the government of Nepal that ended with a comprehensive peace agreement in 2006. Between 1996 and 2006, armed forces on both sides of the conflict are alleged to have used excessive violence resulting in deaths and enforced disappearances. The conflict has resulted in between 13,000 to 16,500 deaths, with thousands more missing. More than 150,000 people were internally displaced and more than 100,000 incidents of torture have been reported (17–19). Despite being considered one of the poorest countries in the world and affected by a long history of political instability and frequent natural disasters (i.e., seasonal floods, landslides and earthquakes), the country has achieved noteworthy progress in reducing poverty, getting children into school and improving maternal and child health. For example, the infant mortality rate has gone down from 108 per 1,000 live births in the1990s to 27.4 in 2017. Moreover, the percentage of people living below the national poverty line decreased to 21.6 in 2017 from 42 in 1990. According to the human development index (HDI) report, Nepal is now among the medium development countries with an HDI ranking of 149 out of 189 countries with a per capita income of US $1004, life expectancy of 70.6 years and adult literacy rate of 59.6% (20, 21).

While there have been rapid social, cultural, political, and economic changes in recent years, inequalities in wealth distribution and according to gender, caste, and ethnicity prevail. Theoretically, Nepal abolished caste-based discrimination in 1963; however, caste-based exclusion is still widespread and affects every aspect of life, particularly among Dalits ("untouchables") in rural areas of Nepal (22, 23). Moreover, there is a high rate of domestic and other forms of gender-based violence (24). Thousands of women and girls are trafficked to India, the Middle East, and other countries for forced sexual exploitation, forced labor, and forced marriages every year (25). In fact, Nepal has one of the highest rates of child marriage in Asia (37% of girls are married before the age of 18) (26). These inequalities persist despite the fact that the Maoist Conflict is believed to have emerged from and sought to change extant poverty, unequal division of wealth, and ethnic, regional, and caste discrimination in the country (1, 27–29).

The Effects of the Maoist Conflict on Mental Health

Mass violence during the Maoist Conflict as well as protracted and organized political violence and injustice have been shown to negatively affect the mental health of exposed populations (29, 30). High rates of psychiatric morbidity and disability were found among ethnically Nepali Bhutanese refugees (1, 31, 32), female survivors of human trafficking (25, 33), torture survivors (1, 19, 32, 34), and internally displaced persons (30, 35). Despite the lack of a Nepalese term equivalent to "trauma" and the coexistence of different local idioms of distress (36, 37), studies conducted in Nepal found high rates of symptoms consistent with PTSD. A case control survey comparing tortured and non-tortured Bhutanese refugees living in Nepal found a higher prevalence of PTSD (14 vs. 3%), anxiety (43 vs. 34%) and depression (25 vs. 14%) among those who had experienced torture (32). Similar findings were reported from another case-control study of PTSD among tortured (43%) and non-tortured (4%) Bhutanese refugees in Nepal (38). Studies have also revealed a higher prevalence of psychosocial and mental health problems, including PTSD, among displaced persons relative to the general population. A cross-sectional study conducted during the armed conflict shows that 53% of displaced persons suffered from PTSD, while 81 and 80% suffered from anxiety or depression, respectively (35). In 2008, the Center for Victims of Torture (CVICT) and the Transcultural Psychosocial Organization (TPO) of Nepal, carried out an epidemiological survey with 720 randomly selected adult samples in three districts of Nepal. It was found that 28, 23, and 10% of the sample met the symptom criteria for depression, anxiety and PTSD respectively (39). The differences in prevalence rates between these various studies has been considered difficult to explain and is most likely due to methods and sampling procedures (19).

Besides trauma-related mental disorders, research has also been conducted on local expressions of distress and Nepali "ethnopsychology" (37, 40). Kohrt and Harper (41) indicate that there are five dimensions of self-connected to mental health in Nepal, including what is called the *man* (heart–mind); *dimāg* (brain–mind); *jiu* (physical body); *sāto* (spirit); and *ijjat* (social status). The *man* and *dimāg* are particularly relevant for mental health: too much activity in the *man* is associated with psychosocial complaints while *dimāg* dysfunction is associated with being crazy, mad, or psychotic. Other studies have identified local idioms of distress and found that *jham-jham* (numbness and tingling) and *gyastrik* (dyspepsia) are common complaints that can be associated with depression (42). Among Nepali speaking Bhutanese refugees in Nepal, Sharma and Van Ommeren (18) have listed a number of idioms of distress including *dukha lāgyo* (sadness), *dar laagyo* (fear), *jharko lāgyo* (irritation), *jiu sukera gayo* (drying of the body) and *kat kat khancha* (tingling and burning sensation). Kohrt and Hruschka (37) have conducted a careful study inquiring into Nepali idioms of distress in connection to conceptions of local ethnopsychology and ethnophysiology. The study highlights that terms such as "depression" and "trauma" are not widely understood while local expressions such as *dukha* (trouble, grief, sorrow, misfortune, and hardship), *chinta* (anxiety, worry, trouble), *dar* (fear, dread, awe, terror), or *ris* (anger, wrath, ill temper, resentment) are commonly used to refer to related emotional states. Other studies have drawn attention to high rates of somatization among survivors of violence (38, 43).

Taken together, these studies make apparent that psychological trauma is a multifaceted concept and that people

in Nepal express experiences of psychological trauma through a variety of idioms reflecting impacts on the heart-mind, brain-mind, body, spirit and social status as well as differences in perceived types of traumatic events, symptom sets, emotion clusters, and vulnerability. Less research is available on the long-term impact of the Maoist Conflict on mental health; the ways in which these long-term effects intersect and interact with chronic daily stressors; and what locally meaningful and appropriate mental health interventions and social support mechanisms could or should look like (an important exception is the development of ecological interventions for former child soldiers in the armed conflict (44, 45).

Access to Mental Health Treatment and Care in Nepal

In Nepal, available treatment for mental health problems is pluralistic. Among commonly practiced types of healthcare are Ayurveda, Tibetan medicine, and homeopathy, which are mostly available in cities, and widely available traditional healing (ritual or faith-based healing, astrology, herbal medicine) and biomedicine (42, 46, 47). Interestingly, it has been found that biomedical treatment related to mental health is sought only as a last resort by most people—generally after all other means of healing and treatments fail (42, 48, 49). This might be related to the scarcity of mental health professionals and service availability outside the boundaries of major cities (50). It has been estimated that there are only about 110 psychiatrists, 15 clinical psychologists, and 400–500 paraprofessional psychosocial counsellors in the entire country (50, 51). In contrast, traditional healers are readily accessible with approximately one traditional healer per 650 persons (41). Other reasons proposed for the low uptake of biomedical practice include Nepali cultural beliefs attributing mental health problems to spirit afflictions (48) and the lack of recognition of mental health problems except for "madness" in Nepali ethnopsychology and associated stigma related to mental illness (36, 41).

Despite the apparent limitations of biomedical and specialized mental health care, it has been noted that the western biomedical model of psychiatric care is being increasingly recognized and practiced, especially in hospitals and private clinics in major cities and by non-governmental organizations (50, 52–54). In collaboration with NGOs, the Nepal government is in fact working on developing a district-level mental health plan in an effort to integrate mental health care into primary health care and to revise mental health policy. There has also been a burgeoning interest in understanding local cultural knowledge of mental illness and care, and translating that knowledge into culturally appropriate interventions (36, 55). However, due to a weak governing body, these efforts have not been translated into sustainable mental health care strategies.

METHODOLOGY

This research builds on previously conducted epidemiological research identifying prevalence rates of mental health problems, factors associated with poor mental health and protective and risk factors in post-conflict Nepal (39). Based on this work, a clinical trial was carried out testing a novel treatment aiming to diminish traumatic memory and its effects among Nepalese torture survivors suffering from chronic PTSD. The means selected to accomplish this was the implementation of a small, pilot randomized controlled trial (RCT). Our main hypothesis tested the efficacy of reconsolidation blockade using the beta-blocker propranolol vis-à-vis the selective serotonin reuptake inhibitors (SSRI) paroxetine, the "gold standard" pharmacological treatment for PTSD across the world. In this study, reconsolidation blockade using propranolol was as effective as paroxetine for treating PTSD in a sample of Nepali torture survivors (publication forthcoming). The results presented in this article form part of the qualitative component of the research project which was complementary and explored the ways in which people suffering from trauma-related health problems as well as ongoing socioeconomic stressors perceive their mental health problems, seek help and construct their health care pathways and therapeutic itineraries.

Setting

This qualitative study took place in Nepal's Dang district from mid-February until April 2013. Dang district is located approximately 280 km west of Kathmandu. The district's population is estimated to be 552,583 people belonging to multiple linguistic and ethnic groups including Tharu (30%), Chhetri (25%), Magar (14%), Brahman-Hill (10%), Kami (6%), and other (16%). Dang was badly affected during the Maoist armed conflict. Civilians were subjected to extreme violence including killing, abduction, disability and injury due to landmines, torture and sexual abuse. The region continues to be affected by poverty, deprivation and discrimination (https://nepalmap.org/profiles/district-60-dang/).

Poverty and other social determinants have a decidedly negative impact on people's health and wellbeing. Approximately 39.3% of children under the age of five are malnourished, only 55.3% of the population have access to safe drinking water, and access to healthcare is limited with only one hospital, four primary health centers, ten health posts and 26 sub-health posts available in the region (see https://nepalmap.org/profiles/district-60-dang/). A recently conducted epidemiological study that involved randomly selected participants from three districts identified that living in Dang was a risk factor for psychosocial and mental health problems (39). Yet despite the fact that psychosocial wellbeing and mental health are increasingly recognized by the government to be important issues related to the overall health status of the population, no working care system exists to address the needs of people with mental health problems.

Study Population and Sampling

Study participants were adult male and female survivors of torture and violence during the Maoist Conflict. They were purposively recruited by combining criterion and snowball sampling approaches. Criteria for inclusion were being over the age of 18 years, having been directly affected by the Maoist

Conflict, and being a resident of the Dang district. Local research assistants who had been hired as case finders for the clinical trial component of this study helped to identify potential participants for the qualitative component of the project. Potential participants were then visited at their homes and screened to identify whether their traumatic experiences dated back to the armed conflict. If they met all inclusion criteria, they were recruited to the study. Additionally, a snowball sampling approach was followed whereby each participant was asked if they knew of any person who had been affected by the conflict like themselves and if they could put us in touch with them for the purpose of screening and recruitment.

The sample consisted of 25 participants (14 men, 11 women) aged between 30 and 65. All of them were civilians with three former Maoist fighters (2 male, 1 female) among them. Most lived in villages while five participates lived in towns. Most of the participants were farmers and very few held additional occupations such as health volunteer (n = 1), teacher (n = 1), VDC leader (n = 2), and restaurant owner (n = 1). The majority had some reading and writing skills, with three participants being illiterate. Most participants considered their economic situation "simple" but sufficient to make a living and support their families. Thirty-two percent of the interviewees described themselves as poor and experienced difficulty providing for their families, particularly their children, in terms of food, clothing and school supplies (See **Table 1**).

Data Collection and Analysis

Data were collected through semi-structured interviews and observations carried out during and after interviews of interactions between household members and living standards. The topic guide included questions about family structure, socioeconomic situation, and work, and inquired into experiences during the Maoist Conflict. To elicit illness narratives, we used a translated and culturally adapted version of the McGill Illness Narrative Interview (MINI; Nepalese translation: https://www.mcgill.ca/tcpsych/files/tcpsych/mini-nepali-revised_v.3.1_0.pdf) (56). The MINI is a theoretically driven, semi-structured, qualitative interview protocol which is divided into three sections: i) a basic temporal narrative of symptom and illness experience; ii) salient prototypes related to current health problems, based on the previous experience of the interviewee, family members or friends and mass media or other popular representations[1]; and iii) any explanatory models, including labels, causal attributions, expectations for treatment, course and outcome. Additionally, we used the supplementary sections of the MINI which explore help-seeking and pathways to care, treatment experience, adherence and impact of the illness on identity, self-perception and relationships with others.

Interviews were conducted with individual participants except in two instances where couples were interviewed together based on their specific request for such an arrangement. Interviews were carried out by both authors. They were conducted in Nepali by the second author and involved, when the first author was interviewing, the help of a Nepali translator. The interviews lasted between 40 min and 1 h and were, with the consent of study participants tape-recorded and later transcribed verbatim and translated into English. Both authors read the transcripts carefully before coding them by combining deductive and inductive approaches (57, 58). The data were analyzed using thematic analysis (59). Specifically, the coded data were, first, categorized and linked by relationship into categories. Thereupon, links were established between the categories and defined properties such as phenomena, causal conditions, context, action strategies and consequences. Through an interpretative process, it was possible to identify the core themes which are presented in the following results section.

Ethics Approval

Ethical approval for this study was received from the Research Ethics Board of the Douglas Mental Health University Institute in Montreal, Canada and from the ad-hoc ethical committee at the Department of Psychiatry and Mental Health at Tribhuvan University Teaching Hospital in Kathmandu, Nepal. We obtained written informed consent for the publication of the data from the participants.

RESULTS

Narratives of Symptoms and Illness Experiences

To develop an in-depth understanding of how survivors of the armed conflict in Nepal perceive their distress and related health problems seven years after the conflict, we elicited basic temporal narratives of symptoms and illness experiences. We asked the following questions: (i) From what kind of emotional or physical health problems do you suffer? And, since when do you suffer from these health problems? (ii) When you have these health problems, what kinds of symptoms do you experience? (iii) What else happens when you experience these (symptoms)? These questions were designed to act as a prompt for further discussion concerning the frequency, intensity and location of symptoms.

Respondents listed many and a wide range of symptoms of emotional, physical, and psychosomatic nature. The following excerpt of an interview with an older couple who had been tortured, beaten, and almost drowned to death by Maoist fighters is exemplary:

> Husband: In my dreams I see people dying and (I feel) dizzy and shaking, I see those same *Maobadi* (Maoists). I see the same unfortunate event in my dreams.
> Q: Does this happen to you (wife) too? Seeing something like that in your dreams?
> Wife: Yes, the same thing happens to me too. Sometimes (I dream) that I'm walking along the river, and sometimes that they've thrown me into the river. (…) When I'm about to wake up and my heart is racing, I remember that event and I feel that maybe it is still happening? Maybe they'll come back and try to kill my husband again? Maybe they'll kill me?
> Q: When those kinds of things come to your mind, do you experience any emotional or physical symptoms? If so, what kind of symptoms do you experience?

> Wife: In my body unusual things happen, my stomach hurts, my mind is restless (*man ātinchha*), sometimes my chest hurts, my heart hurts (*mutu dukhchha*); during this time, it feels like my ribs hurt, my finger doesn't function well because my nerve is swollen so I cannot even knead dough, I can't cut grass, you know I can't even serve dinner well.

The couple refers to a combination of symptoms related to their gruesome experiences. In this short excerpt they mention nightmares and sleeping problems, dizziness and body shaking, pain in stomach, chest, ribs and heart, restlessness of the mind and swollen nerves. Frequently mentioned symptoms and feelings expressed by other study participants included sleeping problems (n=14), worries (n = 11), headache (n = 8), pain (n = 7), eating problems (n = 6), goosebumps (n = 6), anger (n = 5), fear (n = 5), emotional pain (n = 4), listlessness (n = 4), restlessness (n = 4), nightmares (n = 4), and mental tension (n = 4). Less frequently mentioned yet shared were back pain, weakness, stomach pain, thinking too much, heat in their bodies, and flashbacks. Other symptoms included heart pain, heart racing, chest pain, forgetting, stress, sweating, speaking problems, avoidance, hurting eyes, dizziness, constriction of the throat, high blood pressure, and vision problems. Finally, a number of symptoms were only mentioned by individual respondents (see footnote).[2]

Since study participants were allowed to freely list their symptoms, a wide range were mentioned which is in line with previous studies (see 18, 19, 35). While all respondents mentioned various symptoms (ranging from 2 to 19 per person), the illness narratives revealed that symptoms were not equally distributed. Men experienced slightly fewer symptoms than women (average number of symptoms for men 7.8 and for women 9.4), and among women, widows experienced more symptoms than non-widowed women (average symptoms for widows 11 and for non-widowed women 8). These discrepancies did not appear to be solely a reflection of the type or frequency of violence experienced during the conflict, but also of current social determinants, including participants' economic situation, gender-based discrimination, and issues of marginalization and community exclusion (see below).

Causal Attribution: Traumatic Experiences

Most participants stated that their symptoms had been initially caused by the violence and insecurity they had to endure and witness during the decade-long armed conflict. They reported that their symptoms increased or tended to reappear when they recalled the armed conflict and related violence, were confronted with persons who had inflicted violence on them or their family members, or visited places that reminded them of particular gruesome events.

Many of the participants listed a number of violent experiences including the loss of family members (n = 9), living through and surviving torture (n = 9), experiencing and witnessing kidnappings (n = 3), imprisonment (n = 2), and long-term displacement (n = 2). The loss of family members was experienced as extremely painful, affecting a person's entire being emotionally, physically, and socially. A man told us about the shock he had felt when his son was shot in their family garden and how this experience haunts him until this very day. He said, "even now, my mind doesn't work. If I think something, I forget about it immediately." He continued to feel depressed, felt as though there was no one he could rely on, and had lost his faith in the gods: "I feel that the fasting (*barta*) for the gods and goddesses is useless. I don't believe in any gods now."

A woman highlighted the pain she experienced remembering how her daughter was murdered. Due to the fact that her daughter's bodily remains were never located, she was still unable to find emotional closure. She stated, "Perhaps if I had seen my daughter's corpse, if I had gotten the chance to cremate [her body], then maybe there wouldn't be so much pain, but I didn't get to see her corpse. It is unknown where they killed her or where they threw her body, and even now I feel maybe she's still alive." She explained that the grief and uncertainty caused her sleeping problems and unstable health.

> My 14-year-old daughter died, the enemy killed her. The difficulty during that time was indescribable, I didn't feel like eating, my health was not stable, no matter what (…). I withstood a lot of [emotional] pain. (…) It was difficult for me to even feed and dress myself. I didn't get pennies from anywhere, I had difficulties to educate my children.

She went on to explain that remembering her daughter presently led to her feeling emotionally low which became particularly strong when she saw young girls passing by who were her daughter's age as they made her wonder who her daughter would have become had her life not been cut short.

Mostly male participants reported that their suffering and emotional pain was caused by experiences of torture during the conflict. They reported gruesome mistreatment at the hands of government forces and Maoists including severe beatings with rifles, stones, and boots; breaking of bones; cutting; attempts at drowning; blind folding; and shackling with ropes and sticks. A village teacher provided the following testimony:

> It was around 10 o'clock in the evening when they came … there were 10-15 of them. Some had covered their face (…). They surrounded my house (…). When I went outside, they captured me all of a sudden and blindfolded me. Then they took me to a small river. They accused me of being CID [a spy]. They took me to the bank of the river and started beating me. They pointed the guns at me and acted as if they were going to kill me. They beat me very badly. I told them that I

[1] According to the MINI, prototypes "involve reasoning based upon salient episodes or events in one's own or others' experiences, which allow individuals to elaborate the meaning of their illness through analogy (Example: 'Last year, my uncle and aunt died of lung cancer, so I got scared and decided to quit smoking')" (Groleau, D., A. Young and L.J. Kirmayer. 2006. The McGill illness narrative interview (MINI): An interview schedule to elicit meanings and modes of reasoning related to illness experience. Transcultural Psychiatry 43, no 4: 671–91).

> was a teacher at the village, not a spy, but they did not accept what I said (…). I told them that I teach students in the village. After that, they beat me a lot and in the end they broke my leg. They broke my leg into three pieces and left me (…). Two of them carried me and threw me on the front lawn of my house.

He went on to explain that it was since then that he felt his body trembling (*jieu thar thar garne*), felt weak, had nightmares, anticipated his attackers' return as he lay half awake, and suffered from fear and heart ache—"It (the heart) doesn't ache (physically), it's not in my body", he explained, "but it is in my *man* (heart–mind) and in my *dimāg* (brain–mind)". Similarly, a farmer told us that he had suffered from fear and the anticipation of violence at nightfall since the time he was severely beaten until his aggressors thought he was unconscious.

Other participants considered that the onset of their symptoms was related to witnessing the killings and torture of others, their imprisonment, displacement and insecurity, and the many threats they had received throughout the time of the conflict. However, it is important to state that not all of study participants were plagued by physical or emotional symptoms. Time did appear to heal some wounds and moving forward was possible despite the memories, sadness, and grief. A woman who had lost her husband in the conflict and whose illness symptoms had become fewer summarized: "We have been surviving regardless of suffering or prosperity, with or without food." Another participant reflected about how grief and social problems decreased over time saying, "There aren't as many difficulties as there used to be before. There will always be problems, but you can't make them into a mountain, you can't think that this is how things are going to be, you can't cry about it." While time seemed to heal some wounds, these narratives also highlight that experiences of violence can have long-term impacts on people's health and wellbeing; related memories continued to cause psychological and physical pain, fear, troubled sleep, and emotional heartache for many.

The Interrelation Between War Experiences and Daily Stressors: Impact on Mental and Psychosocial Health

All study participants explained that their health problems were not solely caused or amplified by violent experiences and memories, but also by chronic, daily stressors. Unlike war experiences, daily stressors were mostly not particularly eventful or spectacular, but instead formed part of the daily routine of living, pertaining to participants' economic, social, and familial situations. Yet, despite their structural differences, chronic daily stressors and the effects of the armed conflict were not experienced as separate from one another– they came together in people's lives and, thereby, co-created illness experiences.

The Maoist Conflict had been fueled by people's frustrations with economic inequality and poverty, and its outcome was perceived as a disappointment by many. All participants complained that their economic situation had not markedly improved due to the fact that subsistence farming did not yield enough income and available jobs did not pay enough to provide for children and purchase additional food and adequate clothing. A middle-aged widow stated:

> I (often don't) feel sleepy at night, and before I (know) it, it is light outside. I think about how I would raise my children. When they were little, there weren't too many expenses for them, but the older they get, the more expenses they require. Look, my children are growing up, and they yell at me when I can't fulfil their financial demands (…). My children also ask me what I am so worried about. My children tell me not worry, that we must find something or the other (a source of income). But, sometimes it's like we can't even eat dinner. Of course, I worry, why wouldn't I worry.

Others complained that their dire economic situation did not allow them to pay for specialist doctors' visits or medication. A middle-aged farmer who suffered from health problems related to the torture he had endured at the hands of government forces during the Maoist Conflict laid his situation out for us, explaining, "I don't have any land of my own, I have to go plough others' land. Fertilizer is expensive. If we don't put fertilizer then there is no production, and when there is no production then I get worried about where I'm going to find the money for (medical) treatment". Indeed, economic problems themselves were considered to cause or aggravate health problems and to impact on general wellbeing due to worries, sleeplessness, and problems with the heart-mind (*man*). Despite people's overall negative perception of their economic situation, there were a few study participants (n = 4) who felt that their particular situation had improved due to the fact that their children were employed (n = 2) or that they received regular monetary support from family members who worked abroad (n = 2). With the extra help from family members, they were able build a new house, purchase some land for agricultural production, and support their basic needs.

Problems related to social status were also highlighted as negatively impacting on health and wellbeing. Particularly the narratives of war widows and persons with physical disability bring to the fore how war exposure and daily stressors intersect and co-create experiences of marginalization and ill health. All widows we talked to told us that the loss of their husbands during the armed conflict was devastating on multiple levels. Grieving for their husbands, they also had to face the consequences of losing their social status and respect among fellow villagers. A widow who continued to live with her in-laws in comfortable

[2] *Aurāhā/audāhā* (feeling hot and suddenly angry), *Bhalbhal hune* (boiling sensation), Bad thoughts, Boredom, Breathing problems, Burning sensation, Confusion, Current in the body (feels like it), Dark mind, Depressed, Digestion problems, Dull bodily feeling, Dysentery, Fainting, Feeling allergic toward people, Feeling cold while it was warm outside, Feeling empty, Gastritis, Hearing voices, Heart stops beating (feels like it), Helplessness, Hopeless, Inability to do something, Isolation, Loneliness, Loss of control, Nerves feel like breaking, Nervousness, Panicked body, Rib pain, Sinking feeling, Stammering, Suicidal ideation, Swelling of hands, Swelling of joints, Tired, Trembling, Uncommunicative, Visions, Vomiting.

TABLE 1 | Study participants including traumatic experiences and most important daily stressors.

Interview	Gender	Age	Occupation	Traumatic event	Most important daily stressors
Interview 1	F (widow)	44	Farmer	Son shot and killed	Economic difficulties Worries about how to provide for children Widowhood Social exclusion Lack of family support
Interview 2	F	Almost 50	Farmer	Killing of daughter	Inability to visit grave of daughter Longing for daughter
Interview 3	M	Middle aged*	Farmer	Torture	Economic difficulties Lack of support from the government Disability Social exclusion
Interview 4	F	Older	Framer	Violence and threats against family	Worries Missing children who are working abroad
Interview 5	M	Older	Farmer	Torture Almost drowned	Worries Missing children who are working abroad
Interview 6	F (widow)	Middle aged	Farmer	Killing of husband Flight	Widowhood Social exclusion Lack of family support
Interview 7	F	40	Farmer Retired Maoist fighter	Witnessing violence	Economic difficulties Social exclusion Worries about how to provide for child Missing family who live far
Interview 8	M	32	Farmer Retired Maoist fighter	Torture	Economic difficulties Disability Social exclusion Worries about how to provide for child
Interview 9	M	45	Farmer	Torture	Economic difficulties
Interview 10	F (widow)	38	Health volunteer	Loss of family members Suicide of a family member	Widowhood Social exclusion Lack of support from government
Interview 11	M	Older	Former VDC leader Farmer	Abduction	Lack of support from government
Interview 12	M	Older	Former VDC leader Farmer	Torture	Economic difficulties
Interview 13	F (widow)	36	Unemployed/ working at home	Killing of husband	Widowhood Social exclusion Economic difficulty Unemployment
Interview 14	M	Middle-aged	Teacher	Torture	Economic difficulties
Interview 15	M	75	Farmer	Killing of son	Worries
Interview 16	M	41	Farmer	Torture Imprisonment Kidnapping	Economic difficulties
Interview 17	M	30	Restaurant owner Retired Maoist fighter	Imprisonment Torture	Lack of family support
Interview 18	M	63	Farmer	Displacement Looting Torture	Social exclusion Lack of support from government
Interview 19	F	46	Farmer	Torture Witnessing torture	Economic difficulties
Interview 20	F	Older	Farmer	Killing of son	Worries
Interview 21	M	63	Farmer	Killing of 3 sons	Lack of family support Economic difficulties
Interview 22	F	55	Farmer	Killing of 3 sons	Economic difficulties
Interview 23	M	Older	VDC representative	Witnessing violence	Community responsibilities Lack of support from government
Interview 24	F (widow)	45	Unemployed	Killing of husband	Widowhood Social exclusion Economic difficulties Unemployment
Interview 25	M	Middle-aged	Farmer	Abduction of mother	Lack of support from government

**Many study participants did not know how old they were.*

living conditions told us how radically her life had changed upon the loss of her husband, who was shot during a political campaign. "When I had my husband, many people used to come and chat … the life back then was so enjoyable. We used to be respected by so many. Many big people from the political party used to come here day and night." After pausing to reflect she added, "Now, after he left us, I don't know why, but no one comes to visit. It seems no one cares. People want to gather around burning wood. Who wants to gather around wood that is not burning?"

This sense of being considered cold and without purpose (wood that is not burning) led to exclusionary practices. This was illustrated by a widow who stated that others looked down upon her, related to her with disgust, and excluded her from social gathering and even family events. In frustration she exclaimed, "After our husbands die, we can't die with them. And even though it is difficult, we have to carry on caring for our children." Similarly, others complained that they might as well have died with their husbands instead of living a life at the margins of society, that others blamed them for the death of their husbands,

and that they felt disabled without male support. "Well, without a husband around I feel limbless, I don't have much support" a woman began. She continued, "When I walk around without a husband, I receive unfair treatment from others and (…) other people and my sons blame me." Such statements were echoed by other widows who lacked support, had difficulty finding work with a decent income, and could not support their children financially while also protecting them from others' prejudices.

The comparison between losing one's husband and losing a limb was an apt one as men who suffered from torture-related physical disabilities also complained about the societal exclusion they experienced, disrespectful treatment and discriminatory practices which hindered them in finding employment. A middle-aged man whose leg had been broken and crushed by government forces felt that his disability had brought a part of his life to an end. He said, "Well, what can you do in life. If I were able to use my foot well, then I could go to someone else's house and work. I would be able to live (from these earnings)." However, it was not just the missing limb, the disability, that kept men like him homebound. It was also the prejudice and lack of respect that people harbored towards the disabled. "I'm without a limb and they feel that whatever I do or say comes from a lowly level" someone said. Instead of being able to care for themselves, they perceived themselves as a burden for other family members who had to struggle to meet their and others' needs. A former Maoist fighter, who was blinded as part of the torture that government prison guards had exposed him to, stated with resignation in his voice, "I must be fed, I must be cooked for, and going to the bathroom is whole other story…" His wife, a former Maoist fighter like her husband, struggled with "mental tension", stomach pain, sleeping and eating problems, thinking too much and fatigue due to her memories of the violence she had been forced to endure and challenges connected to keeping the family farm running on her own. She was responsible for raising a small son, caring for her husband, keeping the house in order, and dealing with the cattle and agricultural production.

Strained family relations were an additional source of stress. While most participants considered their families supportive and generous, some women complained about being exploited and ill-treated by their in-laws. A widow shared with us that she had been used as a maidservant since her husband's death while her in-laws remained idle and expected to be served. Consequently, she decided to leave their compound and live on her own despite struggling to secure an income and provide for her children. Two men, on the other hand, complained that their dreams and aspirations were cut short by their families who discouraged them from progressing in their education and careers. This, they stated, was an important source of frustration and stress. We were told, "They [my family] lack basic education, they don't know anything (…) and can't give advice. That's why I don't receive support from my family. I console my soul myself." Others were distraught that their family members lived far away or even abroad and were, thus, unable to provide emotional support. The female Maoist fighter introduced above lamented, for instance, "Our family doesn't live close by and I feel that if they did, then we could have talked and exchanged about the good and bad times we are experiencing." Consequently, she often felt alone with her gruesome memories, emotional and physical pain, and pressure to provide for her husband and son.

One of the long-term effects of the Maoist Conflict was the intersection of traumatic memories with daily stressors. In their coming together, they were relentless and constant, affecting people's social position through disability and widowhood; impacting on their ability to earn an income or perform daily tasks due to emotional and physical pain; and, as will become apparent in the following sections, affecting community cohesion, regional economy, and infrastructure.

Coping and Help-Seeking

In order to ease the physical and emotional pain induced by traumatic memories and daily stressors, study participants resorted to various coping strategies including social activities, avoidance strategies and withdrawal, and substance use. Several explained that it helped them to find meaning in their illness through analogy, that is, by comparing their experiences to others (this corresponds to "salient prototypes" outlined in the MINI (56). They made their own symptoms more bearable by relativizing them in light of the suffering experienced by others. This, it was explained to us, made them realize that they were not alone with their pain and that others might have endured even more violence and loss. We were told, "When you have so much pain in your own mind, then you make yourself feel better by looking at the pain of others." Similarly, a woman who had lost her daughter during the armed conflict explained:

> Look, a lot of people have found themselves in this conflict. I think about the pain that other people have to go through and make myself feel better about my own situation. It is not only me who has lost something, (…) I tell myself some people have lost their husbands, some people have lost their wives, some have lost their daughters too, I am not the only one who has lost someone. I tell myself that everyone has pain and problems and that is how I console myself.

Although trauma and suffering were experienced at the level of the individual, the notion of shared grief and pain created a sense of companionship and solidarity which seemed to say 'we are in this together'. Other times, companionship through social interaction was sought more actively as a form of distraction from one's grief and worries and a means to escape loneliness and troubling thoughts. The same woman introduced above mentioned that since the death of her daughter, she could not stand being alone and consequently sought company by walking into the village to chat with her friends and visit acquaintances. Similarly, another woman told us, "During daytime, I talk to people while walking around and I don't feel any pain. But when I am alone in the evening and start thinking, I experience such problems." These examples make apparent that both illness and coping are social experiences which are shaped by historical and contemporary social change.

While illness and coping may be social, this does not mean that social relations are always sought after or that such relations are necessarily positive. We found that it was mostly men who tried to control their feelings by explicitly avoiding social company. They wandered around by themselves, visited temples or quiet places on their own, or worked harder than usual. For instance, a middle-aged man stated, "When I have the problem, then I keep working all the time. I feel pain, yet I keep working. But if I feel restless, and if it hinders my work, then I take medication. This is how I am living." A few participants tried to relax or numb their feelings with alcohol or cigarettes. While alcohol was seen as a form of escapism, cigarettes were experienced as taking the tension away and were, accordingly, viewed as a form of relaxation by some. A woman who had lost both her son and daughter along with their friends had the urge to forget her sorrow. She exclaimed, "I couldn't forget them and so I started drinking alcohol. I was so much hurt and I wanted to learn to smoke cigarettes. If I hadn't learned smoking cigarettes, my headache would be severe. I was suffering badly so I learned how to smoke." Alcohol-induced forgetting and pain relief for headaches through smoking felt like justified approaches, even skills ("I learned how to smoke"), to this woman in light of her suffering.

Help-seeking was mainly interrelational in that respondents requested and drew on family, community, and institutional supports. Most stated that it was their immediate family and friends who provided them with support. Family members provided material support in the form of money or financing the building or rebuilding of homes as well as social and emotional support and care. Similarly, friends and neighbors were perceived to be supportive in that they encouraged participants to socialize, listened to them, calmed them in times of distress, and/or tried to provide some comfort when in pain. A man with disability highlighted the importance of having forged a special type of bond (*mit lāune:* a tradition of friendship established through ritual) with a person suffering from similar health problems as their relationship provided him with a sense of solidarity and mutual understanding while, at the same time, it "freshened his mind" when he was feeling nervous or worried.

When asked about ways in which the village community provided support, participants provided examples of how, during the years of conflict, neighbors had protected each other during invasions, had taken children into their care whose families had been detained, or had driven the wounded to nearby clinics or hospitals. After the conflict, some communities had collected donations for the disabled in order to support them and their families as they were struggling to find a source of income. Only one person noted that a lack of communal solidarity and consequent feeling of isolation and frustration. He asked rhetorically, "What could the neighbors do? They are busy taking care of themselves. They are struggling to sustain their own families; how could they help us? We do have friends but who would be of help in times of trouble? Nobody will be there when you are in trouble, everyone supports you only in times of happiness. (…) I came to learn this."

Most study participants had also received support from non-governmental organizations and governmental institutions in the immediate years following the conflict. The aid had been short-term and predominantly consisted of monetary and in-kind donations (i.e., food, clothes, building material) as well as psychosocial activities including self-help groups and trainings (i.e., training on livestock, agriculture, small business development, investment). While the aid was welcomed, it was often considered too short-term and insufficient. A widow highlighted that the government had provided her generously with 5 lakh (500,000 rupee) as seed capital but, from then on, only provided 150 rupee per month for her children– pocket money which she considered "not even enough to buy vegetables or a samosa."

The major complaint was directed at the unfair distribution of aid which favored influential families, people with "connections" or those with ties to particular political parties. The resulting inequalities were experienced as stressful and as negatively impacting on people's sense of wellbeing. A widow reflected on the unfair distribution of aid stating angrily, "Whoever has endured a painful conflict, that person will not receive any help. Whoever hasn't endured conflict has received help from institutions. Even people who haven't endured any conflict are making fake petitions and receive funding." Similarly, others explained that there were those who wrote "fake claims" to receive funds based on their non-existent disability or veteran status or false description of their economic situation. We were also told about the distribution of funds based on political partisanship and nepotism as well as about politicians who attempted to increase their popularity and party membership by promising people access to welfare or in-kind donations. A man said, for instance, "(political) parties started to be biased saying 'this victim is the one I know' and started to provide (them with) much more relief and support (compared to) others." Trying to verify these complaints, we interviewed a village leader who indeed acknowledged the study participants' grievances as accurate, but, relativized their complaints by adding that many villagers were actually unaware of the eligibility criteria for welfare and aid, whom to approach to receive support, and what documentation to provide in order to file a claim. Nevertheless, he admitted that those working in administrative positions tend to ignore the situation and, thus, fail to engage in advocacy and knowledge transmission to improve access to welfare and other forms of support. Thus, aid was experienced as both a welcomed relief and a source of stress and communal conflict due to the way it was distributed, its scarcity and the lack of sustainability in a context where poverty and unemployment are widespread.

Health-Seeking and Pathways to Care

Almost all study participants had received some form of biomedical treatment for their health problems as they visited a combination of doctors working in public and private sector clinics (n = 9); hospitals (n = 5) in Kathmandu, Palpa district, and India; mental health specialists (n = 2) including a neurologist and a psychiatrist; and professionals working for non-governmental organizations (n = 2)

such as the ICRC or the Centre for Victims of Torture (CVICT). Although many received medication, most could not actually recall what kind, while some referred specifically to sleeping pills (n = 2), analgesics (n = 4), and medication for high blood pressure (n = 1). Medication was variously combined with other types of treatment and advice including scans (i.e. x-rays, CTs, MRI), psychiatric medication, counselling, advice from both doctors and family members not to worry or be preoccupied, exercise, and various forms of traditional healing.

Many felt that their health problems had improved over the years partly due to "time" and partly due to medical treatment, counselling and traditional healing. However, several participants felt that medication was not particularly effective as it was not perceived to lead to a cure. It was highlighted that medication had to be taken continuously while health problems kept re-surfacing at regular intervals despite the treatment. One man stated, "When I am alone, I think too much—if people are with me, then I think less. If I don't take medicine then I can't sleep at all. I can only sleep once I take the medicine that my son has sent me from India." Another man explained that he had visited various doctors who had prescribed "four to five different medicines" which he considered ineffective. Finally, at a clinic in Gangalal he was prescribed medication he considered helpful and was willing to continue taking. Only one woman perceived the medication she had been prescribed to be completely unhelpful. She complained:

> The pain from the death of my daughter caused so many types of illnesses. I spent about 12 lakhs (1.2 million) for my healthcare – the money that my eldest son had sent me was used to go to Kathmandu, Palpa and Lukhnow (India) where the doctors still couldn't figure out what my problem was. (…) Even when I take the medicine that the hospital gave me, it hurts just as much as if I were not to take the medicine.

Interestingly only four participants said that they visited traditional healers for their health problems. We believe, however that this reflects under-reporting rather than actual health-seeking practice considering that well known healers lived in the area and existing literature highlights the widespread use of traditional healing for trauma-related as well as physical health problems. Those who reported seeking traditional healing visited both healers and temples to find inner peace and pain relief. For instance, we were told by one of our male participants that his illness had been variously interpreted as witchcraft by a *guruba* (traditional) healer and as neuroinflammation by a biomedical practitioner. When asked how he made sense of these different illness explanations, he responded:

> A: (smiling) Who is correct? Both couldn't do anything for me. Although the traditional healer couldn't do anything, he did something. (…) I might consult others (traditional healers).
> Q: So you think that you have been bewitched?
> A: Yes, something like that.
> Q: What did the *guruba* do to make you feel better?
> A: He told me that using the traditional way through rituals (*jhaar phuuk*) would be correct.

The interviews made apparent that both biomedicine and traditional healing provided some relief, but failed to yield a lasting cure due to the chronic nature of the health problems, recurring traumatic memories, and ongoing socioeconomic stressors which were linked to psychological and physical pain. It also became apparent that there was no long-term mental health and psychosocial support program in place (most had travelled to other cities including Kathmandu to receive psychiatric treatment), nor did there appear to be any social interventions in the region that could directly address social and economic determinants of health and thus indirectly affect conflict-related memories and associated emotional pain.

STUDY LIMITATIONS

This study has several limitations. First, the study was cross-sectional rather than longitudinal and based entirely on retrospective self-reporting of war-exposure and related illness symptoms. Although respondents indicated that their mental health problems originated from traumatic experiences endured during the Maoist Conflict, the actual time of onset of symptoms is impossible to determine. In fact, we suspect that most people experienced a number of triggers including conflict-related violence and structural violence as well as daily stressors experienced in the aftermath. Second, the study was based on a small sample and sampling was conducted in only one out of 77 districts in Nepal. Therefore, the results may not be representative of conflict-affected populations in other geographical areas or across all linguistic, caste, ethnic, and socioeconomic groups. Third, we failed to systematically collect information about ethnicity and participants' socioeconomic status before the conflict. Consequently, it is impossible for us to more objectively determine whether or not respondents' socioeconomic situation had changed due to or since the conflict. Despite these limitations, the data offer crucial insights into the long-term consequences of war and the ways in which people perceive war exposure and daily stressors to affect their mental health and wellbeing.

DISCUSSION AND CONCLUSION

Our findings provide insight into the ways long-term consequences of war intersect with daily stressors and, in combination, affect people's mental health and wellbeing. The findings further highlight the importance of designing interventions and support mechanisms that address not only immediate humanitarian, health and mental health needs, but also the social determinants of health (i.e., infrastructure, poverty, housing, education, and multiple forms of discrimination) which affect the context in which people are born, grow, live, work, and age (see 60). Respondents themselves highlighted how their illness experiences were co-produced by

traumatic conflict-related experiences, extant social role and status-based discrimination (i.e., gender, widowed, unemployed, disabled), and daily stressors (i.e., insecure economic situation, impoverished living conditions, and lack of community and family cohesion). In combination, these various stressors were perceived to cause a wide range of symptoms spanning psychological, psychosomatic and organic domains. This finding corresponds with previous research in Nepal which has identified that people express distress through a vast number and range of symptoms (e.g., 18, 19, 35, 61; see Chase etal., (55) for a review of studies on culture and mental health in Nepal).

The onset of these symptoms was usually attributed to violence experienced during the Maoist Conflict. We were told about the gruesome events respondents had experienced and witnessed, the ways in which they relived these experiences through memories and dreams, and how they impacted them emotionally and physically even seven years later. Previous studies conducted in Nepal suggested that experiences of trauma was considered by survivors a consequence of their *karma* and fate (i.e., bad *karma* in the past leads to a bad fate) and hence stigmatization. Therefore, people preferred not to share their traumatic experiences (e.g., 37). However, we encountered no such attribution or any difficulty in talking about traumatic experiences (even experiences of sexual abuse and marital-rape were presented as index traumatic experience by the female survivors during trauma reactivation as part of the clinical trial).

Our research furthermore made apparent that while most participants attributed the onset of their symptoms to the armed conflict, they considered their overall illness experience to be co-produced by chronic daily stressors. The notion of co-production is in line with emerging evidence which suggests that social, economic, and physical environments in which people live shape their mental health (2, 16). Particular risk factors are poverty, social marginalization, isolation, inadequate housing, and changes in family structure and functioning (15, 62) (for Nepal see 29, 30, 63). Additionally, research has revealed that experiencing mental illness increases the risk for poor social conditions and weak social ties (15, 64).

We would like to further stress the notion of "co-production" as it also informed people's coping, help- and health-seeking behaviors, as well as reflections on social support and medical treatment. Similar insight is provided by Thapa and Hauff (30) who found that perceived needs among displaced people during the Maoist Conflict included financial needs, housing, food, and education for their children. The authors conclude that responding to "perceived needs of job opportunities and social help (…) could potentially address mental health problems" (p. 593). However, in both their and our study, such support was hard to come by due to the inadequate healthcare and social welfare system and lacking resources and infrastructure.

To address mental health problems experienced by survivors of war as well as the general population in the long-term, we advocate for a multi-sectoral social, medical, and psychological approach that pays attention, first and foremost, to the political, social and economic determinants of health. There is growing evidence on such intersectoral interventions to alleviate the effects of poverty, inequality, and social marginalization on mental health by addressing upstream factors (15, 16). Downstream, specialized psychiatric support should be reserved for people suffering from trauma-related health problems such as PTSD and clinical depression (65). Having said this, we are well aware that it has proven challenging to find the right place for upstream interventions since potential targets extend well beyond mental health services to include the individual, family, community and social, as well as political levels (15, 16, 66). A further complicating factor is that interventions should not only be intersectoral but also context-specific, requiring a good understanding of the respective local history and political, socioeconomic, cultural situation.

TABLE 2 | Levels and targets of interventions to improve mental health of survivors of war in Dang district, Nepal (Adapted from 16).

Country level
Reduction of poverty and inequality with attention to caste-ethnic and religious affiliation, gender, and urban/rural divides; reduction of discrimination with attention to particularly marginalized groups (e.g., widows and people with disabilities); improvement of infrastructure and road safety which would allow people to access available health and social services; improvement of governance; protection of human rights; development and implementation of national policies to ensure access to education, employment, decent wages, health care, and housing proportionate to need irrespective of social status.
Service level
Accessibility and improvement of schools and adolescent/youth services; provision of health care with attention to existing pluralistic medical traditions (i.e. Ayurveda, Tibetan medicine, ritual or faith-based healing, astrology, herbal medicine, homeopathy and biomedicine); provision of specialized services for survivors of torture and gender-based violence; development and delivery of social and welfare services; creation of a referral system connecting medical, psychosocial and social services; provision of clean water and sanitation.
Community level
Creation of an information system enabling access to health and social services; building of neighbourhood trust/cohesion and safety; carrying out community-needs assessments; respect for places for spiritual/religious healing and communal practice/worship/celebration; enabling of community involvement and participation with attention to local power dynamics related to socioeconomic status, caste-ethnic and religious affiliation, age, gender, and disability; creation and implementation of support groups for survivors of violence and loss; prevention of violence/crime; reduction of social and economic deprivation at the neighbourhood level.
Household and working life level
Support for families and strengthening support within and across extended families with attention to loss of family members during the conflict and change in social position of female members, esp. daughters-in-law and widows; improvement of material conditions (i.e., income, access to resources to fulfil basic needs); improvement of employment conditions and decrease in unemployment (with attention to agriculture); provision of decedent wages; provision of pregnancy and maternal health care and social support.
Life course level
Health and social support provision during prenatal, pregnancy and perinatal periods; early childhood; adolescence; working and family building years; and older age, all with attention to social position and gender.

To illustrate the different intervention levels that could address mental health problems and distress in the context of our research, we have adapted a table produced by Wahlbeck et al. [(16), p. 506]. (See **Table 2**).

Such a multi-level inter-sectoral approach would require a bringing together of so far fragmented services and spheres (67). Achieving this would not only have the potential to improve mental health and wellbeing, but would also address other concerns which form part of the Sustainable Development Goals. Mental health is now explicitly mentioned as part of SDG 3, highlighting the inclusion of mental health care in universal health coverage. This mentioning is important; yet, it does not account for the fact that mental health treatment alone will have limited capability to enhance mental health and wellbeing considering that research has shown that mental disorders are strongly socially, economically and politically determined (68). These determinants, in turn, can be linked to various SDGs as they relate to poverty, nutrition, education, gender and other social inequalities, living conditions, decent work, and strong institutions. Thus, in order to address mental ill health, it is crucial to work across sectors and paying attention to the "multidimensional way in which [political, social and economic] determinants interact with key genetic determinants to affect mental disorders" (68, p. 357). In order to achieve this, it will be hugely important to foster the participation of and partnerships between government sectors, civil society organizations, and affected people and their communities. Only through such a holistic and context-specific approach will it be possible to provide populations, including survivors of war, with adequate healthcare, a secure environment, and the ability to live lives they and their communities value.

DATA AVAILABILITY STATEMENT

The datasets generated for this study are available on request to the corresponding author.

ETHICS STATEMENT

This study was carried out in accordance with the recommendations of the Research Ethics Board of the Douglas Mental Health University Institute in Montreal with written informed consent from all subjects. All subjects gave written informed consent in accordance with the Declaration of Helsinki. The protocol was approved by the the Research Ethics Board of the Douglas Mental Health University Institute in Montreal, Canada and from the *ad hoc* ethical committee at the Department of Psychiatry and Mental Health at Tribhuvan University Teaching Hospital in Kathmandu, Nepal.

AUTHOR CONTRIBUTIONS

HK is the Principal Investigator of the project, developed the research tools, conducted half of the interviews, coded and analyzed the data, and wrote most of the article. RP worked as a research assistant on the grant, developed the research tools, conducted half of the interviews, coded and analyzed the data, contributed to the writing, and provided feedback.

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REFERENCES

1. Tol WA, Kohrt BA, Jordans MJ, Thapa SB, Pettigrew J, Upadhaya N, et al. Political violence and mental health: a multi-disciplinary review of the literature on nepal. *Soc Sci Med* (2010) 70(1):35–44. doi: 10.1037/e517292011-269
2. Miller KE, Rasmussen A. War exposure, daily stressors, and mental health in conflict and post-conflict settings: Bridging the divide between trauma-focused and psychosocial frameworks. *Soc Sci Med* (2010) 701:7–16. doi: 10.1016/j.socscimed.2009.09.029
3. Pedersen D. Political violence, ethnic conflict, and contemporary wars: Broad implications for health and social well-being. *Soc Sci Med* (2002) 55 (2):175–90. doi: 10.1016/S0277-9536(01)00261-1
4. Allden K, Jones L, Weissbecker I, Wessells M, Bolton P, Betancourt TS, et al. Mental health and psychosocial support in crisis and conflict: Report of the mental health working group. *Prehosp. Disaster Med* (2009) 24(S2):s217–s27. doi: 10.1017/s1049023x00021622
5. Fassin D, Rechtman R. *The empire of trauma: An inquiry into the condition of victimhood*. Princeton: Princeton University Press (2009). doi: 10.1353/anq.0.0113
6. Kienzler H, Pedersen D. Strange but common bedfellows: the relationship between humanitarians and the military in developing psychosocial interventions for civilian populations affected by armed conflict. *Transcult. Psychiatry* (2012) 49(3-4):492–8. doi: 10.1177/1363461512447927
7. Pedersen D, Kienzler H, Guzder J. Searching for best practices: a systematic inquiry into the nature of psychosocial interventions aimed at reducing the

mental health burden in conflict and postconflict settings. *SAGE Open* (2015) 5(4): 1–25. doi: 10.1177/2158244015615164
8. Yehuda R. Post-traumatic stress disorder. *New Engl J Med* (2002) 346 (2):108–14. doi: 10.1056/nejmra012941
9. Comtesse H, Powell S, Soldo A, Hagl M, Rosner R. Long-term psychological distress of bosnian war survivors: an 11-year follow-up of former displaced persons, returnees, and stayers. *BMC Psychiatry* (2019) 19(1):1. doi: 10.1186/s12888-018-1996-0
10. Silove D, Ventevogel P, Rees S. The contemporary refugee crisis: an overview of mental health challenges. *World Psychiatry* (2017) 16(2):130–9. doi: 10.1002/wps.20438
11. Prorokovic A, Cavka M, Cubela Adoric V. Psychosomatic and depressive symptoms in civilians, refugees, and soldiers: 1993-2004 longitudinal study in croatia. *Croatian Med J* (2005) 46(2):275–81.
12. Ponnamperuma T, Nicolson NA. The relative impact of traumatic experiences and daily stressors on mental health outcomes in sri lankan adolescents. *J Trauma. Stress* (2018) 31(4):487–98. doi: 10.1002/jts.22311
13. Fernando GA, Miller KE, Berger DE. Growing pains: the impact of disaster-related and daily stressors on the psychological and psychosocial functioning of youth in sri lanka. *Child Dev* (2010) 81(4):1192–210. doi: 10.1111/j.1467-8624.2010.01462.x
14. Pedersen D, Kienzler H, Gamarra J. Llaki and nakary: idioms of distress and suffering among the highland quechua in the peruvian andes. *Cult. Med. Psychiatry* (2010) 34(2):279–0. doi: 10.1007/s11013-010-9173-z
15. Johnson S. Social interventions in mental health: a call to action. *Soc Psychiatry Psychiatr Epidemiol* (2017) 52(3):245–47. doi: 10.1007/s00127-017-1360-6
16. Wahlbeck K, Cresswell-Smith J, Haaramo P, Parkkonen J. Interventions to mitigate the effects of poverty and inequality on mental health. *Soc Psychiatry Psychiatr Epidemiol* (2017) 52(5):505–14. doi: 10.1007/s00127-017-1370-4
17. Joshi M, Pyakurel SR. Individual-level data on the victims of nepal's civil war, 1996–2006: a new data set. *Int Interact* (2015) 41(3):601–19. doi: 10.1080/03050629.2015.987345
18. Sharma B, Van Ommeren M. Preventing torture and rehabilitating survivors in nepal. *Transcult. Psychiatry* (1998) 35(1):85–7. doi: 10.1177/136346159803500104
19. Tol WA, Komproe IH, Thapa SB, Jordans MJ, Sharma B, De Jong JT. Disability associated with psychiatric symptoms among torture survivors in rural nepal. *J Nerv Ment Dis* (2007) 195(6):463–9. doi: 10.1097/nmd.0b013e31802f5dac
20. Government of Nepal Ministry of Finance. (2018). Economic survey 2017/18. https://www.mof.gov.np/en/archive-documents/economic-survey-21.html.
21. United Nations Development Programme. (2018). Human development indices and indicators. 2018 statistical update. http://hdr.undp.org/en/content/human-development-indices-indicators-2018-statistical-update.
22. Mainali R, Jafarey S, Montes-Rojas G. Earnings and caste: An evaluation of caste wage differentials in the nepalese labour market. *J Dev Stud* (2017) 53 (3):396–421. doi: 10.1080/00220388.2016.1189535
23. Wagle UR. The caste/ethnic bases of poverty dynamics: A longitudinal analysis of chronic and structural poverty in nepal. *J Dev Stud* (2017) 53 (9):1430–51. doi: 10.1080/00220388.2016.1224850
24. Ministry of Health Nepal, New Era and ICF International. (2017). Nepal demographic and health survey 2016. https://dhsprogram.com/publications/publication-fr336-dhs-final-reports.cfm.
25. Rimal R, Papadopoulos C. The mental health of sexually trafficked female survivors in nepal. *Int J Soc Psychiatry* (2016) 62(5):487–95. doi: 10.1177/0020764016651457
26. Human Rights Watch. (2018). World report 2018. Events of 2017. https://www.hrw.org/world-report/2018#.
27. Hutt M. *Himalayan people's war: Nepal's maoist rebellion*. Bloomington and Indianapolis: Indiana University Press (2004).
28. Thapa D, Sijapati B. A *kingdom under siege*. In: *Nepal's maoist insurgency, 1996 to 2003*. London: Zed books (2004).
29. Upadhaya N, Tize C, Adhikari RP, Gurung D, Pokhrel R, Maharjan SM, et al. Geographies of adolescent distress: a need for a community-based psychosocial care system in nepal. *Intervention* (2019). doi: 10.4103/intv.intv_21_18
30. Thapa SB, Hauff E. Perceived needs, self-reported health and disability among displaced persons during an armed conflict in nepal. *Soc Psychiatry Psychiatr Epidemiol* (2012) 47(4):589–95. doi: 10.1007/s00127-011-0359-7
31. Reiffers R, Dahal RP, Koirala S, Gerritzen R, Upadhaya N, Luitel NP, et al. Psychosocial support for bhutanese refugees in nepal. *Intervention* (2013) 11 (2):169–79. doi: 10.1097/wtf.0b013e32835e368c
32. Thapa SB, Van Ommeren M, Sharma B, De Jong JT, Hauff E. Psychiatric disability among tortured bhutanese refugees in nepal. *Am J Psychiatry* (2003) 160(11):2032–37. doi: 10.1176/appi.ajp.160.11.2032
33. Tsutsumi A, Izutsu T, Poudyal AK, Kato S, Marui E. Mental health of female survivors of human trafficking in nepal. *Soc Sci Med* (2008) 66(8):1841–7. doi: 10.1016/j.socscimed.2007.12.025
34. Shrestha NM, Sharma B, Van Ommeren M, Regmi S, Makaju R, Komproe I, et al. Impact of torture on refugees displaced within the developing world: Symptomatology among bhutanese refugees in nepal. *JAMA: J Am Med Assoc* (1998) 280(5):443–8. doi: 10.1001/jama.280.5.443
35. Thapa SB, Hauff E. Psychological distress among displaced persons during an armed conflict in nepal. *Soc Psychiatry Psychiatr Epidemiol* (2005) 40 (8):672–79. doi: 10.1007/s00127-005-0943-9
36. Harper I. *Development and public health in the himalaya: Reflections on healing in contemporary nepal*. London: Routledge (2014).
37. Kohrt BA, Hruschka DJ. Nepali concepts of psychological trauma: the role of idioms of distress, ethnopsychology and ethnophysiology in alleviating suffering and preventing stigma. *Cult. Med. Psychiatry* (2010a) 34(2):322–52. doi: 10.1007/s11013-010-9170-2
38. Van Ommeren M, Sharma B, Sharma GK, Komproe I, Cardeña E, De Jong JT. The relationship between somatic and ptsd symptoms among bhutanese refugee torture survivors: examination of comorbidity with anxiety and depression. *J Trauma. Stress* (2002) 15(5):415–21. doi: 10.1023/A:1020141510005
39. Luitel NP, Jordans MJ, Sapkota RP, Tol WA, Kohrt BA, Thapa SB, et al. Conflict and mental health: a cross-sectional epidemiological study in nepal. *Soc Psychiatry Psychiatr Epidemiol* (2013) 48(2):183–93. doi: 10.1007/s00127-012-0539-0
40. Chase LE, Sapkota RP. In our community, a friend is a psychologist: an ethnographic study of informal care in two bhutanese refugee communities. *Transcult. Psychiatry* (2017) 54(3):400–22. doi: 10.1177/1363461517703023
41. Kohrt BA, Harper I. Navigating diagnoses: understanding mind–body relations, mental health, and stigma in nepal. *Cult. Med. Psychiatry* (2008) 32(4):462. doi: 10.1007/s11013-008-9110-6
42. Kohrt BA. "Somatization" and "comorbidity": a study of jhum-jhum and depression in rural nepal. *Ethos* (2005) 33(1):125–47. doi: 10.1525/eth.2005.33.1.125
43. Mitschke DB, Aguirre RT, Sharma B. Common threads: improving the mental health of bhutanese refugee women through shared learning. *Soc Work In Ment Health* (2013) 11(3):249–66. doi: 10.1080/15332985.2013.769926
44. Kohrt BA. Social ecology interventions for post-traumatic stress disorder: what can we learn from child soldiers? *Br J Psychiatry* (2013) 203(3):165–7. doi: 10.1192/bjp.bp.112.124958
45. Kohrt BA, Jordans MJ, Koirala S, Worthman CM. Designing mental health interventions informed by child development and human biology theory: a social ecology intervention for child soldiers in nepal. *Am J Hum Biol* (2015) 27(1):27–0. doi: 10.1002/ajhb.22651
46. Pigg SL. The social symbolism of healing in nepal. *Ethnology* (1995) 34 (1):17–37.
47. Tol WA, Jordans MJ, Regmi S, Sharma B. Cultural challenges to psychosocial counselling in nepal. *Transcult. Psychiatry* (2005) 42(2):317–33. doi: 10.1177/1363461505052670
48. Regmi S, Pokharel A, Ojha S, Pradhan S, Chapagain G. Nepal mental health country profile. *Int Rev Psychiatry* (2004) 16(1-2):142–49. doi: 10.1080/09540260310001635186
49. Subedi M. Illness causation and interpretation in a newari town. In. *State Soc Health In nepal* (2018) 5:62–8.
50. Luitel NP, Jordans MJ, Adhikari A, Upadhaya N, Hanlon C, Lund C, et al. Mental health care in nepal: current situation and challenges for development of a district mental health care plan. *Conflict Health* (2015) 9(1):3. doi: 10.1186/s13031-014-0030-5
51. Sherchan S, Samuel R, Marahatta K, Anwar N, Van Ommeren MH, Ofrin R. Post-disaster mental health and psychosocial support: experience from the 2015 nepal earthquake. *WHO South-East Asia J Public Health* (2017) 6(1):22.
52. Jordans MJ, Tol WA, Susanty D, Ntamatumba P, Luitel NP, Komproe IH, et al. Implementation of a mental health care package for children in areas of

armed conflict: A case study from burundi, indonesia, nepal, sri lanka, and sudan. *PloS Med* (2013) 10(1):e1001371. doi: 10.1371/journal.pmed.1001371
53. Mendenhall E, De Silva MJ, Hanlon C, Petersen I, Shidhaye R, Jordans M, et al. Acceptability and feasibility of using non-specialist health workers to deliver mental health care: Stakeholder perceptions from the prime district sites in ethiopia, india, nepal, south africa, and uganda. *Soc Sci Med* (2014) 118:33–42. doi: 10.1016/j.socscimed.2014.07.057
54. Upadhaya N, Luitel NP, Koirala S, Adhikari RP, Gurung D, Shrestha P, et al. The role of mental health and psychosocial support nongovernmental organisations: reflections from post conflict nepal. *Intervention* (2014) 12:113–28.
55. Chase LE, Sapkota RP, Crafa D, Kirmayer LJ. Culture and mental health in nepal: an interdisciplinary scoping review. *Global Ment Health* (2018) 5, 1–15. doi: 10.1017/gmh.2018.27
56. Groleau D, Young A, Kirmayer LJ. The mcgill illness narrative interview (mini): an interview schedule to elicit meanings and modes of reasoning related to illness experience. *Transcult. Psychiatry* (2006) 43(4):671–91. doi: 10.1177/1363461506070796
57. Elo S, Kyngäs H. The qualitative content analysis process. *J Adv. Nurs* (2008) 62(1):107–15. doi: 10.1111/j.1365-2648.2007.04569.x
58. Mayring P. Qualitative content analysis. *Forum Qual Soc Res* (2000) 1(2).
59. Bradley EH, Curry LA, Devers KJ. Qualitative data analysis for health services research: Developing taxonomy, themes, and theory. *Health Serv Res* (2007) 42(4):1758–72. doi: 10.1111/j.1475-6773.2006.00684.x
60. Marmot M, Friel S, Bell R, Houweling TA, Taylor SCommission on Social Determinants of Health. Closing the gap in a generation: Health equity through action on the social determinants of health. *Lancet* (2008) 372 (9650):1661–9. doi: 10.1016/S0140-6736(08)61690-6
61. Kohrt BA, Bourey C. Culture and comorbidity: Intimate partner violence as a common risk factor for maternal mental illness and reproductive health problems among former child soldiers in Nepal. *Med Anthropol. Q* (2016) 30 (4):515–35. doi: 10.1111/maq.12336
62. Patel V, Kleinman A. Poverty and common mental disorders in developing countries. *Bull World Health Organ* (2003) 81:609–15.
63. Gurung D, Upadhyaya N, Magar J, Giri NP, Hanlon C, Jordans MJ. Service user and care giver involvement in mental health system strengthening in Nepal: A qualitative study on barriers and facilitating factors. *Int J Ment Health Syst* (2017) 11(1):30. doi: 10.1186/s13033-017-0139-1
64. Patel V. Mental health in low-and middle-income countries. *Br Med Bull* (2007) 81(1):81–6. doi: 10.1093/bmb/ldm010
65. Tol WA, Barbui C, Galappatti A, Silove D, Betancourt TS, Souza R, et al. Mental health and psychosocial support in humanitarian settings: Linking practice and research. *Lancet* (2011) 378(9802):1581–91. doi: 10.1016/S0140-6736(11)61094-5
66. WHO Commission on Social Determinants of Health. (2008). *Closing the gap in a generation: Health equity through action on the social determinants of health: Commission on social determinants of health final report*: World Health Organization.
67. Kienzler H. Mental health in all policies in contexts of war and conflict. *Lancet Public Health* (2019) 4. doi: 10.1016/S2468-2667(19)30208-7
68. Lund C, Brooke-Sumner C, Baingana F, Claire Baron E, Breuer E, Chandra P, et al. (2018) Social determinants of mental disorders and the sustainable development goals: a systematic review of reviews. *Lancet Psychiatry* 5 (4):357–9. doi: 10.1016/S2215-0366(18)30060-9

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"Hidden" and Diverse Long-Term Impacts of Exposure to War and Violence

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Nowadays, the PTSD diagnosis is often a prerequisite for the survivor's access to specialized treatment services and for obtaining legal recognition or financial compensation when exposed to violence. However, some survivors do not meet all necessary criteria for the PTSD diagnosis, particularly not in the long term. Therefore, they run the risk of being misdiagnosed, inadequately helped or undertreated, and may remain legally unrecognized and unprotected. In this article the "hidden" long-term impacts of exposure to war and violence, beyond the PTSD diagnosis, are presented, discussed, and illustrated with case presentations. They include dissociative states, attachment problems, personality changes, guilt, shame, rage, identity issues, moral injury, substances abuse, damaged core beliefs, and bodily sensations linked to stress activation. These phenomena are not persistent, but fluctuate over the survivor's life trajectories. Moreover, the "hidden" impacts are framed within theoretical models for understanding long-term impacts of exposure to violence. The models help us grasp the dynamics of interactions between resilience, psychological damage, context and time. These interactions are non linear, and contingently result in development of psychopathological phenomena when reaching a threshold during a process of accumulating potentially traumatic experiences over a survivors' lifetime. Understanding psychological impacts of exposure to violence as a spectrum of interchangeable phenomena over a lifetime, and learning to recognize the "hidden" manifestations of psychological trauma will help to improve mental and legal assistance to the survivors both on a short and long term.

Keywords: trauma, stress, posttraumatic stress disorder, war, violence, diagnosis, resilience, long term

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INTRODUCTION

Exposure to life-threatening events can cause psychological problems, and, at some point, most people will be exposed to one or more of such events in their lives (1). The posttraumatic stress disorder (PTSD) is a diagnostic category (2) constructed with the aim to capture these problems in individual survivors of trauma. According to a body of research (3, 4), the prevalence of PTSD varies from 1 to 40%, depending on the populations examined and the types of traumatic experiences they have been submitted to. More specifically, in refugee survivors of war and violence, prevalence of PTSD ranges

from 12 to 34% (5). PTSD typically co-exists with other forms of psychopathology, and 90% of survivors with PTSD have at least 1 lifetime comorbid disorder (3). The most prevalent comorbid conditions are depression, alcohol abuse or dependence, and another anxiety disorder, and there is increasing evidence for co morbidity with a borderline personality disorder (6). In 38.2% of military and 15.3% of civilian cases, PTSD can occur in a delayed form, years after exposure to traumatic experiences (7).

Research with the US veterans population (8) shows that many veterans do not seek treatment for PTSD. They perceive social stigma for suffering from a mental health adversity as the main barrier to seek assistance, together with institutional factors, like having a perception of not "fitting into" the care system, having doubts about treatment staff' sensitivity and skills, and experiencing logistic barriers. Further, the more severe mental health problems are, the more difficulty veterans and other trauma survivors seem to have in navigating the complexities of accessing care (9, 10). Research on accessibility of care for trauma survivors among immigrants shows that this heterogeneous group also faces substantial obstacles in accessing health care services (11). Based on a longstanding clinical experience in the Netherlands and recent research in several European countries (12), we hypothesize that the barriers for the refugee population in host countries are even higher, as many treatment facilities are reluctant to assist them because of communication problems (i.e. interpreters should be paid by the facility), and a lack of experience with assisting clients with other cultural backgrounds. Also, the highly specialized trauma treatment facilities often only accept clients presenting themselves with PTSD, and exclude those suffering from other mental health adversities when exposed to traumatic experiences. The treatment itself is often following a trauma-focus protocol and the intervention usually shows a lack of sensitivity for contextual issues in daily lives of clients.

Although the PTSD framework has helped to understand the impacts of exposure to traumatic experiences, and has produced significant advances in the knowledge about aetiology, prevalence and treatment of post traumatic psychological phenomena, it has also been criticized for promoting a medicalised and a reified perspective of post traumatic psychological impacts, and for being culture-insensitive (13, 14). The dominant emphasis on PTSD in current research and literature, has also been denounced for simplifying human reactions to traumatic experiences to a binary distinction between pathology (PTSD) versus absence of it (15), while at the same time, clinical practice shows that survivors of trauma can present with a wide range of psychopathological phenomena over their lifespans. These phenomena mirror different aspects of survivors' (mal)adjustment to post traumatic impacts. These aspects, the "hidden" impacts of trauma, are still insufficiently understood, and should receive a more prominent place in future research.

FRAMING PSYCHOLOGICAL IMPACTS BEYOND PTSD

Over the past decades, several theories and conceptualizations have been developed to come to grips with the complexity of psychological posttraumatic impacts beyond the PTSD paradigm. These models consider the complex interplay of multiple and reciprocal psychosocial, policy-related and ecological factors that simultaneously impact on the key domains of survivors' lives (16), and subsequently determine their psychological reactions.

The concept of cumulative trauma (17) introduced the dimensions of time and the interactive relationship between an individual and his/her ecological surroundings into the discussion regarding trauma, thereby transforming the event (traumatic experience) into a process over the survivor's life trajectory.

The concept of sequential traumatization (18) stressed that ongoing changes in the environmental/historical context of the individual survivor interact with traumatic experiences over time, recognizing that the quality and quantity of traumatic sequences can differ in various contexts and at different times across a lifespan.

Conservation of Resources (COR) theory (19, 20) viewed loss of resources when exposed to traumatic experiences as the key component in the process leading to development of mental health problems. According to this theory, individuals accumulate resources in order to accommodate, withstand, or overcome threats. These resources are personal, such as self-esteem, material, such as money, and conditional, such as status and social support. Stressful or traumatic events consume these resources, and augment one's sensitivity to subsequent stressors. COR theory analyses a flux of resources at times of stress, and provides a framework for comparing the relative loss of resources with risk of adverse mental health outcomes.

As the PTSD concept is criticized for a lack of cultural sensitivity, the framework of Social Constructivism (21) was developed. It stressed the importance of understanding survivors' worldviews or life experiences as they are rooted in their specific cultural contexts (the insider, emic perspective), instead of looking for universal truths (the outsider, ethic perspective) while trying to understand the complexity of posttraumatic damage. It also accentuated the role of the process of giving meaning in mediating human responses to life adversities. The framework pointed to the importance of focusing on local idioms of distress, identification of local mental health concerns and priorities, understanding the effects of organized violence on multiple levels of the survivor groups cosmology or world views (in relation to the family, community, and society), understanding of local patterns of help-seeking behaviour, and last but not least, identifying local resources that can promote healing and adaptation, and thereby create context relevant intervention strategies.

The Integrative Contextual Model (22, 23) for understanding, and assessment of post trauma mental health consequences merged the developmental and the ecological perspectives. This model perceives a mental health problem as a consequence of imbalance between sources of psychological resilience and damage, which are rooted in all levels of survivor's ecological environment. This balance may change over time, as the dynamic of the relationship between mental health problems

and context is bidirectional. In order to understand the complexity of this relationship, one should be guided by a string of causation principles and grasp the logic of fluctuation of psychopathology over survivor's life trajectory.

Bonanno et al. (24) and Bonanno and Mancini (15) challenged the assumption that aversive life events produce a single homogeneous distribution of change over time, and identified a heterogeneity of responses in individual survivors. These unique trajectories of adjustment in the aftermath of potentially traumatic events (PTEs) are: resilient trajectory, gradual recovery, delayed reactions, and chronic dysfunction. These authors advocate a dimensional rather than a categorical structure of individual responses after trauma.

The Adaption and Development After Persecution and Trauma (ADAPT) model (25) helped understanding comorbid psychopathological patterns in relation to the distinct pathways arising from disruptions of a combination of the five core psychosocial pillars after trauma. These pillars are: safety, integrity of bonds and networks, systems of justice, roles and identities, and systems of meaning and coherence. It suggested that identifying the links that connect the disrupted psychosocial domains with the manifestations of psychopathology of the individual and the capacity of the individual and its collectives to mount effective adaptive responses, is key to achieving a comprehensive understanding of the survivors' needs and to the designing of suitable interventions. For example, severe and persisting insecurity may perpetuate PTSD symptoms, multiple traumatic losses, separations and material deprivations resulting in prolonged grief, separation anxiety and depression. A perception of injustices on the other hand tends to generate persisting anger.

The Development-based Trauma Framework (DBTF) (26) pointed out that the linear dose-dependent model for understanding posttraumatic impacts is insufficient in explaining the risk for developing psychopathology, and stressed the relevance of non-linear dynamics in a threshold model. Also, the model includes the notion of Cumulative Trauma Disorder (CTD) as a framework for chronic and cumulative effects of trauma, and an alternative for the PTSD concept. CTD was described as a trans-diagnostic cluster which may encompass a wide range of psychopathological phenomena comorbid with PTSD, such as psychosis, dissociation, depressive, anxiety, and somatisation disorders, and memory and executive function deficits.

Building on the previous theories, we suggest the following model for understanding the complexity of posttraumatic responses over the survivor's life trajectory.

To begin with, we conceptualize mental health of an individual as a balancing act of protective resources and risk factors. Both protective resources and risk factors are rooted in all levels of the ecological and social environment: the micro level (disposition, personality), the meso level (family interaction and support, community, working environment, social life), the exo level (broader social and political environment), and the macro level (spirituality, (sub)culture, belief system, ideology) (27).

As long as the "vulnerability scale" remains balanced, individuals will have a good mental health although they have been impacted by adversities in their lives and may have temporarily presented with symptoms of psychopathology. In case of imbalance of the "vulnerability scale", the balance can be re-established by receiving interventions focussing on "healing" of the damage (such as psychopathology) and enhancing protective resources, as both types of interventions will strengthen resilience.

When a PTE strikes the ecological environment, it can cause damage on all of its levels. In the following paragraph, we will focus on the micro level only, and comment on the long-term mental health consequences of exposure to PTEs.

Because each individual adjustment following a PTE is the outcome of a unique, cumulative mix of person-centred and socio contextual risks and protective factors (28), four different types of reactions can be observed in survivors (24). The resilient type will experience no or just few symptoms of sub threshold psychopathology. The recovering type will develop initial symptoms and may cross the threshold for the acute stress disorder or the PTSD diagnoses, but this will soon be followed by complete recovery. The delayed type will develop symptoms of distress and even cross the threshold for PTSD when exposed to a PTE, but will not fully recover. Over the life trajectory, the sub threshold PTSD symptoms will at times be present, they show a tendency to worsen over time (7), and evolve into PTSD at a later stage. Research has shown that delayed PTSD seems to endorse prodromal symptoms with a progressive addition of symptoms over time, and intervening stressful events during life precipitate its onset (29). Also, studies have demonstrated that individuals with sub threshold PTSD experience impairment in their daily lives (30). Finally, the chronic type will develop PTSD when impacted by a PTE, and will keep suffering from an ongoing level of distress over time.

The "hidden" impacts of exposure to PTE's are observed, particularly, in the delayed type of reaction. These individuals may present themselves with different and changing types of symptoms during their life trajectories, and may at times be diagnosed with "full-blown" psychopathology other than PTSD. We hypothesize that the efforts these individuals invest in coping with their subthreshold PTSD complaints may result in the advancement of dissociative states, attachment problems, personality changes, guilt feelings, shame and rage, identity issues, moral injury, damaged core beliefs, and bodily sensations caused by chronic stress activation. However, these psychopathological phenomena are not persistent, like in the complex PTSD (31), but interchangeable, and they may ebb and flow over the course of life. They resemble the trajectories described earlier as the developmental trauma disorder (32) in children with complex trauma histories. These children are given a range of "comorbid" diagnoses, as if they occur independently from the PTSD symptoms, although they mirror the pervasive effects of trauma on child development. The "hidden" impacts are often hidden for both the survivor and the therapist. The survivor is not aware of a causal relation between these impacts and the exposure to PTEs over his/her lifetime.

We hypothesize that both, the resilient and the recovering types, have an adaptive coping and low vulnerability. These

characteristics are, among others, rooted in a stable childhood. A recent study (33) supports this notion showing that a child growing up in a supportive family can have lifelong protective effects, whereas a conflicting and unstable one can construct lifelong patterns of pessimistic appraisals and result in increased vulnerability to PTSD symptoms in later life. The same research supported the conception that the same PTE can have positive and negative outcomes, depending on contextual factors. In both types mentioned, resources, as defined in the COR theory, remain available over time. Moreover, resilient individuals have the capacity for generative experiences and positive emotions despite adversity (34). The delayed type is characterized by medium vulnerability and a maladaptive coping, while the chronic type has a maladaptive coping, and a high vulnerability. In these last two types, resources remain scarce over life. Also, the chronic type may present itself with the chronic form of PTSD or with the complex PTSD (31), as in survivors of both early childhood trauma and other traumatic experiences, such as exposure to war and persecution, later in life (35).

Taking the developmental perspective into account, we suggest that individuals with the resilient and the recovering trajectories will maintain their types of adjustment during their life as long as they will not be confronted with an overload of ongoing and chronic stress and they will be able to keep their protective resources. In failing to do so they can develop other psychopathology, and they run the risk of developing the delayed or chronic types of reactions. Earlier research (36) has suggested that high levels of resilience are only present up to a certain point of threat or loss, and when the threshold is reached resilience to stress weakens and even disappears. Accordingly, a linear increase in the risk for PTSD development in relation to increasing frequency of PTE exposure has been documented (37). However, other research (38) suggests that there is more stability than change in resilience over a longer period of time, meaning that resilient individuals may preserve their capacities for resilience even when repeatedly exposed to PTEs during their lives. As the resources required for resiliency are acquired and aggregated across the lifespan, the amount of resources an individual assembles during his/her life is proportionately dependent on their availability (39).

The ongoing stress in an instable environment of the delayed and the chronic types, together with their vulnerability grade, coping styles, and limited availability of protective resources, seems responsible for the maintenance of symptoms over the life trajectory, combined with the decline of resilience by increased intensity or continued trauma exposure (40). Regarding the impact of the ageing process on vulnerability, some studies (41) predict that old age is related to increased vulnerability to PTEs, because of the lack of psychosocial resources together with obstacles to using them (42). Other studies (43) suggest that older survivors may become more resilient and express a posttraumatic growth (44). This growth might be related, over time, to the strengthening of a survivor's identity through development of a deeper sense of meaning, spirituality and closeness with others.

Last but not least, we suggest that the delayed and the chronic trajectories may, ideally, alter towards the recovering one when survivors receive adequate mental health assistance that focuses on the original traumatic experience which tangled the trajectories in combination with interventions directed at strengthening their resilience capacities. This can even be the case when survivors present themselves with other, the "hidden" psychopathological phenomena. We call this the upwards shifting according to the model presented in **Figure 1**. However, this is a time consuming process as a rich reservoir of resources should be built in order to protect the survivor. Since research suggests that the accumulation of resource losses is more rapid and powerful than the accumulation of resource gains over time (39), this endeavour in treatment may sometimes resemble "running against the wind".

In the following paragraph, we will focus on the delayed type of reaction to PTEs and describe different "hidden impacts" of PTEs on survivors' mental health.

CASE 1—ROSA: THE LADY WHO DESTROYS BISCUITS

Rosa was referred by her general practitioner to a psychologist for burnout complaints and psychosomatic symptoms. She is a fifty-five year old woman originating from Azerbaijan and living in the Netherlands since 1994. Her complaints started three years before the referral, when she dropped out of work as a quality officer in a pastry factory. At her workplace, Rosa was very dedicated and often worked long hours. The factory, originally a family business, was taken over by an investor. This led to changes in the corporate culture resulting in exploitation, misbehaviour and loss of quality of the pastry. Rosa was unable to cope with these changes and this led to a halt of her work. She developed stress reactions that manifested themselves in allergies, bad sleep, fluid retention, and weight gain. In addition she also suffered from anger outbursts at unexpected moments, which she found very shameful.

In the initial phase of her treatment, Rosa insisted on speaking about the losses she experienced in the pastry factory out of the conviction that this was the main cause of her complaints. She casually disclosed that she had destroyed biscuits made in the factory in various stores. Although she felt ashamed, she also explained this behaviour as an act of justice, as she found that the quality of the biscuits had deteriorated after she left her work. In this way Rosa expressed her anger and coped with the loss of her workplace. At the time that Rosa dropped out of her job, huge numbers of refugees fleeing the civil war in Syria were entering the Netherlands. They were housed in temporary accommodations and also in her place of residence. Meeting them in the shopping centre and seeing empty looks in the eyes of some of them filled Rosa with horror and physical disgust. Although being a refugee herself, she confessed, she did not have empathy for the newcomers.

In the next sessions, Rosa's background was carefully explored. She was born in Baku, the capital city of Azerbaijan,

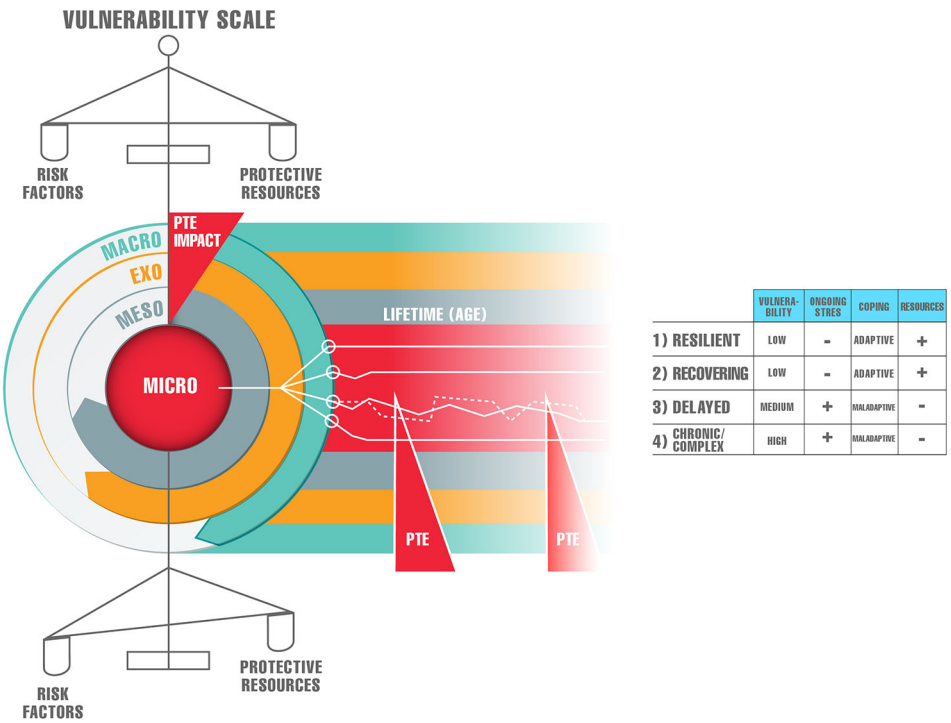

FIGURE 1 | Heterogeneity of long-term impacts of potentially traumatic events (PTEs).

in an educated and open minded ethnic Azeri family. She has a two years younger brother. She shared having a normal psychosocial development in her youth and adolescence, and being brought up by caring and loving parents. Her brother moved to Canada in 1987 to study, married a Canadian, got two daughters and build a career in computer business. In the late 1970s, Rosa married Vartan, a now fifty-six year old ethnic Armenian man, also originating from Baku. Vartan too was brought up in a family with a tradition of being open minded. They set out to build a family in a country where ethnically mixed marriages were not commonly accepted. Their only daughter Sofia was born in 1989. Rosa acknowledged that she has a similar character to her, being highly sensitive and open to other people.

In the first sessions Rosa remained aloof while sharing about her past, only starting to report in more detail about her life when she realized that the therapist was well aware of what happened in Azerbaijan in the 1990s. Then she shared that she was working at the police department of Baku as a Special Victims Unit (SVU) detective for five years in the 1980's, until she was advised by her superior that it would be better for her to quit this expertise. He was concerned and feared that she would drop out with physical and psychological complaints as a consequence of the nature of the work as a SVU detective. At the time she suffered from somatic problems (specifically, allergic manifestations) probably as a result of her detective work in which she was confronted with many horrible scenes of death and violence. Rosa was transferred to the police financial investigation department. Further exploration of the details of her physical condition at that time showed that the physical complaints after dropping out as a SVU detective resembled the current complaints of allergy and other physical ailments. This physical response was for the therapist the first indication that there might be hidden trauma-related problems in Rosa's past.

Rosa, together with the therapist, continued exploring her past in greater depth. In January 1990, at the time of the breakup of the Soviet Union, pogroms against Armenians broke out in Baku. Being a police officer, Rosa had officially the task to intervene in cases of breaking the law, but at the same time she was ordered by her superiors to stay at a distance while witnessing Armenian compatriots being molested, tortured and even killed by organized gangs. Because of these pogroms, her husband and his family were forced to leave to the neighbouring country of Georgia, leaving Rosa alone with her then one year old daughter. Due to communication problems, as there were no cell phones and internet back then, Rosa and her husband lost track of each other. Rosa, unsure of her husband's whereabouts, also decided to leave Azerbaijan in the course of 1990, and joined her brother and his family in Canada. She was dedicated to build a new live with her daughter Sofia. The migration brought a lot of uncertainty with, she coped with it by working as many hours as possible, and eventually succeeded in building a successful career as a manager at a fraud prevention institute. After eleven months of residing in Canada, she learned *via* the Red Cross tracing agency that Vartan was alive and was, in the meantime, accepted as a refugee in the Netherlands. In the following 4 years, they

visited each other and travelled back and forth between the Netherlands and Canada. Eventually they decided, after much deliberation and thinking, to reunite as a family in the Netherlands. Rosa left her newly attained world in Canada, her good job and career prospects, for an uncertain life of a migrant in the Netherlands. Initially, she set out as mother, raising their daughter, and learning the Dutch language from other mothers "at the fence of her daughter's schoolyard". This lifestyle prompted complaints of gloom and brought back unwanted memories of Rosa's past in Baku. However, when the family moved to their current place of residence, she found a job at the pastry factory, where she soon evolved to the status of quality officer and functioned well prior to the takeover by the investor. She could work hard again and be less preoccupied with her past. Simultaneously with dropping out of her job, Rosa was also confronted with the empty looks in the eyes of Syrian refugees. These reminded her of the looks she encountered in the victims of the pogroms in Baku. In the therapy sessions Rosa started to explain in more detail about the events she witnessed in that period, including finding the mutilated corpse of her former violin teacher murdered by the looting gangs.

Well into the therapy, Rosa opened up about her worries, and revealed her shame and guilt about her ethnicity in relation to what had happened in Azerbaijan. She therefore remained very reluctant towards the Armenian community in the Netherlands despite her mixed marriage. It also became clear that Rosa and Vartan never spoke about the consequences of the political turmoil in their home country on their lives. This was a silent agreement between them.

In terms of this article, Rosa is a good example of the "hidden" impacts of trauma. She was referred with unexplained physical complaints and a burnout, implying that a standardized cognitive behavioural therapy aiming at reduction of these complaints should be applied. Only by careful exploration of her life trajectory, building trust by showing familiarity with her background, and taking time to explore her past in detail, a link between her trauma-related background and her current complaints could be established. Several PTEs had a great impact on Rosa's life. Her work as a SVU detective appeared to be the core of her current somatic complaints (allergic reactions), and an individualized expression of the "the body keeps the score" concept. Also, her experiences with the pogroms in Baku, the memories she thought she had left behind, were kept covered for many years by working as many hours as possible. Her work as a police officer during pogroms, as this was laden with guilt and shame, was connected to her current isolation from her fellow citizens in the Netherlands. Relocation from Canada to the Netherlands and the loss of her professional career for the second time were also experienced as stressful life events causing imbalance on the vulnerability scale. Finally, she never spoke with Vartan about the turmoil in Azerbaijan as a manner to deal with its impacts.

In the treatment, Rosa steadily developed insights into the intertwining of her complaints and her background, and was involved in the process of giving meaning to her current suffering. Because of the strong relation between the PTEs and her physical complaints, Somatic Experiencing (SE) therapy was applied later on, with the aim to learn to tolerate and understand her physical experiences. SE was combined with individual client centred psychotherapy and EMDR. The treatment resulted in a significant reduction of Rosa's physical complaints and her sleeping problems. Her anger at the refugees in her residential town also diminished, and Rosa stopped destroying biscuits in the stores.

CASE 2—PETER: THE FORMER NGO WORKER ON A "WARPATH"

Peter is a sixty-four year old man who was referred for treatment of mood complaints. He was a field professional at different non-governmental organisations (NGO's), and led many missions, such as to war-torn Bosnia and Cambodia, and in the aftermath of the Tsunami in Thailand in 2004. In his professional career he experienced several life-threatening situations and was confronted with death in different forms. He lost colleagues due to accidents, murder and suicide. However, at the start of the therapy Peter does not report being burdened by these experiences and losses. First and foremost, he describes his anguish over bureaucracy and courses of action that he did not agree with, and that were taken at the time he was in the field. He preferred working intuitively, and from the view of trying to understand a crisis situation from a local perspective, a method that proved to be conducive. He felt a strong connection with his team members, but ran into conflict with his superiors about everlasting bureaucracy and, in his opinion, wasting of funds. As the years went by, bureaucracy got worse instead of better and Peter found it increasingly difficult to find his place in the organization. He stopped working three years before the start of the treatment. Since then he follows the news about NGO's fervently and still gets angry about how crises all over the world are tackled by them. At the same time, a mixture of positive and negative memories related to his working past are triggered. This confuses him and makes him sad. He also misses the meaningfulness of his professional life.

Peter suffers from mood swings and anhedonia already for half a year, he is often at home, and has trouble absorbing the daily routine. However, he still enjoys spending time with his grandchildren. His appetite is normal, and he does not report having sleeping problems. In his whole life he has never experienced nightmares or flashbacks related to the missions and the threatening life events he has faced. Sometimes he suffers from irritability and can have an outburst of anger, mostly when he perceives that injustice is done.

In the first sessions Peter was diagnosed with a persistent depressive disorder arising from excessive thinking and worrying about the predicaments linked to his professional career. He was, in particular, wrestling with many questions and moral dilemmas connected to his work at the NGO's. These can be framed within the moral injury concept, defined as "the enduring psychological, biological, spiritual, behavioural and social consequences of perpetrating, failing to prevent, bearing

witness to, or learning about acts that transgress deeply held moral beliefs and expectations" (45, p. 697).

In the following sessions, more attention was paid to Peter's early psychosocial development in which no irregularities were found. Peter inherited a strong sense of justice from his upbringing. This brought him already at a young age into conflict with teachers and other authorities. However, this oppositional behaviour was not pathological to the extent that it would have met criteria for a personality disorder. Rather, it seems to be a character trait which causes that Peter is not always liked by others because of his criticism, but it does not appear to play a negative role in his family life and in relation to close friends. While recalling certain events linked to the missions, it was noticed that Peter would sometimes show strong emotions, mostly sadness and tears. However, these emotions would dissolve within seconds, morphing into expressing his anger about certain bureaucracy issues surrounding these events. This formed an indicator that "hidden" problems were present and they did surface later on in the treatment. Peter inclines to ignore and suppress his emotions in contact with people, mostly by moving a discussion to another topic, a phenomenon that often occurred in the sessions. Afterwards when he is alone, he rethinks the topics of a conversation, and only then he starts experiencing the corresponding feelings often resulting in rumination and a depressed mood.

Further in the treatment, his thoughts and ideas about certain events during the missions were explored more in-depth. Through this process, it became apparent that Peter suffered both from moral issues regarding politically motivated decisions and acting of his superiors which were not always in the interest of the local population, and from the shocking events which he had personally experienced. In this probing process Peter also began to realize that his way of coping showed similarities with the coping mechanisms of the people he reached out to as the NGO professional, survivors that showed no emotions in the middle of a catastrophe and just went about their daily business. Peter came to realize that his work confronted him with seriously impacting life events. He dealt with the impact of these events by comparing himself to the victims and labelling his own experiences as insignificant in comparison with theirs. When Peter came to full realisation of this defence mechanism, he unexpectedly developed sleeping problems, nightmares and re-experiencing of the work related events (PTEs). At that point in the treatment, Peter underwent for the first time emotions related to the events experienced in the past. It was an enlightening and cathartic experience for him. Nevertheless, it also made him upset because he realised that he was about to develop a full blown PTSD, a condition which he thought he will never suffer from.

Peter experienced numerous PTEs. The loss of several colleagues seemed to have had the strongest impact on him as many of them became close friends over the years. The knowledge that the suicides of his colleagues were a result of their inability to cope with constant horrors, was something Peter didn't want to face or think about until he was confronted with his avoidance in the therapy. He came to acknowledge that this fear came too close to his own anxiety related to losing control and committing suicide. Realizing that his own emotions were genuine and authentic responses to extreme experiences he had faced, helped Peter to find balance again. The depressive feelings were reduced to a great extent. Further, psycho education regarding the moral injury concept helped him realize that his anger, originating from the moral injuries, protected him from strong emotions linked to many personal losses over the last decades. Engaging into fights and disputes with his superiors was, even though justified in terms of content, an emotionally inadequate way of coping with the horrifying experiences and losses. The PTSD symptoms which emerged in a course of the therapy were successfully treated with EMDR.

Peter is an example of the delayed type of trajectory, where a lack of giving meaning to experiences, in combination with maladaptive emotional coping and withdrawal from active work, led to evolving depressive symptomatology and, temporarily, to a full-blown PTSD. Moral issues played a significant role in the emergence of Peter's mood complaints, as he was coping with consequences of political decisions impacting his daily work, and with feelings of powerlessness to influence them. However, frustration about the moral dilemmas also acted as a camouflage for authentic and painful emotions arising from multiple life threatening experiences he had accumulated over time.

Peter did not develop a PTSD earlier in life, even though he was confronted with many PTE's. PTSD symptoms developed only when Peter became aware of his emotional coping style. It remains an open question whether Peter would have developed PTSD at a later stage in his life without being triggered by the treatment? However, it remains the fact that Peter got referred because of suffering from mood complaints and a poor quality of life, something that changed significantly for the better at the end of the therapy.

CASE 3—BEHROOZ: THE AGGRESSIVE IRANIAN MAN WITH ATTENTION DEFICIT HYPERACTIVITY DISORDER (ADHD)

Behrooz is a twenty-seven year old man originating from Iran and residing as a refugee in the Netherlands. He was referred by a general practitioner with complaints of impulsivity and aggression outbursts. He was suffering from these problems for many years, but has not sought help earlier. The practitioner suspected Behrooz from ADHD, and asked for diagnostics and treatment. At time of the referral, it was unknown how and when Behrooz ended up in the Netherlands. The only information available was that he had lived illegally in the country for a long time, and that a residence permit was granted to him four years earlier, when the immigration department legalized all illegal immigrants through a general pardon.

During his first interviews, Behrooz stood out because of his loud speaking and agitated behaviour. He was, in particular, angry about the way the Dutch society and politics had treated him. As Behrooz gained more confidence in the therapist, and

realised that he was not unfamiliar with the lengthy and impersonal asylum procedures and their impacts on an individual, he started to disclose more about his remarkable past.

Behrooz was born a few years after the Islamic revolution in Iran. His family was liberal and had been politically active for generations. As the youngest son, Behrooz started to participate in their political activities already at a very young age. He attended secret meetings and helped distributing leaflets in the streets. At the age of twelve, he was arrested and jailed by the Iranian secret service. He was brutalized and tortured for days, until he was released because his family had paid a ransom. Shortly after his release, the family arranged for Behrooz to leave Iran illegally and escape to neighbouring Turkey *via* the mountains. This turned out to be a frightening experience because he got lost on the way, and failed to meet the contact person who would guide him across the border.

In the therapy sessions, Behrooz denied being bothered by these events. He stated repeatedly that so many people from Iran had similar experiences. He felt he was no exception and therefore should not be bothered by them. In Turkey, he eventually found domicile with an older man who gave him odd jobs, such as collecting scrap metal and selling it, in exchange for food and lodging. In company of this man Behrooz found protection and a sort of mentorship. This was important as he was still young, separated from his family, and illegally in the country with no rights whatsoever. Behrooz quickly got streetwise, learned about how to survive, and became a specialist in small businesses and arranging odd jobs for others.

At the age of sixteen, his family in Iran informed him that the Netherlands has a separate asylum procedure with extra protective rules for minor refugees and that within this procedure his chances to be recognized as a refugee were substantial. They advised him to leave Turkey and join an aunt who was already living in the Netherlands for more than ten years. On arrival and asking for asylum, Behrooz was placed in a small-scale shelter, got a mentor and went to school, where he learned Dutch fluently in a short period of time. However, his asylum procedure did not fare well. The immigration authorities did not believe his narrative of flight and his request for protection, partly because of the young age at which he claimed to have been politically active and because of the length of time he had spend in Turkey.

As a consequence, Behrooz was forced to leave the shelter immediately after his eighteenth birthday and, yet again, forced to find his way in illegality. He lived as a squatter for five consecutive years. He was seriously disappointed and outraged, as this situation reminded him of the time he had spend in Turkey. Moreover, he had developed different expectations about his future in the period he was accompanied as a minor asylum seeker. At the age of twenty-three Behrooz was finally granted a residence permit within a general pardon. He expected to be happy, but on the contrary felt seriously disappointed in himself and what he had achieved in life. Due to illegality he could not complete a vocational training and was obliged to find a layman's job as quick as possible or all his social benefits would be stopped.

When the therapist inquired about his complaints, Behrooz indicated that he was mainly concerned about the fact that he had so little self-control and that he could rapidly become extremely verbally aggressive to other people. He felt very guilty and ashamed about it. In these outbursts he would accuse the other of being unreliable, lying and intentionally aiming to harm him. He added that being out of control also terrified him, because he had not any recollection of what had been said by himself or by others afterwards. This led to the hypothesis that he experienced dissociative phenomena (which was later confirmed in the therapy). The suspected ADHD was confirmed by a diagnostic interview, and extensive inquiries were made on PTSD. However, Behrooz denied suffering from nightmares or other re-experiencing phenomena. He insisted on being angry over the particular period in his life when he fought for the residence permit and felt abandoned by the Dutch society and the minister of immigration.

The first intervention in a course of the treatment was to prescribe Behrooz a psycho stimulant (Dexamfetamine). This lead to reduction of the sensation of chaos in his head and a better control of emotions. Medication also caused that he became more accessible for constructive exploration of his life and emotions as he no longer got overwhelmed by anger during the sessions.

Eventually Behrooz started to share his experiences from Iran and Turkey, and admitted for the first time that he has also occasionally suffered from nightmares for many years. As it turned out, he consciously wanted to keep that information to himself, because he developed a personal theory about the function of his nightmares. He suffered from them from the age of twelve, and believed that the nightmares were a way of dealing with his past. He also had the expectation that they would disappear when he worked through them. After re-evaluation of his complaints, the therapist concluded that Behrooz fulfilled criteria for the PTSD diagnosis and an inventory was made of his traumatic experiences.

Behrooz received psycho-education about the symptoms of PTSD, such as hyper arousal and its similarities and differences with hyperactivity and impulsivity complaints of ADHD. These symptoms are often difficult to distinguish in patients with both disorders, especially in those who have been traumatized at a young age. In the follow-up sessions, the traumatic recollections were treated with EMDR. As a result, the nightmares disappeared and Behrooz also reported changes in his state of hyper alertness, a phenomenon he was never aware of as he had grown up with it and did not know better. After the trauma-focus treatment, Behrooz continued with his therapy and contributed a personal signification to his experiences. He redefined the survival skills he mastered in the forming periods of his life to personal capacities. Behrooz achieved a so-called posttraumatic growth. He began to create a newly balanced personal and professional future in which he started a vocational training as an electrician. The therapist played hereby an important role, advocating for Behrooz with the local government which paid the costs of the training.

The rationale for development of specific symptoms in the course of Behrooz's life only became apparent when the therapist was able to build a trust relationship and together with Behrooz carefully and patiently map his personal history. He originated from an action-oriented family, had an inherited disposition to ADHD, and was tortured and traumatized at a very young age, leading to the evolution of survival strategies and dissociative phenomena of which he himself was unaware. As it showed during the therapy, his way of living was dictated by coping with PTSD with dissociative characteristics, expressing themselves in impulsivity and aggression. From the moment he got a residence permit, Behrooz relaxed and had more time to think and reflect on his life. Disappointment about what he had achieved dominated his thoughts, and the unanticipated continuation of his impulsivity and aggression drove him to find help. Although Behrooz has already made great progress in his therapy, the process is still not completed as the psychological damage inflicted at a young age demands prolonged consolidation and help in shaping a stable personal and professional future for himself.

TREATMENT IMPLICATIONS

The life trajectory of survivors with the delayed type of reaction to aversive events resembles a journey through a "field of landmines", as these individuals seem to have to walk on their toes throughout life in an attempt to cope with psychological and other impacts of exposure to ongoing PTEs. These survivors try to avoid feeling the essence of being profoundly changed by the impacts of their traumatic experiences: feeling powerless and abandoned, losing control over their existence, and in the most extreme cases experiencing the "soul murder" (46), the breakdown of the most basic foundations of humanness. As exposure to trauma may have changed their core beliefs, and survivors start to experience the world as malevolent, meaningless, and anxiety provoking, they develop ways of avoiding this anxiety, many of which are likely problematic on a long term (47). Since these problematic behavioural and cognitive coping strategies fail to protect survivors from anxiety on the long term and keep them from integrating the trauma in their autobiographical memory, survivors' negative self-appraisals relating to the original trauma event and/or subsequent coping attempts become more prominent, creating a vicious circle and provoking more anxiety and feelings of unsafety. After years of struggling to maintain psychological balance at a high cost, these individuals may finally decompensate and develop the "hidden" psychopathological impacts of trauma. Eventually, given the accumulation of PTEs over life together with failing of adaptive protection mechanisms, these survivors may further deteriorate and develop PTSD with delayed expression later in life. In other words, these individuals wrestle with the impacts of traumatic experiences for a long time. They seem to be relatively unharmed by them to the point of no return. Then, they crush under the allostatic load (48) leading to development of physical and emotional damage, and pay a toll for functioning in a "survival mode" for years.

We suggest that the core aims of all psychotherapeutic interventions for survivors of war and violence are to help them to regain control over their lives, restore self-efficacy and a sense of agency, reattach with humanity, give meaning to traumatic experiences and suffering, and regain hope for the future. These therapy aims go beyond the goals of simply reducing symptoms of PTSD, depression, and other comorbid conditions, although reduction of symptoms and associated suffering are important. More material on the fundamental ingredients of establishing and maintaining a fruitful therapeutic relationship with survivors of war and violence can be found elsewhere (49).

In cases where clients present themselves with the "hidden impacts", and where a delayed trajectory has being established through a careful anamnestic examination of life stressors, traumatic events, sources of resilience, and coping efforts over their lifespan, the "original" traumatic experience should first be identified. The next step should be to establish causal relationships between the index trauma and other psychopathology a survivor has suffered from later in life. Through this process, a shared explanatory model is created by the therapist jointly with the survivor, as this will help to give meaning and significance to a survivors' lifelong struggle with the trauma impacts from a developmental perspective. The current mental health problems are conceptualized as a reflection of the survivors' psychological imbalance, a mirror of their lifelong dynamic struggle between sources of resilience and damage. In the assessment phase, clinicians should be guided by the string of causation principle in understanding the development of mental health problems. This obliges them to pose the question why a survivor has developed a certain type of psychopathology at a specific moment in life, what protected the survivor from suffering earlier in life and which, previously present and effective, protective sources can be strengthened in order to help the survivor to restore balance of the "vulnerability scale" (49)?

Generally, the next move in treatment should be to identify and prioritise interventions which have to be applied. Mostly these are actions towards minimizing the impact of current stress, and/or those aiming at strengthening protective resources. Where necessary, psychotropic medication can be introduced in order to enhance control over current symptoms. The aim of these interventions is to direct the "vulnerability scale" closer to a balance.

Further, trauma-focus treatment targeting the index traumatic experience can be applied. All of the evidence-based trauma-focus approaches currently recommended (Narrative Exposure Therapy (NET), Eye Movement and Desensitization and Reprocessing (EMDR), Cognitive Behavior Therapy (CBT)) (49, 50) include exposure and cognitive restructuring components, while Somatic Experiencing (SE) (51) and Sensorimotor Psychotherapy (52) target traumatic memories rooted in the body. All these approaches can be intertwined with cognitive interventions aiming at providing a meaning to the impacts of traumatic experiences, and helping survivors to deal with issues of shame,

guilt and moral injury. The process of giving meaning to one's life trajectory should create congruency between survivor's global (core beliefs) and situational (initial appraisal of a traumatic event) meanings in terms of beliefs and goals. This is important in order to stop persistent rumination about the impact of a traumatic experience (53). Ideally, positive outcomes of this process are developing of new connotations, new coping skills, including cognitive coping skills, problem-solving and help-seeking skills, ability to control and regulate affect (54), and installation of a sense of hope for the future, dignity and coherence (55). Last but not least, as context enveloping the treatment process may change over time, it is important for the therapist to acknowledge these environmental impacts on the treatment strategies applied, and to keep shifting back and forth between the interventions aiming at reducing posttraumatic damage and those strengthening resilience capacities.

LIMITATIONS AND FUTURE RESEARCH AGENDA SUGGESTIONS

This article presents a theoretical model for understanding the long-term impacts of exposure to PTEs. It also discusses the mental health consequences of psychological trauma beyond the PTSD diagnosis, and suggests an alternative treatment approach to the "hidden" impacts. This article is based on clinical experience with several hundreds of survivors from Europe, Middle and Far East, Africa and the Caucasus region treated in outpatient settings in the Netherlands over the past two decades. Therefore, the main limitation of this article is a lack of sound scientific research supporting the suggested concepts and ideas.

However, data supporting different aspects of the theoretical models presented and discussed in this article are already available, but it seems virtually impossible to test all components of comprehensive models all at once. Studies that have examined the latent structure of PTSD symptoms using taxometric analyses have supported a dimensional structure (56–58). Other research (59, 60) has identified multiple, unique trajectories of adjustment in the aftermath of exposure to a PTE on the short and long term (61), showing that the availability of resources and the change in resources resulting from highly aversive life events play a crucial role in human adaptability to extreme stress.

Future research should in depth focus on the longitudinal trajectories of those impacted by PTEs taking into account the complex ecological and environmental factors that shape these trajectories. Therefore, trials should also include a local, emic understanding of trauma and psychological distress. Moreover, symptom outcomes should be expanded beyond PTSD and depression to include a range of comorbid and/or multidimensional "hidden" symptom patterns that can be observed in clinical work with the survivors. The non-symptomatic impacts, like changes in quality of life, resilience, social integration, behaviour (such as aggression) and inter personal relationships deserve more focus in future studies. The suggested treatment approach to the "hidden" impacts of PTEs should be tested by a combination of empirical and clinical knowledge with the ambition to ultimately find which blend of interventions might be the most effective, taking into account sampling and contextual factors that can influence outcomes.

SUMMARY

Impacts of exposure to war and violence are heterogeneous, and several different lifetime trajectories can be observed in the survivors. Moreover, the survivors can, on the long term, present themselves with PTSD and/or with a wide array of other psychopathological phenomena. These phenomena are not persistent, but they fluctuate over time, and are not always easy to link to the index trauma according to the string of causation principle. However, establishing a causal relation between the index trauma and the "hidden" impacts seems to be the first step in assisting survivors with their complaints. Further, we suggest that treatment of the index trauma leads to remission of the ''hidden impacts", and together with strengthening of resilience sources and minimizing of the current life stress, to reestablishment of the survivors' mental health balance.

AUTHOR CONTRIBUTIONS

BD, JR, and AM-J have all equally participated in writing the article. It should be noted that the case presentations are based on real clients, but modified for the purpose of respecting their privacy.

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REFERENCES

1. Karam EG, Friedman MJ, Hill ED, Kessler RC, McLaughlin KA, Petukhova M, et al. Cumulative traumas and risk thresholds: 12-months PTSD in the world mental health (WMH) surveys. *Depress Anxiety* (2014) 31:130–42. doi: 10.1002/da.22169
2. American Psychiatric Association (APA). *Diagnostic and statistical manual of mental disorders*. 5th ed. APA: Washington, DC (2013).
3. Kessler RC, Sonnega A, Bromet E, Hughes M, Nelson CB. Posttraumatic stress disorder in the National Comorbidity Survey. *Arch Gen Psychiat* (1995) 52:1048–60. doi: 10.1001/archpsyc.1995.03950240066012
4. Creamer M, Burgess P, McFarlane AC. Post-traumatic stress disorder: findings from the Australian National Survey of Mental Health and Well-being. *Psychol Med* (2001) 31:1237–47.
5. Steel Z, Chey T, Silove D, Marnane C, Bryant RA, van Ommeren M. Association of torture and other potentially traumatic events with mental

health outcomes among populations exposed to mass conflict and displacement. *JAMA* (2009) 302:537–49.
6. Pagura J, Stein MB, Bolton JM, Cox BJ, Grant B, Sareen J. Comorbidity of borderline personality disorder and posttraumatic stress disorder in the US population. *J Psychiat Res* (2010) 44:1190–98.
7. Andrews B, Brewin CR, Philpott R, Stewart L. Delayed-onset posttraumatic stress disorder: a systematic review of the evidence. *Am J Psychiat* (2007) 9:1319–26.
8. Quimette P, Wade M, Tirone V, Vogt D, Greenbaum MA, Kimerling R, et al. Perceived barriers to care among Vietnam veterans with posttraumatic stress disorder. *Psychol Serv* (2011) 3:212–23.
9. Davis RG, Ressler KJ, Schwartz AC, Stephens KJ, Bradley RG. Treatment barriers for low-income, urban African Americans with undiagnosed posttraumatic stress disorder. *J Trauma Stress* (2008) 21:218–22.
10. Menke R, Flynn H. Relationships between stigma, depression, and treatment in white and African American primary care patients. *J Nerv Ment Dis* (2009) 197:407–11.
11. Giacco D, Matanov A, Priebe S. Providing mental healthcare to immigrants: current challenges and new strategies. *Curr Opin Psychiatry* (2014) 27:1–7.
12. Priebe S, Matanov A, Barros H, Canavan R, Gabor E, Greacen T, et al. Mental health-care provision for marginalized groups across Europe: findings from the PROMO study. *Eur J Public Health* (2012) 1:97–103.
13. Bracken P, Giller J, Summerfield D. Psychological responses of war and atrocity: limitations and current concepts. *Soc Sci Med* (1995) 8:1073–82.
14. Patel N. Clinical psychology: reinforcing inequalities or facilitating empowerment? *Int J Hum Rights* (2003) 1:16–29.
15. Bonanno GA, Mancini AD. Beyond resilience and PTSD: mapping the heterogeneity of responses to potential trauma. *Psychol Trauma-US* (2012) 1:74–83.
16. Porter M. Global evidence for a biopsychosocial understanding of refugee adaptation. *Transcult Psychiatry* (2007) 44:418–39. doi: 10.1177/1363461507081639
17. Khan MMR. Das kumulative trauma. In: Khan MMR, editor. *Selbsterfahrung in der Therapie: Theorie und praxis [The concept of cumulative trauma]*. Kindler: Munchen (1977). p. 50–70.
18. Kielson H. *Sequential traumatization in children*. Magnes Press Hebrew University;: Jerusalem (1992).
19. Hobfoll SE. *Stress, culture and community: the psychology and philosophy of stress*. Plenum Press: New York (1998).
20. Hobfoll SE. The influence of culture, community, and the nested-self in the stress process: advancing conservation of resources theory. *Appl Psychol-Int Rev* (2001) 50:337–421. doi: 10.1111/1464-0597.00062
21. Miller KE, Kulkarni M, Kushner H. Beyond trauma-focused psychiatric epidemiology: bridging research and practice with war-affected populations. *Am J Orthopsychiatry* (2006) 4:409–22. doi: 10.1037/0002-9432.76.4.409
22. Drožđek, B. The rebirth of contextual thinking in psychotraumatology. In: Drožđek. Wilson BJP, editor. *Voices of trauma: treating survivors across cultures*. Springer: New York (2007). p. 1–25.
23. Drožđek B. Challenges in treatment of posttraumatic stress disorder in refugees: towards integration of evidence-based treatments with contextual and culture-sensitive perspectives. *Eur J Psychotraumatol* (2015) 6:24750. doi: 10.3402/ejpt.v6.24750
24. Bonanno GA, Westphal M, Mancini AD. Resilience to loss and potential trauma. *Ann Rev Clin Psychol* (2011) 7:511–35. doi: 10.1146/annurev-clinpsy-032210-104526
25. Silove D. The ADAPT model. *Intervention* (2013) 3:237–48.
26. Kira IA, Tummala-Narra P. Psychotherapy with refugees: emerging paradigm. *J Loss Trauma* (2015) 20:449–67. doi: 10.1080/15325024.2014.949145
27. Bronfenbrenner U. *The ecology of human development: experiments by nature and design*. 4th ed. Harvard University Press: Cambridge, MA (1981).
28. Rutter M. Resilience concepts and findings: implications for family therapy. *J Fam Ther* (1999) 21:119–44. doi: 10.1111/1467-6427.00108
29. Smid GE, Mooren TTM, Mast van der RC, Gersons BPR, Kleber RJ. Delayed posttraumatic stress disorder: systematic review, meta-analysis, and meta-regression analysis of prospective studies. *J Clin Psychiatry* (2009) 70:1572–82.
30. Marshall RD, Olfson M, Hellman F, Blanco C, Guardino M, Struening EL. Comorbidity, impairment, and suicidality in subtreshold PTSD. *Am J Psychiat* (2001) 158:1467–73. doi: 10.1176/appi.ajp.158.9.1467
31. Cloitre M, Courtois CA, Ford JD, Green BL, Alexander P, Briere J, et al. (2012). *The ISTSS Expert Consensus Treatment Guidelines for Complex PTSD in Adults*. Retrieved from http://www.istss.org/ISTSS_Complex_PTSD_Treatment_Guidelines/5205.html.
32. Kolk van der BA. Developmental trauma disorder: toward a rational diagnosis for children with complex trauma histories. *Psychiat Ann* (2005) 5:401–8.
33. Kang S, Aldwin CM, Choun S, Spiro A. A life-span perspective on combat exposure and PTSD symptoms in later life: findings from the VA Normative Ageing Study. *Gerontologist* (2016) 1:22–32.
34. Bonanno GA. Loss, trauma, and human resilience: have we underestimated the human capacity to thrive after extremely aversive events? *Am Psychol* (2004) 1:20–8. doi: 10.1037/0003-066X.59.1.20
35. Courtois CA, Ford JD. *Treating complex traumatic stress disorder: an evidence-based guide*. Guilford Press: New York (2009).
36. Bleich A, Gelkopf M, Melamed Y, Solomon Z. Mental health and resiliency following 44 months of terrorism: a survey of an Israeli national sample. *BMC Med* (2006) 4:21. doi: 10.1186/1741-7015-4-21
37. Dohrenwend BP, Turner JB, Turse NA, Adams BG, Koenen KC, Marshall R. The psychological risks of Vietnam for US veterans: a revisit with new data and science. *Science* (2006) 313:979–82.
38. Pat-Horenczyk R, Cohen S, Ziv Y, Achituv M, Brickman S, Blanchard T, et al. Stability and change in posttraumatic distress: a 7-year follow-up study of mothers and young children exposed to cumulative trauma. *J Trauma Stress* (2017) 30:115–24.
39. Hobfoll SE, Stevens NR, Zalta AK. Expanding the science of resilience: conserving resources in the aid of adaptation. *Psychol Inq*. (2015) 2:174–80.
40. Norris FH, Friedman MJ, Watson PJ, Byrne CM, Diaz E, Kaniasty K. 60,000 disaster victims speak: Part 1. An empirical review of the empirical literature, 1981-2001. *Psychiatr* (2002) 3:207–39.
41. Hall RCW, Hall RCW, Chapman M. Effects of terrorist attacks on the elderly-part II: posttraumatic stress, acute stress, and affective disorders. *Clin Geriatrics* (2006) 14:17–24.
42. Hobfoll SE, Hall BJ, Canetti-Nisim D, Galea S, Johnson RJ, Palmieri P. Refining our understanding of traumatic growth in the face of terrorism: moving from meaning cognitions to doing what is meaningful. *Appl Psychol-Int J* (2007) 56:345–66.
43. Johnson RJ, Canetti D, Palmieri PA, Galea S, Varley J, Hobfoll SE. A prospective study of risk and resilience factors associated with posttraumatic stress symptoms and depression symptoms among Jews and Arabs exposed to repeated acts of terrorism in Israel. *Psychol Trauma-US* (2009) 4:291–311.
44. Tedeschi RG, Calhoun LG. Posttraumatic growth: Conceptual foundations and empirical evidence. *Psychol Inq* (2004) 15:1–18.
45. Litz BT, Stein N, Delaney E, Lebowitz L, Nash WP, Silva C, et al. Moral injury and moral repair in war veterans: a preliminary model and intervention strategy. *Clin Psychol Rev* (2009) 8:695–706. doi: 10.1016/j.cpr.2009.07.003
46. Simpson M. Traumatic stress and the bruising of the soul: the effects of torture and coercive interrogation. In: Wilson JP, Raphael B, editors. *International handbook of traumatic stress syndromes*. Plenum Press: New York (1993). p. 667–85.
47. Benight CC. Understanding human adaptation to traumatic stress ecposure: beyond the medical model. *Psychol Trauma-US* (2012) 1:1–8. doi: 10.1037/a0026245
48. McEwen BS. Protective and damaging effects of stress mediators. *New Engl J Med* (1998) 338:171–79. doi: 10.1056/NEJM199801153380307
49. Drožđek B, Silove D. Psychotherapy and psychosocial support in host countries: state-of-the-art and emerging paradigms. In: Wenzel T, Drožđek B, editors. *An Uncertain Safety: integrative health care for the 21st century refugees*. Springer: Cham (2018). p. 257–81.
50. McFarlane CA, Kaplan I. Evidence-based psychological interventions for adult survivors of torture and trauma: a 30-year review. *Transcult Psychiatr* (2012) 3-4:539–67. doi: 10.1177/1363461512447608
51. Payne P, Levine PA, Crane-Godreau MA. Somatic experiencing: using interoception and proprioception as core elements of trauma therapy. *Front Psychol* (2015) 6:93. doi: 10.3389/fpsyg.2015.00093
52. Gene-Cos N, Fisher J, Ogden P, Cantrell A. Sensorimotor psychotherapy group therapy in the treatment of complex PTSD. *Ann Psychiatry Ment Health* (2016) 6:1080.

53. Park CL, Folkman S. Meaning in the context of stress and coping. *Rev Gen Psychol* (1997) 2:115–44. doi: 10.1037/1089-2680.1.2.115
54. Schaefer JA, Moos RH. Life crises and personal growth. In: CarpenterB, editors. *Personal coping: theory, research, and application*. Praeger: Westport, CT (1992). p. 149–70.
55. Southwick SM, Bonnano GA, Masten AS, Panter-Brick C, Yehuda R. Resilience definitions, theory, and challenges: interdisciplinary perspectives. *Eur J Psychotrauma* (2014) 1:25338. doi: 10.3402/ejpt.v5.25338
56. Ruscio AM, Ruscio J, Keane TM. The latent structure of posttraumatic stress disorder: a taxometric analysis of reactions to extreme stress. *J Abnorm Psychol* (2002) 111:290–301. doi: 10.1037//0021-843X.111.2.290
57. Broman-Fulks JJ, Ruggiero KJ, Green BA, Kilpatrick DG, Danielson CK, Resnick HS, et al. Taxometric investigation of PTSD: data from two nationally representative samples. *Behav Ther* (2006) 4:364–80.
58. Borsboom D, Cramer AOJ, Schmittmann VD, Epskamp S, Waldorp LJ. The small world of psychopathology. *PloS One* (2011) 11:e27407.
59. Jung T, Wickrama AS. An introduction to latent class growth analysis and growth mixture modelling. *Soc Pers Psychol Compass* (2008) 1:302–17.
60. Wind TR, Komproe IH. The mechanisms that associate community social capital with post-disaster mental health: a multilevel model. *Soc Sci Med* (2012) 75:1715–20.
61. Hobfoll SE, Palmieri PA, Johnson RJ, Canetti-Nisim D, Hall BJ, Galea S. Trajectories of resilience, resistance, and distress during ongoing terrorism: the case of Jews and Arabs in Israel. *J Consult Clin Psych* (2009) 1:1–21.

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Long-Term Impact of War, Civil War, and Persecution in Civilian Populations—Conflict and Post-Traumatic Stress in African Communities

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This chapter describes how chronic conflict, warfare, and persecution, as lived experiences, have created significant mental distress in communities on the African continent. There is a growing body of research that highlights increasing mental distress in Africa e.g., about sexuality, health, disease, modernity, climate, politics, culture, religion, ethnicities, race, economies etc. Many of these stresses and uncertainties are driven by political persecution, war, and conflict. This has shaped many African people's attitudes and government policies and an increasing scholarly interest in exploring these "uncertainties and mental distresses in Africa." The chapter will show how trauma, as seen in conflict/post-conflict settings in Africa, causes significant mental stress and associated social problems as well as medically-defined PTSD syndromes, anxiety, and depression which cause much morbidity and retard development in many African communities. Taking a classical look at post-traumatic stress disorder, PTSD, the chapter explores the presentation of the various physical and mental clinical syndromes related to war-trauma on the African continent and the consequent health-seeking behaviors of the African peoples in this regard. The term "culture-bound PTSD syndromes" will be introduced and discussed in the broader context of treatment, rehabilitation, and prevention on the continent and worldwide. It will also discuss the dilemma of the vicious cycles of trauma driven by appetitive aggression in today's Africa which portends to further retard socio-economic development and drives the trans-generational perpetuation of ethnic-based conflicts including genocides. Despite this mass traumatization, the chapter points to the virtual absence of post-conflict mental health policies in almost all African countries, hence leading to discussions of "best-practices" recommendations.

Keywords: war, conflict, trauma, post-traumatic stress disorder (PTSD), oppression, mental illness, Africa

INTRODUCTION

There is a growing body of research that highlights increasing social and psychological distress in Africa (1). This is most often experienced around such areas as conflict, war, sexuality, health, disease, conflicted modernity, climate, politics, culture, religion, ethnicities, race, poverty, famine, governance, economies, migrations etc. (2). In more recent years, many of these psycho-social problems have been driven by war-conflict (3). These have shaped the current African peoples' attitudes, politics, government policies, and population movements and migrations. They have thus attracted increasing scholarly interest in exploring these African "problems." This chapter will take a classical look at post-traumatic stress disorder, PTSD, to explore the presentation of the various physical and mental clinical syndromes related to war-trauma on the African continent throughout the ages and the consequent health-seeking behaviors of the African peoples in this regard.

The chapter describes how chronic warfare, as a lived experience, creates significant social and psychological distress in and about the African continent. It will show how trauma, as seen in conflict/post-conflict settings in Africa, causes not only significant psycho-social problems but also medically well-defined psychiatric syndromes such as PTSD, anxiety, and depression which cause much morbidity and retard development in many African communities. The chapter will also discuss the dilemma of the vicious cycles of trauma driven by appetitive aggression in today's Africa and portends to retard socio-economic development with trans-generational perpetuation. The lack of post-conflict mental health policies in nearly all African countries will be discussed and best-practice recommendations made.

MASS TRAUMATIZATION IN AFRICA: WAR AND PERSECUTION

History of Mass Trauma in Africa

Trauma, especially war-related mass trauma, is endemic and enigmatic in Africa stretching over 600 years. The 400+ year (1,451 to 1,870) history of the trans-Atlantic slave trade was associated with incessant slave raids which fueled age-old ethnic rivalries and migratory movements on the continent (4). These were then followed by 100 years of the wars of foreign colonization in what Europeans felt was their duty to "civilize" the African: the so-called "White Man's Burden." This was characterized by the three 3Cs of "conquer, convert, and colonize." This period was characterized by intense foreign-imposed religious wars as competition for the African souls raged, being waged by European Christians (Catholic *vs*. Protestant) and Arab Moslems (Islam) with their African converts. This period witnessed some of the harshest and most cruel treatment of Africans by the European colonialist conquerors with frequent massacres and genocides of Africans by European powers (5, 6). Illustrative examples include in Namibia with documented evidence of the German tortures as "The First Genocide Of The 20th Century: Eurocentric Annihilation of the African Blood in Namibia 1904–1907 (7)" (6). Much inhuman treatments of humans by humans have occurred throughout history e.g., genocides of the indigenous peoples of the Americas and Australia, the Nazi Holocaust etc. However, this chapter will only deal with the negative impact of war-traumatization and persecution of populations on the African continent.

Following the period of European conquest and colonization came the wars of independence as Africans fought to liberate themselves from colonial rule. At post-independence, however, African warfare has continued in the form of today's insurgencies, cessation movements, cross-border conflicts, fundamentalisms, and political/governance wars. In all this war-trauma the African peoples have endured stress and anxiety of unimagined proportions.

Current War Traumatization in Africa

Research on the African continent, over the past two or so decades, has documented horrendous trauma and stressor-related mental health sequels, following the never ending enigmatic war-trauma on the African continent (3, 8). This has included reports of the common trauma syndromes of post-traumatic stress disorder, the anxieties, depression, psychosis, traumatic brain injury, epilepsies, and other physical injuries, all with their attendant complications/associations including substance abuse, epidemics e.g., HIV, cholera, Ebola etc. There have also been reports of unusual or atypical/uncommon presentations of trauma sequels in Africa such as dissociative disorders, spirit possessions (9), somatization syndromes (3), rape trauma syndrome (10), mass hysteria, or "demon attack disease" (11, 12), cult indoctrination syndromes (13), and controversial ones like nodding syndrome in Uganda (14–16). There are also new and re-emerging stress threats to the African continent posed by the ongoing mass traumatization including mass radicalizations, brainwashing, fundamentalist fanatics or religionists, destructive cults, jihadists, suicide bombers, genocidaires, appetitive aggression, child soldiers, and finally the problem of population displacements, migration, and the re-emergence of slavery (17). All this traumatization contributes to the daily mental distress felt everywhere in Africa as will be elaborated below.

Magnitude of the Problem of Mass War-Trauma in Africa

In the past 30 years, more than three quarters of African countries have been involved in warfare in one form or another resulting in countless losses of life and causing untold misery to the common African (1, 3). Millions of Africans have been traumatized, displaced, impoverished, diseased, starved, or forced to migrate due to war. Most African countries don't make guns, yet trade in small arms is proliferating worldwide (18). The biggest manufacturers of weapons are the rich developed countries. Many African countries have huge and unmanageable health problems (physical, mental, social, and ecological) as a consequence of prolonged militarized conflicts

(3). Wars break out every year. The weapons used have become more deadly fuelled by the international trade in small arms. Developing countries have become the testing grounds of new weapons.

In today's wars, civilian deaths far outnumber the deaths of the fighting soldiers. In World War I the ratio of Civilian : Soldier deaths was 1:10; today the ratio is 10:1 (19). In most African wars, civilians are being targeted e.g., rape of women, using civilians as human shields, child soldiers, genocides, internally displaced peoples (IDP), refugees etc. (20). Warfare has moved from battlefields to urban warfare. Targeting of civilian infrastructure is common as soft targets such as churches, mosques, markets, shopping centers, college campuses. Ideologies and fundamentalisms drive today's wars which makes them intractable and unwinnable as we have seen in many African terrorisms. Africa has joined in the militarization of previously peaceful endeavors e.g., science, medicine, space, social media, information technology (IT), drones etc. The causes of today's wars in Africa are difficult to discern. Many are enshrined in political and governance dilemmas, in the fight for the control of resources and territory. These form the majority of the civil wars and insurgences e.g., Nigeria, Sudan, Uganda, South Sudan, Libya, Eritrea, Ethiopia, Burkina Faso, Central African Republic etc. Others have to do with governance issues e.g., Egypt, or fundamentalist, religious, or racist connotations e.g., Somalia, Sudan, or old ethnic rivalries e.g., Rwanda, Burundi. Human rights abuses, dictatorships, political repression, and election problems account for yet another group e.g., Kenya, Democratic Republic of Congo etc. Many African leaders rule for decades and keep on changing constitutions to ensure their continued rule. Global forces, especially the control of markets and resources (oil, minerals) or international hegemony (economic, ideological, cultural, trade etc.) and fundamentalisms (religious, racism) have fuelled many proxy wars in Africa by heating up nationalisms and centuries old ethnic conflicts. Often global forces align themselves with local forces to cause what is termed as "glocal" factors that fuel conflict e.g., greed and corruption, weapons industry especially small arms trade (18). These exploitatively play on the African peoples' poverty and ignorance to precipitate conflict and perpetuate wars. This is usually seen in the not too uncommon East *vs*. West tensions, war on terror, fundamentalisms etc. The result of all this fighting is massive loss of life. The African continent accounts for almost 88% of the world's conflict-related deaths, with Asia and Middle East accounting for 9%, Europe 2%, and the Americas 1% as well illustrated by the Virgil Hawkin's stealth conflicts map (21).

The Events of Mass War-Trauma

In today's wars, including those in Africa, civilians suffer the most (19). The types of traumas experienced can be grouped into physical, psychological, social, and ecological torture and these include the following (22):

Physical torture

- Beatings, kickings, gunshots, bombs, landmines
- Cuttings, tying and blindfolding, child soldiering,
- Disfigurements, burnings, forced labor,
- Sexual abuse (rape, public rape, gang rape, sexual slavery), defilements
- Executions, mass killings, ethnic killings

Psychological torture

- Threats, interrogations, accusations, abductions,
- Mock executions, incommunicado, detentions,
- Humiliations, witnessing, deprivations

Social torture

- Destruction of property and livestock,
- Fleeing, witnessing, displacements, migrations
- Community and family break-ups.

Ecological torture

- Destruction of infrastructures,
- Scorched earth policy,
- Uninhabitable environments—landmines, poisoned wells/ rivers etc.

As an illustrative example, Musisi et al. (22) studied the traumatic events that people experienced in the Luwero Triangle during Uganda's "bush" war from 1981 to 1986. In that war civilians were subjected to extreme trauma by the then government fighting forces. The **Table 1** summarizes the trauma frequency (22):

Wars cause physical, psychological, social, and ecological destruction. They aim to destroy a people's identity, culture, beliefs, language, food etc., in order to make them submit to newly imposed ones. Wars destroy society's infrastructure and systems e.g., government, families, communities, economy, environment. Wars are coercive to dis-empower and indoctrinate. Torture is used to ensure submission. Rape of women is used as a weapon of war to change the genetic makeup. Some wars carry out genocides as was seen in Rwanda, Darfur etc. Such traumatic events go beyond normal human experiences and lead to the myriad of post-traumatic sequels we see in Africa, some of which go on for generations.

The victims of Africa's wars are more likely to be civilians rather than the fighting forces. Indeed more than 70% of the casualties in recent African conflicts have been non-combatants.

TABLE 1 | Reports of trauma by the survivors of the 1981–1986 Bush War in Uganda—the Luwero Triangle.

Trauma event	Frequency
• Beatings, kicks, and cuts	50%
• Forced hard labor	20%
• Threats and interrogations	60%
• Relatives killed	50%
• Homes/property destroyed	40%
• Forced fleeing/displaced	60%
• Sexual torture (rape)	40%
• Tortured in home	70%
• Tortured in camp/detention	20%

The majority of these are women, children, and the elderly (23–25). The poor and uneducated make up the bulk of the victims. The young and educated (especially men) flee into exile, robbing Africa of the social capital necessary for development. The survivors suffer significantly as described below:

Physically: They suffer many diseases—surgical, gynecological, infections, neurological, neglected health, and epidemics. Healthcare infrastructure is destroyed. Health workers flee (22).

Socially: Communities suffer increased poverty as production declines and education plummets as schools are destroyed. People's cultures, societies, and communities are destroyed and many get displaced. Whole communities become marginalized creating trans-generational effects. Law and order breaks down giving way to militarism and political repression. Population displacements lead to refugees, internally displaced peoples (IDPs), asylum seekers, and running into exile of the educated and professional elites hence exacerbating the brain drain and flight of social capital (26, 27).

Children of war: Children born of and in trauma are a cause of special concern. Many are orphans and vulnerable children with no adults to care for them creating the phenomenon of sibling headed households or COTOs (children on their own). Some are unwanted or unaccepted, being products of rape or incest. On rare occasions, as the war rages on, some become abandoned to grow up in the bush or forests as feral children. Children in war-torn areas are often orphaned, malnourished, and don't go to school. They live in IDP camps; are malnourished, stunted, depressed, have epilepsy and as they grow up they gravitate to urban centers where they become street children or prostitutes (24, 25, 27). Many children are seen in IDP camps, in Africa, wandering about without adults to care for them. After the camps are disbanded many of such children go to live in towns as street children, begging and stealing for survival. Many girls became sex workers for survival. All these children become urban lumpen and become victims of drug and alcohol addiction as well as crime. NGOs and faith based organizations attempt to help e.g., Transcultural Psychosocial Organization (TPO), UNESCO, World Vision, Peter C Alderman Foundation (PCAF), etc. However, without concerted government policies for the care of these Orphans and Vulnerable Children (OVCs) who have been affected by war (s) a whole generation of African children will be lost. This has the potential to create transgenerational cross-over problems and future conflict. Most of these children suffer chronic traumatization in their tender years and develop Developmental Trauma Disorder, DTD (28).

Child soldiers: UNICEF defines child soldier as any person under 18 years of age who is associated with an armed force or armed group in any capacity ranging from combatants to cooks, or laborers carrying loads (29). Child soldiers are often forcibly recruited, brutalized, and cruelly abused by armed groups. They are often forced to commit atrocities themselves, sometimes to members of their communities including their families. (24). They subsequently suffer massive mental health problems which make their treatment, community reintegration, and psychological rehabilitation difficult (24). Okello et al. (25) found the prevalence of PTSD in former Ugandan child soldiers ranging between 27 and 34.9% of the Ugandan child soldiers in rehabilitation. However, Amone-P'Olak et al. (27) reported 97–98% prevalence of post-traumatic stress symptoms, posttraumatic stress disorder (PTSS), not necessarily meeting full Diagnostic and Statistical Manual of Mental Disorders (DSM) criteria for PTSD. Other psychiatric problems were also common in these war-affected children, such as depression, various anxiety disorders, dissociation, somatic complaints, as well as behavioral problems like aggressive and disruptive behavior.

Women survivors of war: Many women are sexually and physically abused in war as sexual and gender based violence (SGBV) is rampart in many African wars. Rape and gang rape, abduction, sex slavery, defilement, and forced marriage are common. Many young girls are lured by fighting men into sex in exchange for food, security, shelter, and financial assistance. For survival, they follow the men wherever they move, a phenomenon called "camp following" and many engage in survival sex (8). Even UN Peace Keeping Forces have been guilty of the sexual abuse of women in African conflict areas (30).

Refugees and internal displacement: War causes people to flee in search of security and safety. It also causes poverty, hunger, and loss of hope for any meaningful livelihood. Violence and insecurity become everyday experiences. Whatever the cause, fighting, and violence cause anxiety, panic, and fear in the people who are forced to run in search of safety and security. These are the refugees, immigrants and IDPs, the bulk of who are children, women, and the elderly. The overwhelming majority of displaced people are hosted in developing countries, either as internally displaced peoples (IDPs) or as refugees in countries neighboring to the conflict zones (26). A few run to Europe and North America. However developing countries host the vast majority of refugees as internally displaced peoples. This accounts for 13.9 million refugees under the United Nations High Commissioner for Refugees (UNHCR) mandate or about 86% of the world's refugees. Sub-Saharan Africa, as a region hosts around 30% of global refugees. Most African refugees remain within the African region where they face appalling situations (26). They often suffer traumatic events not only in their countries of origin but also in their countries of resettlement. Moreover, their bitterness, past and continued trauma, as well as the stigma and discrimination they face make these refugees and immigrants vulnerable to development of mental health problems, not only as individuals but also in families and communities wherever they have gone (3). Their mental health problems are related to various phases of the displacement experience including preflight, flight, and resettlement. The preflight phase may include, physical and emotional trauma to the individual or family, the witnessing of murder, and social upheaval. Flight involves an uncertain journey from the host country to the resettlement site and may involve arduous travel, refugee camps, and or detention centers. The resettlement process includes challenges such as the loss of culture, community, and language as well as the need to adapt to a new and foreign environment. These experiences are risk factors to mental health

problems common of which are post-traumatic stress disorder (PTSD), major depression, generalized anxiety, panic attacks, adjustment disorder, somatizations, and substance abuse. Many commit suicide (31). The incidence of their diagnoses varies with different populations and their experiences. Different studies have shown rates of PTSD and major depression in settled refugees to range from 10 to 40% and 5 to 15%, respectively. Children and adolescents often have higher levels with various studies revealing rates of PTSD from 50 to 90% and major depression from 6 to 40% (24, 25, 27, 32).

With the recent increase in mass violence worldwide, has come an unprecedented upsurge in the numbers of refugees, asylum seekers, and displaced peoples, which has created the world's immigration crisis of today. No country is spared. With this have come nationalistic, isolationist and xenophobic sentiments as well as protectionist politics. This has been especially so with the increased numbers of refugee treacherous crossing of African immigrants across the Mediterranean from North Africa (especially Libya) to Europe causing worldwide sensationalization with new drastic European approaches to dealing with the refugees from Sub-Saharan Africa and the Middle East.

The increase in wars, poverty, famine, disease, as well as political repression coupled with the globalized expectation of freedom and richness has created a dangerous narrative in today's African youth who have been manipulated into thinking that Africa is an "unlivable continent." Many strive to go to Europe or the Middle East "at all costs" which has resulted in massive human trafficking and domestic slavery and actual re-emergence of the tear-raising slave auctions in Africa **again** in this 21st Century as was shown in one CNN newscast to all over the world (17). The core cause of all of this lies in wars on the continent and their international perpetrators working with the local Africans in the exploitation of the African resources and peoples being fueled by the world's small arms trade. Elite Sub-Saharan Africans, who come to Europe, as exiles are often commonly portrayed as "destitute or desperate." However, these are often relatively well educated Africans who come from moderate socio-economic backgrounds. They move because of a general lack of opportunities, fear of persecution and violence, to escape political repression or a combination of these (26). They add to the brain drain from Africa.

MENTAL HEALTH PROBLEMS OF MASS TRAUMA IN AFRICA

Common Mental Disorders: Anxiety, Depression, and Post-Traumatic Stress Disorder

Anxiety and Depression

For years in Africa, mental health problems consequent to war were seen as annoying "anxieties and depressions" not suitable for treatment with western medicine, hence relegating them to traditional and faith healers (2, 33). Generally, the term "anxiety" is defined as distress or uneasiness of mind caused by fear of danger or misfortune; a state of apprehension and psychic tension (34). Trauma causes psychological ill-health which, before DSM 5 (35), was classified as a form of anxiety disorder called post-traumatic stress disorder (36). Today, medically, or more specifically psychiatrically, anxiety is defined as a disorder characterized by a state of excessive fear, worry, and apprehensive expectation occurring on more days than not about a number of potentially stressful events, situations, or activities such as happens in severe illness, famine, disasters, or war which often causes trauma and ill-health mentally, physically, and socially (35). Medical psychiatry also stipulates that anxiety can arise "from without." Using their culture-specific explanatory models of illness, traumatized Africans have exhibited varying health seeking behaviors following their "anxieties." The term "culture-bound PTSD syndromes" (37) will be discussed in the broader context of treatment, rehabilitation, and prevention of trauma-related stress and anxiety as seen today on the African continent and worldwide. War causes trauma and ill-health. The American DSM IV classified post-traumatic stress disorder (PTSD) under the category of anxiety disorders (36). However, DSM-5 (35) differentiates anxiety disorders as a distinct category from "trauma and stressor-related disorders" under which PTSD is now classified although its diagnostic criteria remain the same and still contain a significant dose of anxiety symptomatology.

This chapter argues that chronic warfare, as a lived experience has caused significant classic anxiety, depression, and other mental illnesses as well as general ill-health in many African communities and retards development (1–3). Wars, as traumatic events, have brought on a specific constellation of severe, prolonged, emotional, and physical disabling symptoms, especially war-related post-traumatic stress disorders (PTSD), depression, and anxiety with varying symptom expressions (2, 3, 33, 38). At a more general level, psychic trauma occurs when an individual is exposed to an overwhelming event that results in helplessness in the face of intolerable danger, anxiety, and instinctual arousal. In as much as stress affects everyone, severe traumatic events (as in war) tend to be overwhelming, shattering a person emotionally and leaving a feeling of total helplessness. Such as person is faced with a threat to life, a risk of injury, or a loss of security and is at a critical moment when usual coping mechanisms seem to fail (39). Hence, as argued in this chapter, the history of PTSD in Africa is closely tied to the continent's wars and these have caused a state of continuous anxiety, depression, and psycho-social disability stretching over centuries on this continent.

Post-Traumatic Stress Disorder

Stress affects everyone as change and adjustment are part of life as events unfold nearly every day. However, some events can be traumatic and overwhelming, shattering a person emotionally and leaving a feeling of total helplessness. This happens when a person is faced with a threat to life, a risk of injury, or a loss of security or sanity when usual coping mechanisms fail (39). Psychic trauma occurs when an individual is exposed to an overwhelming event that results in helplessness in the face of intolerable danger, anxiety, and instinctual arousal. Such

traumatic events can bring on a specific constellation of severe, prolonged, emotional, and physical disabling symptoms, an illness now known as post-traumatic stress disorder or PTSD (39).

The American DSM 5 (35) and the International ICD 10 (40) define post-traumatic stress disorder (PTSD) as consisting of a set of symptoms which make the PTSD diagnostic criteria. These can be summarized as follows:

A. **Experiencing, witnessing,** being confronted by or hearing about a traumatic event with threat to life, physical integrity to self or others and causing fear, helplessness, or horror.

B. **Re-experiencing the traumatic** event as recollections, intrusive thoughts, nightmares, or flashbacks etc.

C. Avoidance of reminders of the traumatic event in thoughts, situations, places, including poor recall.

D. Hyper-arousal characterized by poor sleep with nightmares, increased irritability, anger outbursts, hyper-vigilance, startle response, or increased autonomic activity.

E. **Duration of symptoms for more than 1 month** and causing significant distress to the ones affected.

F. There can also be culturally influenced symptoms such as dissociations, spirit possession states, and somatization.

G. Impairment of social and occupational/school functioning.

PTSD is often associated with complications such as depression, panic attacks, phobias, substance abuse, psychosis, and physical medical complications depending on the trauma itself e.g., traumatic brain injury, seizures, sexually transmitted diseases (STDs) including HIV, vaginal fistulae, fractures, neglected diseases, family dysfunction etc. (41). The universality of PTSD symptoms as existing in different cultures has been the subject of much research and debate. Bracken et al. (33) and Summerfeild (38) argued that post-traumatic stress disorder (PTSD) is a peculiar construct of the West and denied its universal application to nonwestern cultures. However, various workers have described a core set of symptoms found in all cultures and societies as constituting the core syndrome of PTSD as described in DSM-5 (35) and ICD-10 (40). Boehnlein (42) studied PTSD symptom expression in different cultures and the cultural interpretations of common physiological processes in PTSD e.g., nightmares. He concluded that by listening simultaneously to the literal (spoken) language, knowing cultural metaphors and observing somatic (body) language, one is led to a more comprehensive understanding of human suffering in the care of the traumatized (42). Thus various workers now agree on the varied expression of psychological distress in different cultural settings hence giving rise to the notion of "post-traumatic culture-bound syndromes" (43). The post-traumatic stress symptom constellations evolve in a timely fashion which can be interpreted as constituting sub-types of PTSD as follows:

Adjustment disorder: Here the traumatic event may be a usual or common human experience, may be transient, not as severe and may be reversible or overcome-able.

Acute Stress Disorder: Here, the PTSD symptoms occur within 30 days of the trauma.

Acute PTSD: Here the duration of PTSD symptoms is 30 to 90 days.

Chronic PTSD: Here the duration of PTSD symptoms is 90 or more days.

***Delayed Onset PTSD*:** Here PTSD symptoms occur within 6 months or later of the traumatic event.

Complex Post-Traumatic Stress Disorder and Post-Traumatic Stress Disorder in Children: Developmental Trauma Disorder

Herman (44) described the concept of complex PTSD as a result of a severe or protracted and repeated traumatization of an individual which leads to a complex process of psychological reactions where the existence of previously held values and views of the world is doubted leading to changes in personality, beliefs, and the distrust of people (44). In children complex PTSD presents as developmental trauma disorder (DTD) and the manifest symptoms depend on the age of child, the nature of the trauma, the repetition of the trauma, the gender of the child, and support systems available to the child (28). DSM 5 (35), however tends to limit children's response to trauma as manifesting in the form of either reactive attachment disorder (over-anxious attachment) or disinhibited social engagement disorder (or disinhibited attachment). This is limited as children show varying symptoms consequent to trauma. Children affected by war in Africa have exhibited various forms of developmental trauma disorder (14, 24, 32).

Mass trauma, as happens in war, is almost always accompanied by high rates of PTSD in both adults and children. It denigrates respect for human life, personal dignity, and what constitutes a good and meaningful life (19, 43). Communities often resort to their traditions to reconstruct their disrupted life. It is through cultural traditions that man values human life, constructs the meaning of life and respects personal dignity and that of others. In Africa, this is embodied in the concept of Ubuntu or "humaneness" (43).

Often, in Africa, unusual forms of PTSD may appear as forms of complex PTSD. These do not fit the usual PTSD diagnostic criteria, are often rare, controversial in description and presentation and may be restricted to one locality or group. Often they are associated with physical disorders and could be gender, age, location, culture, or religious specific. They are difficult to explain using the commonly stipulated PTSD disease criteria and could be interpreted as culture-bound PTSD syndromes. Researchers may write about them as isolated case reports and they often present diagnostic and management difficulties with much debate as to their diagnosis, the supposed causes and treatment approach. In Africa, these atypical PTSD syndromes may present with much drama as dissociative symptoms (psychological or somatic), spirit possession, or complex depressive symptoms with much somatization but with a history of past traumatic events. They

are often treated by traditional healers by abreactive catharsis, rituals, and/or psychodrama (9).

ATYPICAL MENTAL HEALTH PROBLEMS OF MASS TRAUMA IN AFRICA

Unusual forms of PTSD and other mental sequelae appear in Africa as forms of complex PTSD and mass anxieties but with strong cultural and quasi-religious influences. These do not fit the usual definition of PTSD or other known mental syndromes as classically defined. They could be rare, controversial, and restricted to one locality or group. Often they are associated with physical disorders and may be gender, age, culture, or religious specific or confined to a specific geographical location. They are difficult to explain using common DSM-5 or ICD-10 disease criteria and could be interpreted as "culture-bound PTSD syndromes" (3). Researchers write about them in isolated case reports or they get mislabeled as some other known disorders. They often present diagnostic and management difficulties with much debate as to their diagnosis, supposed causes, and treatment approaches. They will be described below.

Dissociative Symptoms and Mass Hysteria

Van Duijl, et al. (9) reported on the presentation of PTSD symptoms as dissociative and possession states in traumatized refugee populations in Uganda. They were often accompanied by depressive symptoms and treated by traditional healers using traditional techniques of abreaction, catharsis, rituals, and psychodrama. Nakalawa et al. (12) also reported on these in post-conflict areas in Northern Uganda as well as mass hysteria, commonly referred to as "demon attack disease." Kaggwa (11) reported on similar phenomena in East Africa following the immediate post-independent anxieties. This was a time following much traumatic anxiety and uncertainty in East Africa which accompanied the struggles for independence e.g., the MAU-MAU insurgency in Kenya (45) Rataemane et al. (46) described cases of mass hysteria in South African girl school children in the post-apartheid uncertainties. Mass hysteria was common in Europe in the middle ages e.g., the dancing manias in France (47). These mass hysterias present as spontaneous en mass development of identical symptoms among people sharing common attributes (e.g., being in same IDP camp or school or village) and who believe they have been made ill by outsiders or outside agents (witchcraft or demons etc.). They are often preceded by mass psychic trauma and are characterized by intense mass affect, anxiety, and dissociation of the manifest symptoms from consciousness. In Africa they are often attributed to demons and wronged angry spirits of the land or the dead. In today's Africa, attempts at treatment by prayers and traditional healers have often failed. Successful treatment or intervention has been reported to be by identification of and dealing with source of conflict, isolation, and treatment of the index case and dispersal of the affected others (12). Appreciating the cultural explanatory model of the mass malady helps in understanding the phenomenon and effecting healing of the affected community.

Cult Indoctrination Syndromes

A cult is defined as "A system of religious veneration and devotion directed towards a particular figure or object by a group of people having beliefs or practices regarded by others as strange or as imposing excessive control over members" (48). Cults often form following brainwashing and indoctrination by a charismatic (cult) leader who demands total obedience and loyalty such as what was seen in the Stockholm Syndrome. Cult leaders may lead religious or military movements. They demand obedience and total loyalty from recruits. Personal feelings are suppressed and members seem content and enthusiastic to carry out their leaders commands at all times. They adapt a drastic but total alteration of their value system, worldview and exhibit a reduction of cognitive flexibility and adaptability. They appear "anxiety-less" as they develop a narrowing, blunting and distortion of affect with apparent psychological regression. They have absolute sincerity as demanded by their leader who often demands group isolation from family and society. They often adapt a code of silence. They experience physical changes including weight loss and deterioration in physical appearance, usually from many days of forced starvation as a form of religious fasting or self-sacrifice. They may develop mask-like facies, blank stares or evasive eyes, and a puppet-like cheeriness.

Cults are seen with increasing frequency in traumatized Africa or following epidemics. Many destructive and doomsday cults have been seen on the continent. Examples include the Kibwetere's doomsday Kanungu cult in 2000 in Uganda in which more than 1,000 people died (13). Kibwetere led the "Movement for the Restoration of the Ten Commandments of God" cult movement in Uganda in which thousands died in a deliberately set inferno set in his church with the promise "to go to heaven." All this was in the wake of the AIDS epidemic and Uganda's civil wars. Other cults have been seen as religious revival churches to assuage the mass anxiety, helplessness, and hopelessness in populations faced with war, poverty, famine or epidemics, and constant uncertainty about the future. Indeed many evangelistic missions and missionaries abound in today's Africa promising riches and heaven to the suffering converts (49). Other cults have been armed and militarized and destructive in nature. They recruit followers by promising magical solutions to governance or political problems or to "purify and save their people." Examples of these included Alice Lakwena's Holy Spirit Movement in Uganda from which Joseph Kony's Lord's Resistance Army (LRA) arose (50). Alice Lakwena was a cult-priestess who recruited and mobilized an armed "holy army" which was defeated by Ugandan Government army. Joseph Kony was a catechist, a cousin of Alice Lakwena, who took over the remnants of the defeated Lakwena's army to create an insurgency in Northern Uganda with a promise to resurrect "a pure Acholi tribe free of contamination from outsiders and then form a government based on the 10 biblical commandments" (50). Other militaristic fundamentalist cult-like armies have also

been seen in Africa including Boko Haram and Al Shabab, which seem to be off-shoots of Al Qaeda (51).

Most of these groups arise because of the ever-present anxiety we see in Africa, most of which stems from war, poverty, famine, and mass disease or epidemics as well as abuse of Human Rights; all mixed with ignorance and the African traditional beliefs in magic and supernatural forces. They cause much discomfort among Africans who get manipulated into believing them to be "saviors" as a means to escape the mass poverty, suffering and misery, and the attendant constant anxiety, all of which stem from chronic warfare.

Rape Trauma Syndrome

This was first described and reported by Burgess and Holmstrom (10) as occurring in women in the Democratic Republic of Congo, DRC, who had suffered repeated gang rapes and sexual slavery. Rape of women and young girls, including gang rape, was very commonly reported in DRC (41, 52) and was also seen in northern Uganda and other areas of conflict in Africa (8, 23). Rape is not usually reported by the women victims for cultural fears of shame and rejection by their husbands or reprisals by their rapists. Rape trauma syndrome usually presents as associated to other psychiatric disorders including chronic (lower) abdominal pain, depression, amnesia, dissociation, conversion disorder (lower limbs weakness), or suicide attempt (53). The women may present after many years of failed treatments including gynecological referrals and treatments for sexually transmitted infections including HIV/AIDS. Treatment of the underlying complex PTSD using antidepressants, anxiolytics, anti-arousals (prazosin), and culturally sensitive trauma-focused cognitive behavioral therapy CBT is useful.

Nodding Syndrome and Starvation Syndromes

Nodding syndrome was reported in war-afflicted Northern Uganda and South Sudan (54). It presents as a chronic debilitating illness affecting children aged 3–18 years. Winkler (55) had reported on sporadic cases of nodding disease in Tanzania, which were not related to trauma and had classified them as atypical epilepsy. In Northern Uganda's war conflict-affected areas, reports of nodding syndrome first appeared in 1997 (54). Nodding syndrome, NS, was characterized by malnutrition, stunted growth, mental retardation, and seizures in about 50% of the cases leading some researchers to designate it as a neurological epilepsy disorder (15, 16). However, the affected Acholi people called it *"luc luc* **or** *yengo wic"* and recognized it as a new disease in their midst and related to the LRA insurgency war. They did not call it epilepsy i.e., *"jake* **or** *two oderu,"* these being more familiar terms to mean epileptic fits which they had always seen. They believed nodding syndrome to be caused by "cen" or dead peoples' spirits which had come to haunt the living for a variety of reasons including wrongful deaths and improper burials. Reports of nodding syndrome first appeared in Northern Uganda in 1997 and reached epidemic proportions in 2000-2003 when people were moved into IDP camps (14). Investigations for infectious (onchocerciasis) and toxic (rotting foods, chemicals from ammunitions etc.) were inconclusive as to cause, treatment, or outcome. Psychiatric studies of clinical evaluations and field observations revealed that nodding syndrome children had been exposed to severe war-related psychological and physical trauma as well as non-specific CNS insults including untreated CNS infections (malaria, meningitis) and malnutrition (avitaminosis) possibly causing seizures. Many children suffered post-traumatic stress disorder (PTSD) or developmental trauma disorder (DTD) and depression. No more **new** cases of nodding syndrome appeared after the LRA war ended and the IDP camps were disbanded in 2007 (14, 16). However, the nodding syndrome children who had brain-damage from CNS insults continued to suffer and exhibit features of mental retardation and other neurological developmental anomalies. Family therapy using group interpersonal psychotherapy (IPT-G) helped families of NS affected children by lowering their depression and anxiety to cope better and look after their NS children (16). No other measures effectively treated NS except for symptomatic treatment of any accompanying seizures or depression and malnutrition (14). Those NS children who had no neurological problems did well and have gone on to lead more or less normal lives after the war.

Appetitive Aggression

Generally, people with PTSD following trauma, face many challenges in their lives including both enacted and internalized (self) stigma, the latter being most harmful (56). Internalized or self-stigma is defined as "a state in which an individual accepts and agrees with societal prejudices about their particular condition and applies this to oneself (56). It is associated with lowered self-esteem and hope and may carry on for generations and negatively influences behavior. It perpetuates symptoms of PTSD, depression, anxiety, substance abuse, as well as aggression leading to violence in communities as "appetitive aggression." Appetitive aggression is defined as the "perpetration of violence and/or the infliction of harm to another person for the purpose of lessening one's pain, for relief of anxiety/inner tension or just for "fun." Traumatic experiences lead to emotional deregulation which in turn leads to easy irritability and ultimately to aggression (e.g., startle response, hyper-vigilance etc.). The resultant violence results from a form of "reactive aggression" and the need to revenge for relief of the inner tension/anxiety, hence creating a pattern of appetitive aggression (57). Individuals who are exposed to earlier trauma often perpetrate violence or inflict pain/harm to others (victims) for purposes of experiencing violence-related enjoyment although this diminishes with higher levels of violence. Appetitive aggression temporarily reduces risk of trauma-related distress and is hence adaptive for survival in a violent environment (56). Sometimes, there are powerful social and psychological rewards gained from appetitive aggression, especially from people in authority. This reduces their vulnerability to the trauma-related psychological distress hence the seeming protective effect and tendency to self-propagate (57). Appetitive aggression could partly explain the increasing types of violence reported in post-conflict communities including domestic violence, gender based violence, intimate partner violence, child abuse, mob/vigilante violence, and the vicious

cycles of political repressions and torture including "riot suppression." "Toxic stress" as is often seen in the former child soldiers and returned girl abductees drives appetitive aggression. Their appetitive aggression is an adaptation to their earlier experiences of violence as a form of PTSD with startle responses as they feel vulnerable, have low self-esteem and feel easily threatened. They develop internalized stigma (self-stigma) and are always suspicious of others' intentions (paranoid). They thus "attack pre-emptively." Examples of this are returned child soldiers who find it difficult to sit in classrooms and obey the authority of teachers to benefit from the learning obtained from formal school education. These often feel out-casted and have low self-esteem and feel self-stigma. Returned formerly abducted girls who suffered trauma and sexual abuse also felt the same way. Treatment provided in the form of narrative exposure therapy (NET) could help them in reconstructing an autobiography of themselves and a memory of their past experiences (56). This provides them an understanding of why they feel and behave the way they do (appetitive aggression), reduces their inner fears and tensions, and may thus reduce their violent or avoidance tendencies. This has not been possible to do in Africa on a wider scale due to limitations of the needed knowledge and expertise to carry out NET on a mass scale in former combatants of Africa's wars. Researchers have argued that many of today's African political leadership are former combatants who have PTSD and may be unconsciously caught up in vicious wars of appetitive aggression. Appetitive aggression has the potential for the trans-generational transmission of trauma and may be the psychological force driving genocidaires.

POLICY, CONCLUSIONS, AND RECOMMENDATIONS

Policy

Historically, for over 600 years, Africa has been the scene of significant war-related mental distress and uncertainties; from ethnic rivalries fomenting war-raids, wars of slavery, European colonization of African peoples (to conquer, convert, and colonize), to wars for independence and now the post-independence wars fomented by fundamentalisms, competing political ideologies/persecution, racism, and the struggle for control of resources and lastly population movements and human trafficking. All of these have been driven by warring. Over the years, this has shaped many African peoples' attitudes, politics, and health seeking behaviors. Today African peoples are anxious over a number of issues including sexuality, gender, health, disease, poverty, modernity, climate, politics, culture, religion, ethnicities, race, economies, governances, war, displacement, immigration, and fears that they may, once again, lose control of their continent.

From a policy perspective, mass trauma is a global health problem whose causes, perpetuates, solutions and preventions elude nations. Despite such chronic massive traumatization on the African continent, with the consequent mental health disability, there is virtual absence of national mental health policies in African countries, let alone national post-conflict mental health policies (1, 3, 20, 58–60). The African Union Policy on Post-Conflict Reconstruction and Development (PCRD) did not mention mental health in its recommendations (20). In studies of mental health policy in African countries, Omar et al. (61) and Flisher et al. (58) pointed to the lack of or very inadequate mental health planning in African countries. Many researchers point to the non-prioritization of mental health issues and the lack of mental health awareness as underlying the absence of mental health policies, funding, and services in post-conflict African countries (1, 3, 59). Sankoh et al. (60) decried the lack of mental health research and publications in Africa. Of recent some research studies and publications on post-conflict mental health have appeared in the literature (29, 62–64) with but one journal on the continent being dedicated to mental health trauma in Africa: the African Journal of Traumatic Stress now being underwritten by Health Rights International (www.petercaldermanfoundation.org/ajts) (65). The policy recommendations have mainly followed the WHO-recommended mental health interventions in low-resource settings—mainly the WHO Mental health gap action program and (mhGAP) (66), Psychological First Aid (PFA) (67) guidelines (WHO, Geneva). The following is but an outline of policy recommendations regarding the least that needs to be done (37):

1. Psychosocial Needs Assessment: To start by doing scientifically based local research to inform policy makers of the need to have post-conflict mental health recovery programs. This should address the need to treat current victims, reconstruct affected communities, conflict resolution, peace building reparations, and redress. The latter is important as reparations without justice tend to perpetuate future conflict.
2. These intervention programs must be nationally organized based on policy legislation and financing, multi-disciplinary approaches, local monitoring, and control of international collaborating agencies.
3. The mental health intervention policy should be linked to socio-economic development and human rights.
4. The treatments must be based in primary health care settings to avoid stigmatizing victims. There has to be local input and participation in the provided interventions which must be culture and situation sensitive.
5. All African countries should endeavor to provide physical and mental healthcare for internally displaced peoples, immigrations, and refugees.

Conclusions and Recommendations

There has been many wars, persecutions, and traumatization the world over. However, by emphasis, this chapter only dealt with African communities. From a medical point of view, we see many diseases and behaviorisms as a consequence of the chronic warfare and persecution in Africa. This chapter has shown how the trauma, as seen in African wars, continues to cause much mental distress and morbidity in many African communities

and to retard socio-economic development. Diagnoses such as post-traumatic stress disorder, depression, and anxiety are increasingly seen today's Africa with their various presentations. Atypical forms of these mental problems often manifest given the varying explanatory models of illness causation in the different cultures in Africa. In their health seeking, Africans have employed various methods to cope with or reduce their mental ill-health including traditional healings, faith healings, cleansing rituals, reconciliations, and conflict resolutions, but the trauma still goes on. Africa needs to re-think and curb warring and its deleterious ramifications including re-insurgent slavery.

The question whose answer eludes many in Africa is social justice for all. How will Africa forge a path to peaceful development, freedom, human rights observance, and good governance? Many decry the long legacy of colonialism which divided up African peoples with countries sketched out by European powers and the latter who continue to control Africa's resources. There are no easy answers and certainly no simple specificities/specifications especially in today's competing global forces in diverse African cultural settings. The following are suggested recommendations:

1. Universal education for all including all ethnicities, genders, social classes, religious groupings, and political persuasions which must include human rights education.
2. A political will by African leaders to entrench participatory democratic governance in their countries and keep way from perpetual dictatorships, wars, and persecutions.
3. A deliberate education that concietizes the people of Africa to know the historical and socio-economic origins of their problems and to understand the global forces perpetuating their present socioeconomic problems including the need to control African resources and affairs by Africans and for Africans irrespective of race, religion, ethnicity, gender, creed, or political/ideological persuasion.
4. Entrench, through school and community education, a universal respect for human rights; and to avoid war and promote peace building and conflict resolution.
5. All African countries should be signatories to the United Nations Convention Against Torture (UNCAT) (68) as they are all signatories to the UN Human Rights Council Resolutions (69). They should ratify UNCAT and put it in their domestic laws.
6. African countries should sign up and support the International Criminal Court (ICC) (70) and they should endeavor to have a respectable functioning African Court on Human and Peoples Rights (71) with ready accessibility to the ordinary African.

DATA AVAILABILITY STATEMENT

The datasets generated for this study are available on request to the corresponding author.

AUTHOR CONTRIBUTIONS

The authors carried out primary research, reviewed literature, treated subjects, collected data, analysed data and prepared the manuscript.

REFERENCES

1. Musisi S. Mass trauma and mental health in Africa. *Afr Health Sci J* (2004) 4(2).
2. Pringle Y. (2019). Psychiatry and decolonization in Uganda: mental health in historical perspectives. Ch 7, 177–207. doi: 10.1057/978-1-137-60095-0_7
3. Musisi S. War and mental health in Africa. In: Njenga F, Acuda W, Patel V, Maj M, editors. *Essentials Of Clinical Psychiatry For Sub-Saharan Africa*. Milano, Italy: Masson Publications (2005).
4. Reader J. Africa, A biography of the continent. In: *Penguin Books*. London, UK: Vintage Publishers. (1998).
5. Sarkin J. *Germany's Genocide of the Herero: Kaiser Wilhelm II, His General, His Settlers, His Soldiers*. Cape Town, South Africa: UCT Press. (2010).
6. Olusoga D, Erichsen CW. (2010). The Kaiser's Holocaust: Germany's Forgotten genocide and the colonial roots of nazism. Faber Publishers, https://www.goodreads.com/book/show/8250985-the-kaiser-s-holocaust.
7. Olusoga D, Erichsen C *The Kaiser's Holocaust: Germany's forgotten genocide and the colonial roots of Nazism*. (Philadelphia, USA: Faber & Faber. Available at https://www.google.ca/search?q=german+namibia+genocide.
8. Kinyanda E, Musisi S. War traumatisation and its psychological consequences in women of Gulu district. In: *Violence Against Women and Children: A Review of women's studies, VOL XI Nos 1&2*. University Center of Women's Studies: University of Philippines Press (2002).
9. Van Duijl M, Nijenhuis E, Komproe IH, Gemaat HB, de Jong JT. Dissociative symptoms and reported trauma among patients with spirit possession and matched controls in Uganda. *Culture Med And Psychiatry* (2010) 34(2):380–400. doi: 10.1007/s11013-010-9171-1
10. Burgess AW, Holmstrom LL. Rape trauma syndrome. *Am J Of Psychiatry* (1974) 131(9):981–6. doi: 10.1176/ajp.131.9.981
11. Kaggwa BH. The problem of mass hysteria in east africa. *East Afr Med J* (1964) 41(12).
12. Nakalawa L, Musisi S, Kinyanda E, Okello ES. Demon attack disease: a case of mass hysteria after mass trauma in a primary school in Uganda. *Afr J Of Traumatic Stress* (2010) 1(1):43–8.
13. Kanungu Tragedy. (2000). Kibwetere, Uganda's most wanted man of the Movement for the Restoration of the Ten Commandments of God cult. New Vision Newspaper Report, https://www.newvision.co.ug/new_vision/news/1300274/kibwetere-uganda.
14. Musisi S, Akena D, Nakimuli-Mpungu E, Abbo C, Okello J. Neuropsychiatric perspectives on nodding syndrome in Northern Uganda: a case series study and review of the literature. *Afr Health Sci* (2013) 13(2):205–18. doi: 10.4314/ahs.v13i2.3
15. Idro R, Namusoke H, Abbo C, Mutamba BB, Kakooza-Mwesiga A, Opoka RO, et al. Patients with nodding syndrome in Uganda improve with symptomatic treatment: a cross-sectional study. *BMJ Open* (2014) 4(11):e006476. doi: 10.1136/bmjopen-2014-006476
16. Mutamba BB, Kane JC, de Jong JTVM, Okello J, Musisi S, Kohrt BA. Psychological treatments delivered by lay community health workers in low resource government health systems: effectiveness of group interpersonal psychotherapy for caregivers of children affected by nodding syndrome In Uganda. *Psychol Med* (2018) 48(15):2573–83. doi: 10.1017/S0033291718000193
17. Elbagir N. (2017). CNN documented Human Slave Auctions. https://www.poynter.org/news/how-cnn-documented-human-slave-auctions.

18. Tete A. (2015). Human cost of illicit flow of small arms, and light weapons permanent observer of the African Union to the United Nations. https://www.un.org/press/en/2015/sc11889.doc.htm.
19. Mollica RF. Invisible wounds. *Sci Am* (2000) 282:54–7. doi: 10.1038/scientificamerican0600-54
20. African Union, AU. (2006). Policy on post-coflict reconstruction and development, PCRD. ConAict, management division. peace and security department. Commission of the African union, Addis Ababa, Ethiopia.
21. Hawkins V. *Stealth Conflicts: How the World's Worst Violence is Ignored*. (Aldershot: hgate) (2008). doi: 10.1177/0267323110025002050 7
22. Musisi S, Kinyanda E, Liebling H, Mayengo-Kiziri. (2000). Post traumatic torture disorders in Uganda. A 3-year retrospective study of case records at a specialized torture treatment center, Kampala, Uganda. Torture Vol. 10 No. 3.
23. Kinyanda E, Musisi S, Biryabarema C, Ezati I, Oboke H, Ojiambo-Ochieng R, et al. War related sexual violence and it's medical and psychological consequences as seen in Kitgum, Northern Uganda: a cross-sectional study. *BMC Int Health Hum Rights.* (2010) 10:28. doi: 10.1186/1472-698X-10-28
24. Betancourt TS, Speelman L, Onyango G, Bolton P. Psychosocial problems of war-affected youth in Northern Uganda. *Trancultural Psychiatry* (2009) 46 (2):238–56. doi: 10.1177/1363461509105815
25. Okello J, Onen TS, Musisi S. Psychiatric disorders among war-abducted and non-abducted adolescents in Gulu District, Uganda: a comparative study. *Afr J Psychiatry* (2007) 10:225–31. doi: 10.4314/ajpsy.v10i4.30260
26. Kasozi J. (2017). The refugee crisis and the situation in Sub-Saharan Africa. http://oegfe.at/2017/06/the-refugee-crisis-and-the-situation-in-sub-saharan-africa/.
27. Amone-P'Olak K. Mental states of adolescents exposed to war in Northern Uganda: finding the appropriate methods of rehabilitation (1). *Torture* (2006) 16(2):93–107.
28. Van Der Kolk BA. Developmental Trauma Disorder: Towards A Rational Diagnosis For Children With Complex Trauma Histories. APA PsycNET. *Psychiatric Annals* (2005). 35(5): 401–408
29. UNICEF. Child Soldiers In Africa - The Paris Principles (UNICEF 2007): Principles and guidelines on children associated with armed forces or armed groups. *Med War* (2007). https://www.unicef.org/mali/media/1561/file/paris prnciples.pdf
30. Lalbahadur A. (2017). https://www.africaportal.org/features/peacekeeping-and-sexual-assault-persistent-stain-united-nations-image/. Peacekeeping and sexual abuse – A persistent stain on the United Nation's Image.
31. Kiwuwa P, Odeng M. (2017). Fourty eight Ugandans commit suicide in middle east. New vision newspaper, Vol 032, No. 207. Oct 18th 2017.
32. Okello J. (2014). War trauma, attachment and risky behaviour in adolescents in northern Uganda. PhD Thesis. Faculteit Psychologie en Pedagogische Wetenschappen, Universitet Gent, Belgium.
33. Bracken PJ, Giller JE, Summerfeild D. Psychological responses to war and atrocity: the limitations of current concepts. *Soc Sci Medicine.* (1995) 40 (8):1995. doi: 10.1016/0277-9536(94)00181-R
34. Webster's Universal College Dictionary. (1997). Random House, New York, USA. Pp36. ISBN .
35. DSM 5. *Diagnostic And Statistical Manual Of Mental Disorders. 5th Ed.* Arlington, VA, USA: American Pyychiatric Association, APA (2013).
36. DSM- IV. *Diagnostic And Statistical Manual Of Mental Disorders. 4th Ed.* Washington DC, USA: American Pyychiatric Association, APA (1994).
37. Musisi S, Mollica R, Weiss M. Supporting refugees and victims of war. In: Hosman C, Jane-Llopis E, Saxena S, editors. *Prevention of Mental Disorders – Effective Interventions and Policy Options*. Geneva, Swizerland: WHO (2005).
38. Summerfeild D. The invention of post-traumatic stress disorder and the social usefulness of a psychiatric category. *Br Med J* (2001) 322:95–8. doi: 10.1136/bmj.322.7278.95
39. Walugembe JE. A pioneer look at post-traumatic stress disorder in Uganda. *Afr J Traumatic Stress* (2009) 1(1). (Post-humus).
40. ICD-10. (1994). International classification of diseases, - Mental and behavioral disorders (F40-F48). World Health Organisation, Version 10, Geneva, Switzerland.
41. Zihindula G. *Consequences of Gender Based Violence on Women's Reproductive Health: HIV/AIDS and Unwanted pregnancies as immediate consequences*. Germany: Lambert Academic Publishing (2011).
42. Boehnlein JK. cultural interpretations of psychological processes in post-traumatic stress disorder and panic disorder. *Trans-Cultural Psychiatry* (2001) 38(4):461–7. doi: 10.1177/136346150103800403
43. Musisi S, Okello ES, Abbo C. Culture and traditional healing in conflict/post-conflict societies. *Afr J Of Traumatic Stress* (2010) 1, 2:p80–85.
44. Herman JL. Complex post-traumatic stress disorder - A syndrome in survivors of prolonged and repeated trauma. *J Traumatic Stress* (1992) 5 (3):377–91. doi: 10.1002/jts.2490050305
45. MAU-MAU insurgency in Kenya. (1952-1960) https://www.blackpast.org/global-african-history/mau-mau-1952-1960/.
46. Rataemane ST, Rataemane LUZ, Mohlahle J. Mass hysteria among learners at Mangaung schools in Bloemfontein, South Africa. *Int J Psychosocial Rehabil* (2002) 6:61–7.
47. Waller J. How distress and pious fear have led to bizarre outbreaks across the ages; looking back: dancing plagues and mass hysteria. *Psychol* (2009) 22 (7):644–7.
48. Cult definition: a system of religious veneration and devotion directed towards a particular figure or object by a group of people having beliefs or practices regarded by others as strange or as imposing excessive control over members. (2008) https://en.oxforddictionaries.com/definition/cult and http://www.dictionary.com/browse/cult%20definition?s=t.
49. Williams RR. (2013). God Loves Uganda. www.imdb.com/title/tt1874513.
50. Gersony R. The Anguish of Northern Uganda. In: . *Results of a Field-based Assessment of the Civil Conflict in Northern Uganda*. Uganda (1997). USAID Mission.
51. Sheikh TL, Mohammed A, Nuhu FT, Akande Y. Coordinating psycho-social interventions for the internally displaced persons (IDPs) following insurgency in North Eastern Nigeria. *Afr J Traumatic Stress* (2016) 5(1):17–22.
52. Wakabi W. Sexual violence increasing in the democratic republic of Congo. *Lancet* (2008) 372(9655):2011–:2012. doi: 10.1016/S0140-6736(08)61854-1
53. Sebit MB. A case study of post-traumatic stress disorder associated with conversion disorder and pain disorder in Tanzania. *Afr J Traumatic Stress* (2013) 3(1):33–8.
54. WHO. (2011). Uganda ministry of health. A report on the burden and epidemiology of nodding disease in the districts of Kitgum, Lamwo and Pader in Northern Uganda – August 2010.
55. Winkler A. The head nodding syndrome clinical classification and possible causes. *Epilepsia*. (2011) 49(12):2008–15. doi: 10.1111/j.1528-1167.2008.01671.x
56. Sommer J, Hinsberger M, Elbert T, Holtzhausen L, Kaminer D, Seedat S, et al. The interplay between trauma, substance abuse and appetitive aggression and its relation to criminal activity among high-risk males in South Africa. *Addictive Behav* (2016) 64:2017) 29–34. doi: 10.1016/j.addbeh.2016.08.008
57. Weierstall R, Haer R, Banholzer L, Elbert T. Becoming cruel: Appetitive aggression released by detrimental socialisation in former Congolese soldiers. *Int J Behav Dev* (2013) 37(6):505–13. doi: 10.1177/0165025413499126
58. Flisher AJ, Lund C, Funk M. Mental health policy development and implementation in four African countries. *J Health Psychol* (2007). 12(3): 515–516 doi: 10.1177/1359105307076237
59. Jenkins R, Baingana F, Ahmad R, McDaid D, Atun R. International and national policy challenges in mental health. *Ment Health In Family Medicine.* (2011) 8(2):101–14.
60. Sankoh O, Sevalie S, Weston M. Mental Health In Africa. Comment. *Lancet Global Health* (2018) 6(9):PE954–E955. doi: 10.1016/S2214-109X(18)30303-6
61. Omar MA, Green AT, Bird PK, Mirzoev T, Flisher AJ, Kigozi F, et al. Mental health policy process: a comparative study of Ghana, South Africa, Uganda And Zambia. *Int J Of Ment Health Syst* (2010) 4:24. doi: 10.1186/1752-4458-4-24
62. Musisi S, Muron J, Nakku J. *Using Mobile Mental Health Clinics to Increase Access to Mental Health Care in Post-Conflict Rural Uganda*. USA: Symposium Proceeds at the APA-San Francisco (2019).
63. Okello J, Derluyn ,I, Musisi ,S, Broekaert E. The Fit Between Mental Health Needs And Programming Responses For War Affected Children In Northern Uganda. In: Derluyn I, Mels C, Parmentier S, Vandenhole W, editors. *Remember. Rehabilitation, Reintegration And Reconciliation Of War-Affected Children, Volume 11 Of The Series On Transitional Justice*. Cambridge/Antwerp/Portland, Intersentia: Sofie Vindevogel, Universiteit Gent. (2012). p. 568.

64. Nakimuli-Mpungu E, Kizito W, Okello J, Alderman S, Odokonyero R, Mojtabai, et al. Group support psychotherapy for depression treatment in people with HIV/AIDS in Northern Uganda: a single-centre randomized controlled trial. *Lancet* (2015). 2(5): p200–7. doi: 10.1016/j.jad.2014.03.042
65. HealthRight International. Peter C Alderman Program For Global Mental Health. https://healthright.org.
66. WHO. Mental Health Gap Action Programme (mhGAP): World Health Organization https://www.who.int/mental_health/mhgap/en/The.
67. WHO. Psychological first aid (PFA) - World Health Organization. https://apps.who.int/iris/bitstream/10665/102380/1/9789241548618_.
68. United Nations Convention Against Torture (UNCAT). A Summary of the Convention against Torture - Redress https://redress.org/wp-content/uploads/2018/10/REDRESS-Summary-of-UNCAT-2018.pdf.
69. United Nations Human Rights Council's Resolutions. https://www.un.org/unispal/human-rights-council-resolutions/. Jan 3, 2019.
70. International Criminal Court (ICC)-Hauge. https://www.icc-cpi.int/.
71. African Court on Human And Peoples' Rights. Mwalimu Julius Nyerere Conservation Center, Dodoma Road, P.O. Box 6274, Arusha Tanzania. http://www.african-court.org/en/.

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Suicidal Ideation and Behavior Among Congolese Refugees in Rwanda: Contributing Factors, Consequences, and Support Mechanisms in the Context of Culture

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Concern in one of the five camps for Congolese refugees in Rwanda about suicide attempts and death in 2017 as well as research data pointing to a relatively high incidence of suicidal ideation in this and a second camp in the same period provided the impetus for this exploratory qualitative study. The study explored factors contributing to suicidal ideation, attempts and death; existing support and referral mechanisms; and recommendations regarding prevention and care strategies. Between July and September 2018, 10 focus group discussions were conducted with refugees and representatives of stakeholders working in the camp, and 21 in-depth interviews with refugees who reported suicidal ideations in a previous quantitative survey, two refugees who attempted suicide, and family members of those who reported suicidal ideas, attempted suicide or committed suicide. Findings suggest that while all refugees have suffered from war and violence in Congo and experienced traumatic events before arriving in Rwanda, the pathway to suicidal ideations was often triggered by the circumstances related to their current situation in the context of refugeehood. Almost all respondents who experienced suicide ideations and/or attempted to commit suicide reported poor mental health, a low sense of connectedness/belonging and a high level of perceived burden, which were greater than their desire to live. Family conflicts were found to be an important starting point leading to suicidal ideations and in some cases to suicide attempts and deaths. For the adult population, family conflicts often resulted from the cultural and legal changes experienced after fleeing their home country, misunderstandings of Rwandan gender equality policies, and disagreements about family income management. For youth, a lack of hope for the future was found among boys and girls, and for some girls, suicidal ideations were triggered by poor interpersonal/family relationships due to unwanted pregnancies. Family, community and faith-based support mechanisms were reported as being available but not always culturally sensitive. Psychosocial support services should be improved and expanded to ensure effective

psychosocial recovery. Family conflicts related to a lack of family communication and a misconception of gender equality policies should be tackled with attention to the cultural factors involved.

Keywords: suicide, Congolese refugees, Rwanda, family conflict, gender equality, economic deprivation, teen pregnancy, cultural dynamics

INTRODUCTION

Suicide, defined as an act of taking one's own life, is a global phenomenon that occurs among people from all ages. According to recent statistics, approximately 800,000 people die due to suicide every year worldwide. In 2016, 79% of suicides occurred in low- and middle-income countries. In that same year, suicide accounted for 1.4% of all global deaths, making it the 18th leading cause of death [World Health Organization (1)]. The relatively scarce research to date on whether or not asylum seekers and refugees are at a higher risk of suicide than other migrant and non-refugee populations has yielded contrasting findings ranging from no difference to a much higher risk [cf. (1–7)]. Factors contributing to a vulnerability for mental disorders and relatively high suicide rates among refugee and asylum seeker populations include potentially traumatic war experiences, distressing life events, difficult living conditions, restrictions on movement, isolation, being uprooted, the lack of social networks and traditional support mechanisms, challenges to self-concept and individual and group identities due to legal constraints, a lack of help-seeking behavior, and uncertain future prospects [e.g. (3, 8, 9)]. The interplay between distant triggers such as mental disturbances, genetic predisposition, and chronic stressors give fertile ground for proximal triggers, namely acute distress, interpersonal conflict, and financial crises that precipitate self-harming acts and constitute a crucial factor for suicide behavior (9). The study presented here, adds to the small number of studies on suicide among refugee populations in various parts of the world. It also responds to the call by Mars et al. (10) to have more studies, in particular qualitative ones, on suicide in sub-Saharan Africa, where suicidal behavior is an important but understudied issue. Ours is a suicide case study in a specific refugee situation—Congolese refugees in Rwanda living in two camps.

According to the United Nations High Commissioner for Refugees (UNHCR) (11), Rwanda hosts approximately 145,895 refugees and 76,202 (52.2%) are from the Democratic Republic of Congo (DRC). The Congolese refugees located in five camps across Rwanda include those who fled their country in the 1990s, as well as the more recent arrivals in 2012-2013 due to renewed hostilities in eastern DRC. The impetus to conduct a study on suicide in two of these camps was concern among the refugee community, camp managers, and stakeholders about suicidal behavior after December 2017, despite a range of psychosocial interventions conducted in *Nyarugenge* and *Mukarange*[1] refugee camps. The main study objectives addressed the perceived risk factors of suicide (i.e. individual, interpersonal, economic, cultural), existing family, community and institutional support and referral mechanisms, and recommendations to inform appropriate prevention and care strategies to be adopted.

The study was action-oriented and should be classified as applied research. Like much research on suicidal behavior, it was not informed by a theoretical perspective. However, a brief analysis of some study results in the *Discussion* section is guided by the "ideation-to-action" framework developed by Van Orden et al. (12) and Klonsky and May (13). This framework builds on the distinction between suicidal ideation and action, which is "especially important when one considers that most people who develop suicidal ideation never go on to make a suicide attempt" (13). Our study confirms this observation. In the study design, we made a distinction between suicidal ideation (suicidal desire, suicidal thoughts) and suicidal action or behavior, differentiated as non-lethal suicidal action (attempted suicide) and lethal suicidal action (deadly suicide or completed suicide). We later found this approach confirmed to the aforementioned ideation-to-action framework.

METHODS

This qualitative study was informed by a comparative quantitative study conducted in 2017 in the context of the implementation of community-based sociotherapy[2] in Congolese refugee camps in Rwanda. The study documented the outcomes of participation in the psychosocial support intervention in regard to the participants' mental health [including (non-)existence of suicidal ideations], perceived social support, life coping mechanisms, and state of economic welfare. A quantitative study was conducted between 2017 and 2018 among 98 (50 in Nyarugenge and 48 in Mukarange) and 74 refugees[3] (37 respondents in each camp) prior to and after their participation in sociotherapy. Using a systematic sampling,

[1] Pseudonyms have been used for camp names for ethical purposes.

[2] Community-based sociotherapy aims to contribute to psychosocial wellbeing, reconciliation and social cohesion in the aftermath of mass violence. It implements a socio-dynamic approach, using the group as a therapeutic medium in the establishment of trust, the creation of an open environment for discussion and the formation of peer-support structures. People meet in their neighbourhood for weekly sessions over a period of 15 weeks facilitated by two trained sociotherapists who are from the same neighbourhood [see e.g. (14, 15)].

[3] The 74 refugees in the post intervention are less than the number of refugees enrolled in the pre-intervention (n = 98) because only sociotherapy participants who attended at least 10 of the 15 sociotherapy sessions were eligible for post-intervention evaluation. Five were not eligible for the post-intervention (attended less than 10 sociotherapy sessions), and 19 could not be located (i.e. left the camp, gone back to school, etc.) during the time of the post-intervention survey.

participants were selected from the lists of those attending sociotherapy. Subsequently, a qualitative study on suicidal ideations in both camps was performed between July and September 2018. In total, 10 focus group discussions (FGDs) with 86 people were conducted (44 men and 42 women) across both camps. Two FGDs were held with religious and local leaders (including refugee representatives); two with community members, two with stakeholders working in the camps (Ministry of Emergency Management (MINEMA), UNHCR, World Vision, Plan international, Africa Humanitarian Action (AHA), Humanity and Inclusion (HI), Community-based Sociotherapy/Duhumurizanye Iwacu Rwanda as well as the American Refugee Committee (ARC); two with refugee community mobilizers working for Plan International, HI, World Vision and the sociotherapy program; and two with members of the refugee committee of elders and vulnerable people. In addition, 21 in-depth interviews (IDIs) with seven male and 14 female refugees were conducted. IDIs were conducted among the nine refugees who had reported suicidal ideations in the quantitative pre-intervention survey, two refugees who had attempted suicide, and family members of those who a) had reported suicide ideation (n = 3), b) had attempted suicide (n = 2), and c) had died as a result of suicide (n = 4). None of these interviewees participated in the FGDs. Prior to the individual interviews, respondents read and signed an informed consent form and an ethical approval from the Rwanda National Ethics Committee (No.106/RNEC/2018) was obtained. Interviews were conducted in Kinyarwanda, transcribed and translated into English, followed by a thematic analysis according to the research questions. Written consent forms were also obtained for summarized stories highlighted in the *Discussion* section and names have been modified for ethical purposes. Findings were presented according to the study objectives and following the order of importance regarding causes of suicide as perceived by respondents.

TABLE 1 | Incidence of suicidal ideations, attempts and suicidal deaths in 2017 and 2018.

	Suicidal Ideations quantitative pre-intervention data October 2017 N=9	Attempted Suicide qualitative interviews Dec 2017–June 2018 N=2	Suicidal Deaths data provided by family Dec 2017–June 2018 N=4
Camps			
Nyarugenge	4	2	4
Mukarange	5	0	0
Sex			
Male	3	1	3
Female	6	1	1
Age			
<15	0	0	0
15–25	3	0	1
26–50	2	1	1
>50	4	1	2
Education			
No education	4	2	0
Primary	2	0	4
Secondary	3	0	0
Marital status			
Single	1	0	1
Married	3	0	2
Separated	2	2	1
Single mother	2	0	0
Widow	1	0	0

RESULTS

Incidence of Suicidal Ideations, Attempts and Suicidal Deaths in 2017 and 2018

Data presented in **Table 1** shows that the majority of those who reported suicidal ideations were women, whereas men actually committed suicide. Suicidal ideations were reported in both camps, while all suicidal attempts and actions happened in Nyarugenge refugee camp.

Perceived Causes of Suicidal Ideation and Behavior

Everyday Distress Related to Refugeehood

Most respondents appreciated the pre-migration life in Congo before the invasion of armed groups, the war that started in the 1990s, and other forms of violence. A large number of families had owned land for agriculture and cattle grazing activities. The high level of insecurity, family separation, family member murders, and loss of property made many refugees ultimately decide to flee to Rwanda. Although the refugees were provided with support for their basic needs in the Rwandan camps, many found it difficult to make ends meet. They also experienced difficulty coping with the memories of their painful traveling from Congo to Rwanda and the losses they had experienced. Suffering due to their past traumatic experiences coupled with current cultural differences and daily life challenges often resulted in tension and conflict at the family level. According to the family member interviews, conflict was prevalent in the families of someone who had had a desire to commit suicide or had attempted suicide. This suicidal desire and behavior resulted from many factors, including polygamy, adultery, misconception of gender equality, lack of proper and regular family communication as well as family income management such as the monthly allowances provided by the World Food Program (WFP). It was also reported that some refugees with suicidal ideation and behavior had previously had familial experiences of suicide (i.e. grandparents, uncles or other family members) as a way of solving their (family) problems.

> *These people changed life, but they didn't change their mind. Problems similar to the ones people face today existed even in their home country. However, today people are isolated, they don't see a future, even a future for their children. In Congo, if one of the parents was unable to feed his children, he preferred to commit suicide, which is the same here today*. Church leader, Nyarugenge.

> *They* [men] *can't endure the hard life they are living now. They used to support their family, but now they can't even get money for salt. In some cases, some of them commit suicide. In these hard-living conditions, conflicts tend to arise in families due to poverty and hunger, which sometimes end with suicide. A man who used to drink milk and used to have a word in a society and in his family, experiences that all these things are no longer there*. Male respondent, FGD with refugee committee of elders and vulnerable People.

While multiple and intertwined factors lead to suicidal ideation and behavior, in the section that follows, the factors that put Congolese refugees in Rwanda at risk for suicidal ideation and behavior are presented individually.

Loss of Manhood and (Mis) Understanding of Gender Equality

Many Congolese respondents (mainly men) reported changes in gender roles and responsibilities as a result of relocating to Rwanda. In Congo, families were characterized as dominated by a patriarchal system in which men were perceived to be the heads of and providers for their families (wives and children) and responsible for familial order and protection. Arriving in Rwanda, men were confronted with a legal framework in which women's rights and empowerment are key and serve as a prerequisite to sustainable development (16). Some respondents indicated that the Rwandan legal framework for gender favored women, who back in Congo could be exposed to toxic masculinity and gender-based violence with no legal sanction (17). Some respondents had misconceptions of principles of gender equality as promoted in Rwanda and reported that women think they are superior to their husbands and adopt a conceited attitude. Male refugees in the IDIs and FGDs perceived Rwandan gender equality (focused on women's empowerment) as a way to disempower them and/or attack their value and dignity, which caused resistance and conflict between men and women. The situation was even harder to accept for men who perceive themselves and/or are perceived by others as no longer being family breadwinners, guides, providers or protectors as highlighted in the quote below.

> *The reason that we say many men don't have their dignity is that they can't even punish their children. When you have a young girl, you can't ask why she arrives at home late in the night. The girl can't respect her father who is not able to give anything as she gets everything she needs from her mother as the one receiving the money from UNHCR. The men don't have control over the behavior of their children and they can't punish them. In the past, if there was a misunderstanding in the family, the final decision was made by a husband, but now the situation has changed and the final decision is made by the wife. So, without going into details, the majority of men feel they have no dignity*. Male respondent, FGD with community members, Mukarange.

The above statements were confirmed by female respondents who highlighted that for men to have dignity, they need to be able to provide for their families by finding a job and/or owning a business instead of spending the day sitting at home in the refugee camp.

> *According to my observation, men who have their dignity are those who have a job or business so that they bring income to the family. Those ones can manage their households well. But for men who stay at home or sit at the compounds waiting for meals, they are despised and don't have dignity in their families*. Female respondent, FGD with local and religious leaders, Mukarange.

The situation in the camps often prompted low self-esteem among men who, if not supported and/or not able to adopt positive coping mechanisms, were drawn into hopelessness. In a few cases, this led men to commit suicide to end social suffering, drinking alcohol and/or taking drugs to overcome sleeplessness or separating from their wives and engaging in other unions. Conflict between spouses sometimes impacted the children as well. For instance, in one family, a man left the house and went to live with another woman, thus leaving behind his wife and 10 children in the camp. The husband positioned their daughter (still studying) as the head of the household instead of his former wife. That daughter became the leader of the family who was entitled to get the family monthly allowances. The mother was offended and felt she had no value, which prompted her desire to commit suicide since she believed that she was supposed to take care of her children instead of her daughter.

For many male respondents, the issue of gender equality and changes related to gender roles and responsibilities were the main factors that could lead to suicidal ideations among men. Indeed, this was reported to a much higher extent as a cause compared to their past traumatic experiences in the Congo and current poor life conditions in the Rwandan refugee camps.

> *It is not only poverty that causes suicide, but conflicts that exist in families. We can, for instance, go cultivating and when we come back, I can pass somewhere on the way and she can go home quickly. When I am back home, I find her drunk. When I ask her why she did not cook, I am insulted in front of the children. That will make me sad and I can kill myself*. Male respondent, FGD with refugee committee of elders and vulnerable people.

> *I joined sociotherapy because I was experiencing bad moments when I was having intense conflicts with my wife. I sought help, starting from the village level, and subsequently from the president of the camp, Plan International and MINEMA*[4] *office. Even when I participated in the training of Abunzi* [mediators], *I shared my case in order to seek advice. At that time, I had spent three months living alone for the sake of my*

[4]MINEMA: Ministry of Emergency Management.

> *own safety. My wife despised me, saying that I did not build the house we were living in and I did not bring anything to the family. Even though I have bought four fields to cultivate, but she did not give me any respect. I felt like a person without any respect in society. I thought about committing suicide because you imagine yourself as a man who spends three months alone in a house, preparing himself the meals, is not easy. I spent all night without sleeping, thinking about our marriage, how I loved her and how now she abuses me at an old age. All this made me feel psychologically traumatized*. Male respondent with suicidal ideation, Nyarugenge.

While not many respondents highlighted the issue of sex deprivation in their relationship as a potential cause of suicidal ideation and behavior, one male respondent clearly mentioned that he felt terribly insecure and no longer a man when his wife decided to separate their beds and accused him of being a drunkard. According to this male respondent, his wife's reason for this deprivation was an excuse since he had also drunk alcohol when they were back to Congo. He attributed his wife's behaviors to the fact that he is no longer able to financially provide for his family.

> *What caused that* [suicide attempt] *is that since we reached this camp, she denied me my rights as a husband. She separated beds, she had her own bed, and I had mine. After bearing with that for 4 years, I wondered whether I am still a real man! She said that I drink and that she doesn't want me to use alcohol. However, when we got married in Congo I already used to drink. I don't think drinking was the cause. Instead, it was poverty. I tried suicide this month (*July*) because she provoked me with bad words in addition to what I was going through, and I got very annoyed. She told me "remember a man is respected by the property he owns!" When I heard this, I got very annoyed*. Male respondent with suicide ideations, Nyarugenge.

A staff member of an NGO working in the camps also linked the issue of gender equality with sex deprivation:

> *What is more important is spousal differences in understanding gender equality, because we have many cases of men who committed suicide caused by a misconception of gender equality. If a woman starts a dispute, her husband cannot beat her fearing to be arrested; that is why men prefer to die. In some cases of family conflicts, couples sleep in separate beds*. Male respondent, FGD with stakeholders, Nyarugenge.

Management of Financial Resources (mVisa)

The loss of manhood was exacerbated by the recent change in the way support for basic needs was provided in the camps. From September 2017 onwards, the Rwandan branch of the UNHCR and the WFP introduced a new cash payment system (locally known as mVisa) that has been generally well received by the refugee community.[5] Almost all interviewees testified that the monthly allowance of 7,500 Rwandan Francs (USD 8.50) per individual is often used to cover their basic needs such as buying food, cooking materials, clothes, or renting a piece of land for cultivation. However, almost all respondents reported that the allowance is not sufficient to cover their needs and so they try to cope obtaining small community loans refunded on a monthly basis. In general, women are in charge of the family's financial management and monthly allowance since when families initially registered to receive UNHCR/WFP food, the women were generally designated as "head of household". The change from a food to cash support system was not wholeheartedly accepted by men. Some men described having their position of family providers replaced by UNHCR/WFP⟶a situation that humiliated them in front of their wives or families.

> *No, we don't have our dignity as men, as other men. I experienced this after arriving in this camp. A wife is not yours and, a daughter is not yours, and children are followed by specific organizations. You can't have a time to discuss with your wife and decide together what to do because she values mVisa and UNHCR*. Male respondent, FGD with community members, Mukarange.

> *Aaah, as I see, men living in this camp don't have the right to that money. You see, if someone has the habit to take a beer, he cannot use that money. Previously, the last time when WFP distributed food, oil, etc., a man could take a bottle of oil, sell it and have money to buy a beer. But now, WFP gives money to the head of the family and in most cases heads of families are women. So, if one tries to take some money in order to buy other things, this can create conflicts in the family. So, for men the situation has changed and they have to be aware of that and try to manage that situation*. Male respondent with suicide ideations, Nyarugenge.

According to some respondents (men and women), it was not a good option to have men be responsible for WFP money, since some men used the money irresponsibly (i.e. buying alcohol) and not meeting the family's needs, which created tension at the family level. On the other hand, women managing the WFP allowances were not welcomed by men who considered the women to be selfish because they would not share a bit of money to cover their (the men's) needs and/or allow them to buy a single bottle of alcohol. Coupled with the existing challenges in family communication and changes in gender dynamics, financial issues often led to a high level of family

[5] A pilot cash and voucher initiative launched by the WFP to replace the general food distribution in refugee camps. The monthly allowance (mVisa) enables refugees to pay through their mobile phones, giving families much more independence to make their own choices and diversify their diets according to their individual needs and preferences.

conflict and in some cases incited thoughts of suicide among men.

> *We didn't receive any case of suicide last year* [before December 2017], *because they received food instead of money. Back then, a man could not ask about food, he could eat, but did not go in depth asking details to his wife. In their culture, the man receives money in his hands, but today money is received by his wife and it is difficult for a woman to give her husband the money to buy a beer. I think that ideas of suicide and family conflicts increased since last September* [2017]. A refugee local leader, Nyarugenge.

> *As mentioned before, a man spends his day at a place named "ku gahinda", which means sorrow mountain, and when he arrives home he doesn't take time to talk with his family* [wife and children]. *The wife on her side also doesn't converse with their children and doesn't plan with her husband on how to use the ration* [money] *once they have it. When the man asks money from his wife, as she is the one to manage it, the wife doesn't give it because it is reserved to feed the family. Hence, the man feels neglected and conflicts start that lead even to suicide. Often, men commit suicide when the monthly allowance is obtained. Men don't feel any taste for life, they consider themselves as useless*. Female respondent, FGD with community members, Nyarugenge.

Some female respondents disagreed with the male accusation of disobedience, since for them, the little money received from WFP barely covered their family's needs.

> *You see, our husbands accuse us of disobeying them, but it's not true. It is like this, I might give my husband the money to go and do the shopping, but he might not buy what he is supposed to buy. Therefore, I will have to do it myself. So, if I bring the food home, he thinks that I have disobeyed him. This is unjust. We are given this money by WFP for food only, so if you happen to use it for other things like buying sandals, you don't understand what WFP provides the money for. So, if he is an irresponsible man, you end up quarrelling for nothing, thinking that you disobey him while you are just confused of what to do. The quarrel is brought in due to insufficient funds*. Female respondent, FGD with community members, Nyarugenge.

There were, however, some respondents who reported that marital partners do sit and decide together on how to manage the income they receive. In these families, the women who receive the monthly allowances are aware of their husbands' needs such as buying a drink with friends, which is culturally very meaningful since the men are then able to socialize with peers while sharing drinks.

> *To respect my husband requires that he lets me manage the money as I managed the food we received before. However, I have to be aware that my husband needs a little money to satisfy some of his needs such as sitting with friends and taking a bottle of alcohol*. Female respondent, FGD with community mobilizers, Nyarugenge.

The respondents noted that gaining employment or initiating income-generating activities was difficult while living in the refugee camps. However, a few respondents did manage to secure paid jobs in organizations working in the camps such as Plan International, ARC, World Vision, CBS/DIR, and AHA. A few refugees managed to open small businesses such as selling food crops and running small restaurants, which partly contributed to meeting their family's daily needs.

Inability to Fulfill Parental (Motherhood) Responsibilities

A few old women who spoke about suicide ideation or attempted suicide reported their fear of not being able to cover their grown children's needs and the consequences that might follow from that situation (their adolescent and young adult children engaging in sexual relationships to cover their needs). In a position wherein they could not fulfil their responsibilities as a parent, these elderly mothers observed their grown children (especially daughters) misbehaving, which incited them to envision suicide instead of continuing their (the mothers') suffering.

> *I have six girls. One of them asks me lotion, another one asks me shoes, again another asks me clothes like other girls of their age, while I am not able to provide this. That is why you see most girls here getting pregnant at such a young age. When a girl meets with a boy who gives her 1,000 Frw to buy lotion, she easily accepts his propositions including having sex. Imagine you are a parent and your daughter comes with all those things and later becomes pregnant just because of poverty, won't you feel pain in your heart? It hurts you as a parent to the extent you feel like committing suicide rather than living such a life*. Female respondent with suicide ideations, Mukarange.

A woman who attempted suicide narrated:

> *That day* [of attempting suicide], *we* [she and her daughter] *had a lot of misunderstandings and I was angry. I said that she could meet her boyfriend outside my home, but not inside. That was my reason of being angry. You know, she brought him during the night and they wanted to sleep together while I slept in my room; that was very bad to me. I could not tolerate that situation. Can you tolerate that a boyfriend comes and sleeps with your daughter while you are in the same house? And that man is not even her legal husband. No.*

That is very bad. My daughter has a child and now she is pregnant again from the same boyfriend. Better they live in their own house, and then we visit each other. Female respondent, Nyarugenge.

In some cases, the fear of not being able to cover the family needs due to their limited monthly funds outweighed the desire to live as also expressed by a young girl whose coping mechanisms were limited:

You see, now I am a girl and stay at home without any job. I am an orphan living with my young sisters. I felt that I could not be the head of the family, not feeling able to take that responsibility. I was thinking that it could be better to commit suicide and let my young sisters suffer themselves without me. I was not able to cover all that we needed, I was feeling without safety, and so on. Female respondent with suicide ideations, Nyarugenge.

Unmarried Pregnant Young Women With Suicide Ideation

Becoming pregnant without being married is generally not culturally accepted by Congolese families and community members living in the Rwandan refugee camps. This situation often leads to discrimination and negative labelling (i.e. prostitutes), which is why girls with unwanted/unplanned pregnancies frequently become isolated with limited contact with the rest of their family and community members. These girls may express thoughts of suicide as evidenced by two in Mukarange camp who narrated that they found themselves emotionally devastated with no hope for the future. They dropped out of school from self and social stigma and, more importantly, struggled with wondering how they would take care of their children while they (the girls) were also still young. They also reported lacking family support and facing family and community insults after people learned of their pregnancies.

I got pregnant while still young, I was a student. I did not plan that. Then I saw my living conditions here in the camp and my family not having means to support me. I was thinking that if I told them my problem, they would not understand. I was thinking that it could be better to commit suicide instead of causing problems to my family. I stopped going to school. When you have such problems, you prefer to be isolated, you feel hopeless. I spent much time thinking of how I could take care of a child being still young. When people started to see that I was pregnant, they observe that you have changed, but do not tell you what they observed. I could not sleep; I was very concerned that my family is worried because of me. I could not meet or talk to people like before, I became someone living in isolation. I felt stressed as my family wanted to know the father of the baby. It was a bad situation and I was challenged to give them the answer. I was thinking that if I tell them who impregnated me, that boy will be taken to prison while he did not take me by force. After they [parents] *calmed down, I told them who the father is.* Female respondent with suicide ideations, Mukarange.

Use of Alcohol and Drugs

The use of drugs and alcohol was not commonly reported by respondents with suicidal ideation. Some said that they had stopped drinking alcohol when confronted with life challenges. Only a few respondents conveyed that they sometimes drank alcohol to cope with their sleeping disorders.

No, that did not happen to me; on the contrary, I stopped taking alcohol because I was worried about the life of my children. It is difficult to live in these conditions and take alcohol or drugs. Male respondent with suicidal ideations, Nyarugenge.

At that time [when his wife was sick and hospitalized], *I could meet my friends and they asked me the evolution of my wife's illness, and then they said: "We can offer you a bottle of beer," and when I took that, I could get sleep for a short time during the night.* Male respondent with suicidal ideations, Mukarange.

However, the family members of these respondents reported that there was alcohol and drug abuse among people with suicidal ideations and behavior, which contradicted the respondents' statements noted above.

Signs, Symptoms and Perceived Behaviors Prior to Suicide

According to some respondents, it is often difficult to know that a person will commit suicide despite the changes observed in the person's attitudes and behaviors. They reported that some victims tended to "act very normal" prior to or during the day of suicide, probably as a way of not attracting the attention of family members. For instance, victims who committed suicide were found to be happy, relating well with family members, attending church services or playing football on the same day that they committed the act.

Symptoms commonly observed referred to mental disorders, such as depression (*agahinda gakabije*). The presence of these symptoms often went unnoticed by refugees, which resulted in the respondents in this study pointing to the need for services to focus on early detection of depression. Symptoms observed by the respondents included anxiety, isolation, a lack of interest in communal activities such as church attendance, loss of hope for a future life, silence about one's feelings, crying (mainly among women), insecurity, alcohol abuse, deep sadness, hatred towards people of the opposite sex, a loss of dignity and value (mainly among men) and a range of psychosomatic symptoms including stomachache, chronic headache, heart palpitations and insomnia. Loss of interest in one's own physical appearance and in doing daily activities was also commonly mentioned.

Community Perceptions of Suicidal Ideation and Behavior

Respondents expressed having mixed feelings about committing suicide in refugee camps. Suicide is known in the camps as "*gutora supanet*", which literally means using the rope of a bednet [as a lethal means for suicide] and is the most commonly used language for this action. For some, suicide is abominable, and all the more so since it has negative consequences for the entire family because of stigma and conflict. However, for others, committing suicide was saluted and considered to be an act of courage, which some of them in a similar situation have failed to adopt as a response to their severe emotional pain.

> *Sometimes when a man dies, people say that he is a hero because he chose to commit suicide instead of being mistreated by his wife*. Male respondent, FGD with community mobilizers, Nyarugenge.

Consequences resulting from suicide ideation and behavior range from emotional suffering, family disruption and social stigma to increased economic problems for those who have had suicidal ideations and attempts. Family members of those with suicidal ideation often felt unhappy and unsafe, fearing that a suicide attempt might happen any time. Feelings of shame and guilt among those who had attempted to commit suicide and their families were often shared. Members of these persons' nuclear families face stigmatization by extended family members and/or the community since they are perceived as the trigger that led to their relatives' suicidal ideation and behavior. In single-parented families, a major consequence of adult suicide is the issue of the children's care following a parent's suicide. This often results in the children being placed across several families throughout the camp.

> *Yes, for consequences, let me start with my young sisters. When they observed that I had anger, they were unhappy, worried and felt insecure because of me*. Female respondent with suicide ideations, Nyarugenge.

In some cases, families have also been affected economically by a relative's suicide since those who committed suicide were part of a larger family support system.

Support Mechanisms to Address Psychosocial Issues Related to Suicide

Respondents highlighted that whenever family conflicts and/or psychological issues are noticed within a family, the first support usually comes from family members and neighbors. This support is organized through family meetings during which various matters, such as family conflicts, are discussed to find solutions. Individuals facing psychological issues are comforted in these meetings. Community meetings such as parents' evening programs (*umugoroba w'ababyeyi*) were mentioned by a number of respondents as another platform for discussing individuals or families' psychosocial issues. However, they stated that this is not done on a regular basis. Most of the respondents referred to the sociotherapy program in the camps for sharing and healing in a group setting and individual counselling services provided by the Rwandese Association of Trauma Counsellors (ARCT) for individuals with psychological distress who can also be transferred to the camp health centre or district hospital if needed.

> *I was feeling hopeless and I was thinking on suicide. I was very tired with problems* [lack of means] *and wanted to commit suicide. But, after being in sociotherapy, I changed my thinking. As I have been helped by sociotherapy, I am also able to help other people with psychological problems*. Female respondent with suicide ideations, Nyarugenge.

Community volunteers supervised by the American Refugee Committee (ARC) staff were also mentioned as key people in the community for family conflict resolution initiatives such as mediation. Whenever conflicts were deemed to be severe and unresolvable, respondents highlighted that camp managers opted for temporary separation of the family members, for instance, by providing an additional house.

Faith-based support was also commonly mentioned by respondents. This support generally involved family visits when something bad happened. The visits included an exchange about the word of God, praying together and the provision of supplies for basic needs, namely food. Most of the refugees in both camps are members of the Seven Day Adventist Church, hence they benefit from Church support. However, some respondents reported that *Eglise des Amis* (Friends of Peace House Program)[6] provides training to refugees and the host community (Rwandan population living close to the camps) on conflict resolution as well.

All participants appreciated camp-organized activities and events for physical recreation and emotional relief mainly targeting children and youth: games, concerts, dances, sketches, watching football, or movies. For old men, cultural games such as chess and stick fighting (*Kuyobanwa)* and, for women, marathons (*Gukataza*) are regularly organized and help to release their stress.

While respondents seem to be aware of the various community mechanisms for support of individuals and/or families with psychosocial problems (e.g., community volunteers), it was not always clear to the refugees how to proceed when additional support was needed. This was partly due to the fact that some respondents were not aware of the multiple organizations working in camps and their areas of intervention.

> *In general, people are aware of the referral system for managing social problems; a system that runs from the village to the executive committee of the camp and to stakeholders in charge of managing problems in the camp. But, the referral system for caring for people with psychological problems is not clear for many people. I am not aware of that referral system. I am among the people who were traumatized psychologically, but I did*

[6]The "*Eglise des Amis*" Church's "Friends of Peace House Program" offers services related to conflict resolution, mediation and trauma healing.

not receive that support nor a referral to another level. Male respondent with suicide ideations, Nyarugenge.

Recommendations

Although support mechanisms are available, respondents provided recommendations to overcome life adversities leading to suicide ideation and behavior in both camps as highlighted below.

Community Awareness of Suicide and Prevention

Stakeholders working in camps should collaboratively plan and conduct regular community campaigns that raise awareness of the potential triggers for suicide. The campaigns should focus on recognition of preliminary symptoms of suicidal ideation; individual, family and community consequences of suicide; and the promotion of support- and care-seeking among refugees. It would also be beneficial to organize training for camp community members on the basic support skills for people who experienced suicidal ideations or have attempted to commit suicide.

It will be better to sensitize people to share their problems with others and not keep them for themselves. When you share your problem with someone, you can get advice and change your dangerous thoughts. Community members should also be sensitized to identify people with psychological problems and report them to sociotherapists or to other levels in the referral system to be cared for. For instance, if you identify a person with psychological problems, you can help him/her and if you are not able to do so, you can refer him/her to other levels of the care system where he/she can get appropriate care. Female respondent with suicide ideations, Mukarange.

Psychosocial Support

The fact that people who experience suicidal ideations and those who have attempted suicide, and their families, were found to be highly affected by suicide at an emotional, psychological and socio-economic level, requires that specific support be tailored to individuals, families and the community as a whole. Based on the study findings presented here, this can be done through:

- The availability of individual and family counseling services in cases when suicidal ideations and/or attempts have been reported. Counseling sessions to help victims (both victims of ideation and behavior as well as their family members) release their pain (emotional suffering) and overcome fears, and to promote positive ideas about their future life while preventing potential suicide contagion within families.
- Increase psychologists and psychiatric nurses in the personnel of the clinic in the camps.
- Reinforce trainings for the health personnel with a particular focus on mental health (i.e. depression, drug and alcohol abuse, suicidality, etc.).
- Create special provisions for people with mental disorders to access care at the referral hospital.
- Strengthen community-based services such as parents' evening programs (*Umugoroba w'ababyeyi*) and ensure they are being held on a regular basis. These programs promote community sharing about their everyday lives and build community trust that can help refugees overcome life challenges (both individually and as families).
- The sociotherapy program implemented in the camps was highly recommended by respondents for healing, promoting positive family and social relationships and improving the coping mechanisms of individuals and families. Scale-up of the program through an increased number of trained sociotherapists and facilitated sociotherapy groups would produce a wider societal impact including a reduction of suicide ideation among participants.
- A special focus in any activity must be to involve men, since they are much affected by current life in the refugee setting. Men were found to be traditionally characterized as strong human beings who could not show their emotional suffering or ask for help if needed. To overcome this barrier, tailoring men's involvement by developing self-help materials and forming homogenous group dialogues (only men), should be considered to facilitate an open environment for honest and non-judgmental sharing.

It will be better to increase the number of community members in charge of taking care of people with psychological problems. I want to thank Mvura nkuvure [Kinyarwanda term for sociotherapy— "you heal me, I heal you"] *for operating here. I really appreciated it so much. I wish that they let us continue going there, because if we put it aside, there will be setbacks. Normally, when we are down there talking to each other, you feel happy. When the time was approaching to meet, we all used to work at home very fast and wash clothes faster, so that we would not be late. When I heard that it's over, I started wondering how things are going to look like. Now, I don't know who can listen to me because I fear sharing with my neighbors who can gossip about my problems. In sociotherapy, we found a safe place where they normally teach good habits. I would like to ask people in charge of the sociotherapy program to take some measures, which can help those who graduated from the program to avoid setbacks. Take the example of a hoe, the one that digs is always sharp but the one that does not, gets rust.* Male respondent who previously reported suicidal ideation, Mukarange.

Improvement of Family Communication and Understanding of Gender Equality

Most family conflicts that led to suicidal ideation among men, in particular, were related to a lack of family communication and misconceptions of Rwandan gender equality policies and practices. In collaboration with stakeholders, it was

recommended that organizations working in both camps design a culturally sensitive program that addresses the issue of gender-based violence in refugee settings. The program should include the promotion of women's rights and empowerment while preventing men's feelings of a loss of dignity from non-participation in family income management.

> *If a couple takes their time to plan the use of money given by WFP, the spouses should not have a conflict because of money. I suggest to discuss the use of money/ration because the problem is not really the mVisa as such*. Family member of a person who committed lethal suicide, Nyarugenge.

> *The lack of dialogue on the use of a mVisa card is the root cause of problems. Women feel that they have the same rights as men. There is a misunderstanding of what gender balance is. Women don't tell their husbands how they spend the money they receive. In some families, men are not aware of the way wives spend the money, they don't have all details. Men presume that women are the chiefs of families as they are the ones to decide. The lack of dialogue is really the cause of conflicts and should be dealt with*. Male respondent, FGD with community mobilizers, Nyarugenge.

Joint Stakeholders' Mechanisms and Effective Program Delivery

Stakeholders, including NGOs, MINEMA, UNHCR, and WFP, in both camps focus on distinct areas of intervention. Thus, it was recommended that joint meetings and interventions are needed to ensure prompt actions and better outcomes. Regular sharing of information among NGOs, multilateral organizations, and MINEMA and establishing a proper referral system and follow up of referred cases were mentioned as important elements to ensure that camp communities receive effective services in an efficient manner.

One of the concerns expressed by respondents was the adoption of non-culturally relevant solutions to issues identified in the camps such as family conflicts (i.e. offering a job to one of a couple in conflict). According to the respondents, this aggravates conflict rather than ending it. More consultation and participation by community members in conflict resolution initiatives are needed to ensure that the cultural context in which the programs are embedded and implemented is considered. This would reduce community prejudice sometimes attributed to camp stakeholders.

> *If conflicts are solved within a family by organizations in charge, women should not be given a reward because of accusing husbands. If I give an example, a woman might get a gift of Kitenge* [an African fabric for women] *or offered a job because she dared to accuse her husband or because of the way she responded to family conflicts. This is not appreciated by the community here in the camp*. Female respondent, FGD with community mobilizers, Nyarugenge.

> *Another thing is how these organizations deal with our problems. I can submit my problem and it takes three to four months to get a solution offered. I am wondering if there is no way to solve our problems quickly. If you receive a problem and you are not able to handle it, you can refer it to one who is capable of solving it. If you don't do it in time, you* [organizations working in camp] *will take the initiative to do it while it is not needed; that is why I beg you to work as a team. That will help us to get the solution and to prevent the scandal that can happen*. A church leader, FGD with stakeholders, Nyarugenge.

Economic Empowerment Through Small Income-Generating Activities

Most of family conflicts were related to insufficient financial funds provided to families in refugee camps. While obtaining access to additional funds was challenging, some families and/or individuals managed to find small paid jobs or engage in agricultural activities. However, these refugees recognized the importance of regrouping themselves into cooperatives, which they said are effectively working in their host community to ensure access to financial funds and reduce conflict. Thus, it is suggested that MINEMA in collaboration with other stakeholders, namely UNHCR and the WFP, conducts a financial analysis adapted to the refugee setting if increasing monthly allowances is challenging. Stakeholders working in camps need to leverage existing human resources among the refugee population for all job openings before considering external [non-refugee] candidates.

Active Involvement of Church-Based Initiatives

Many respondents recalled the important role the church has been playing, from care for spiritual wellbeing to social support. Churches organize regular activities such as prayers and events (*ibitaramo*), but churches were also found to be important sources of spiritual, emotional, social and economic support for members in need. Therefore, it was recommended that churches should keep advocating for behaviors that are considered to be physically and mentally beneficial to the community.

Education on Sexual and Reproductive Health Among Youth

Some of the young girls manifested suicidal ideations after becoming pregnant at a young age. For them, early pregnancy leads to a lack of family support and community stigma exacerbated by the general poor financial situation observed among the refugee population. The incidence of unwanted pregnancies among this young generation of reproductive age suggests that they are engaged in unions that often lead to sexual activities, while their knowledge of reproductive health (e.g., family planning), is still limited. In collaboration with stakeholders, a special education program on reproductive health among adolescents should be designed and implemented.

Promotion of Entertainment Activities

Respondents in both refugee camps showed appreciation of the activities and events organized for recreation and to reduce social isolation. Therefore, there is a need for scale up of these interventions. Most highlighted activities, particularly for the youth, included games (e.g., football tournaments), concerts and traditional dances. Activities for men included playing a traditional board game and the aforementioned "*Kuyobana*" that both symbolize a cultural way of fighting in an atmosphere of joy.

DISCUSSION

The study findings presented here provide a synopsis of proximal factors that may contribute to suicidal ideations, attempts and actions in both Rwandan refugee camps for Congolese refugees in general. Most of factors identified are similar to what has been reported elsewhere as listed in the Introduction, but also, as stressed by respondents, culturally specific ones. The exposure to norms and values in the host country they are unfamiliar with increases suicide risk.

Suicide (ideations, attempts, and/or death) among the Congolese refugee young generation were mainly explained by a lack of hope for the future and unwanted motherhood, in addition to their current poverty in the camps. Suicidal ideations for women were explained by an inability to cover their family's basic needs and sometimes the misconduct of their adolescent and young adult children (i.e. drug and alcohol abuse among boys and culturally unacceptable and unwanted pregnancies outside of marriage for girls). For men, the main issue highlighted was the cultural changes they were exposed to in the camps and their implications for gender roles and responsibilities. The deprivation of their role as family provider and the empowerment of women resulted in feeling a loss of value and dignity that often led to family conflict, depression symptoms and eventually suicidal ideation. While community support mechanisms to tackle the community issues were identified, some support provided by camp organizations were found to be culturally insensitive (e.g., rewarding one of a couple in conflict and not the other), which may serve to create additional challenges refugees have to struggle with instead of solving family conflict.

Klonsky and May (13) argue that traditional theories to understand suicide have failed to differentiate between explanations of suicidal thoughts and of suicidal behavior. According to the authors, a critical advance occurred when Joiner (18) introduced the "ideation-to-action" framework, which made that differentiation. Klonsky and May (13) position their own theory, the Three-Step-Theory (3ST), within this framework, and by doing so further support the work of those who had initially created the ideation-to-action framework, e.g., Van Orden et al. (12). In short, the 3ST hypothesizes that a combination of pain (usually psychological pain) and hopelessness is required to develop and sustain suicide ideation. Step two of the 3ST suggests that ideation escalates when the pain exceeds or overwhelms connectedness to loved ones, valued roles, or any sense of meaning or purpose. If the pain exceeds connectedness, suicide ideation increases from modest/passive (e.g., "Sometimes I wonder if I would be better off dead") to strong/active (e.g., "I would kill myself if I could"). Step three suggests that strong suicide ideation progresses to action when one has the capability to make a suicide attempt (whether lethal or non-lethal). Klonsky and May (13) stress that all factors that traditionally have been identified as risk factors for suicide remain relevant, but in a specific way, through their effects on pain, hopelessness, and/or connectedness.

Our qualitative study results give ample indication that the 3ST would be a useful framework for understanding suicide in a refugee setting. In addition, it could guide follow-up research, on specific factors (like those presented here) for explaining the trajectory from suicidal ideation to action, and contribute to effective prevention and intervention strategies in refugee camps in Rwanda. We suggest that follow-up research should take a mixed method approach with a larger study sample than presented here.

The life stories of refugees collected by sociotherapy program staff working in the Rwandan camps, our results presented here, and the pre- and post-intervention surveys of participants in sociotherapy groups (graduates) support the relevance of the 3ST to explore the development of suicidal ideations in refugee camps and progression to suicidal action. Sociotherapy staff and sociotherapists in the two camps explored in this study were asked to write the life history of a sociotherapy graduate who they considered to have a most significant change due to their participation in a sociotherapy group. The exercise resulted in 20 stories. In three of the seven stories selected by a committee for publication, suicide was featured (19). These stories are presented here in summary:

> Rose, (54 years old), whose husband and three children were killed in 1995 in the war in Congo presented with a history of multiple displacements and had reached the point that she decided to commit suicide by taking rat poison. Her only son, born in 2001, noticed that something was wrong and informed his mother's best friend. That friend convinced Rose to not go forward with her plan for the sake of her son's future. However, Rose's thoughts about committing suicide remained. Later, participation in sociotherapy diminished Rose's pain, gave her hope for the future, and connected her to people with whom she could share her pain and daily life challenges.
>
> Mbabazi, (31 years old), also had a traumatic history. She had tried to torture herself to death by starvation over two months, but to no avail. Once in the camp she isolated herself completely. One day, discovering she was pregnant by a man she was not married to, she got up early in the morning and went to the river with the intention to throw herself in. However, the thought of her children being left without someone to care for them made her struggle with her decision and finally return home. Mbabazi's participation in sociotherapy empowered her desire to care for her children again, removed her self-blame and allowed her to socialize with others again.

> Pierre, (35 years old), attempted to commit suicide while hospitalized for serious wounds incurred during the war in Congo by taking an overdose of medicines he had been prescribed. Due to his mother's interference, he was given an antidote and he survived against his will. While in the camp, life meant nothing for Pierre. His wife had left him and took his children with her. He was without hope and afraid of other people. He detested himself and had no self-confidence. Sociotherapy eventually gave him peace of mind again and friends with whom to socialize.

All three stories confirm the hypothesis of the 3ST that pain, hopelessness and a loss of connectedness combined with the capability to commit suicide (having a bednet, rat poison, medicine at hand or a river nearby) are a potentially lethal combination. Both Rose and Mbabazi had strong suicidal ideation, but, their connectedness with others made them decide not to attempt suicide. Pierre, feeling completely isolated, did make the step to attempt suicide, since he had the capability to do so. All three stories also confirm that if one has hope that the pain can be diminished with time or effort and connectedness with others has been restored, one's focus will be on achieving a better future rather than suicide. By participating in sociotherapy, where they first started to experience connection with others and being taken care of by these others, the three protagonists in the stories experienced a mitigation of their pain and restoration of hope for the future again. Positive changes from participating in sociotherapy were reported during the quantitative study mentioned earlier in this article. These changes were mainly related to the respondents' psychological health, grading of their quality of life, hope for the future, coping mechanisms, and perceived social support. These outcomes justify the relevance of psychosocial programs in general in Rwandan refugee camps. The quantitative study conducted among sociotherapy participants, which found that 9% of the 98 participants enrolled in the pre-intervention survey reported suicidal ideations, supports this justification. On the one hand, this relatively high percentage can be explained by considering sociotherapy participants as a kind of clinical population with more problems than most camp refugees. On the other hand, the camp population receiving sociotherapy is relatively small (about 300 participants). It is likely that given the need expressed by refugees and stakeholders for more sociotherapy in the camps that many more refugees share the same problems as the sociotherapy participants. This likelihood is confirmed by Bell et al. (20) who found that approximately 8% of a sample of 810 women living in a camp for Congolese refugees in Rwanda (names of the camps not mentioned), who participated in a study in which a brief screening tool (SRQ-5) for women's health assessment was tested, reported suicidal thoughts in the four weeks prior to taking the survey.

Suicides are preventable if a range of measures are taken at a population, sub-population and individual level as indicated in stories above. For effective suicide prevention, one needs to know the risk factors that contribute to thoughts of suicide (suicidal ideation), attempted suicide and actual suicide (1). In the same framework, a findings dissemination meeting (with community members, camp managers and stakeholders) organized at the end of our study recommended to design an implementation plan including regular sensitization campaigns against suicide and targeting the locally and culturally known "mountains of sorrow" that camp inhabitants experience with interventions that promote the psychosocial wellbeing of all refugees, especially men. In addition, the stakeholders proposed that gender equality across both camps should be carefully explained while being promoted to prevent misunderstandings and/or misconceptions as well as revisiting the system of rewarding those who report gender-based violence to ensure that the system is not negatively perceived by some refugee community members. Moreover, consideration of the community's feedback on program designs, exploration of the legal aspects of suicide in Rwanda, improvement of the referral system for suicide cases and the expansion of the psychosocial programs already in place in the camps (i.e., sociotherapy) were strongly recommended. Since the problem of suicidal ideation and attempts came to light between January and June 2018, organizational collaboration and sensitization meetings were conducted to raise awareness of the impact of suicide. Community members discussed suicide, made decisions, and explored preventive strategies. They also discussed their experiences with the negative impact of suicide on families. As of November 2018, when this study's findings were disseminated, no further suicide attempts or deaths have been observed in either Rwandan refugee camp.

CONCLUSION

Our research showed that a haunting painful past that severely affects the psychosocial wellbeing of refugees, coupled with daily life challenges (family conflicts, misunderstanding of gender equality, unwanted pregnancies, poverty, etc.), increases lack of hope for the future and a sense of isolation, and is a risk factor for developing suicidal ideations, attempts and actions. Community support mechanisms available to address issues identified by respondents were highlighted. However, some of the support systems in the camps were found not always culturally sensitive, hence the need for adaptation to the local context. While the research has provided some recommendations on how to mitigate the incidences of suicidal attempts and actions, an additional quantitative study is suggested to determine the magnitude of suicidal ideations in both refugee camps.

DATA AVAILABILITY STATEMENT

Due to ethical considerations, datasets cannot be shared with third parties. Requests to access the datasets should be directed to the corresponding author.

AUTHOR CONTRIBUTIONS

CI participated in the conception and design of research, field activities and data analysis and wrote the research report. CI and

AR converted the research report into an article. Both authors have approved the final manuscript.

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REFERENCES

1. World Health Organization (WHO). *Factsheet on suicide*. World Health Organization (2018). Retrieved from http://www.who.int/news-room/fact-sheets/detail/suicide Accessed on 20 April 2019.
2. Aoe T, Shetty S, Sivill T, Blanton C, Ellis H, Geltman PL, et al. Suicidal ideation and mental health of Bhutanese refugees in the United States. *J Immigr Minor Health* (2016) 18(4):828–35. doi: 10.1007/s10903-015-0325-7
3. Cohen J. Safe in our hands?: A study of suicide and self-harm in asylum seekers. *J Forensic Leg Med* (2008) 15(4):235–44. doi: 10.1016/j.jflm.2007.11.001:50-1
4. Hollander AC, Kirkbride ,JB, Pitman ,A, Lundberg M, Lewis G, Magnusson C, et al. Are refugees at increased risk of suicide compared with non-refugee migrants and the host population. *Eur J Public Health* (2017) 27(3):50–1. doi: 10.1093/eurpub/ckx187.129
5. Refugee Health Technical Assistance Center. *Suicide*. (2011). Retrieved from https://refugeehealthta.org/physical-mental-health/mental-health/suicide/ Accessed on 20 April 2019.
6. Voelker R. (ed.) Suicide awareness needed for Bhutanese refugees in the United States. *JAMA* (2013) 28(310):789. News from the Centers for Disease Control and Prevention Section. doi: 10.1001/jama.2013.194707
7. Wasserman D. Suicide risk in refugees and asylum seekers. *Eur Psychiatry* (2017) 41(Supplement):S35–6. doi: 10.1016/j.eurpsy.2017.01.167
8. Jankovic J, Bremner S, Bogic M, Lecic-Tosevski D, Ajdukovic D, Franciskovic T. Trauma and suicidality in war affected communities. *Eur Psychiatry* (2013) 28(8):514–20. doi: 10.1016/j.eurpsy.2012.06.001
9. International Organization for Migration (IOM). *Assessment of suicide risks and factors in a refugee camp in Thailand*. (2017). Retrieved from https://progressivevoicemyanmar.org/wp-content/uploads/2017/06/IOM-Mission-in-Thailand-Assessment-of-Suicide-Risks-and-Factors-in-a-Refugee-Camp-in-Thailand.pdf Accessed on 20 April 2019.
10. Mars B, Burrows S, Hjelmeland H, Gunnell D. Suicidal behaviour across the African continent: a review of the literature. *BMC Public Health* (2014) 14:606. doi: 10.1186/1471-2458-14-606
11. United High Commissioner for Refugees (UNHCR) Rwanda. *Monthly Factsheet*. United High Commissioner for Refugees (2018). Retrieved from https://www.unhcr.org/rw/wp-content/uploads/sites/4/2019/01/November-2018-Operational-Update.pdf Accessed on 20 April 2019.
12. Van Orden KA, Witte TK, Cukrowicz KC, Braithwaite ZD, Selby EA, Joiner TE. The interpersonal theory of suicide. *Psychol Rev* (2010) 117(2):575–600. doi: 10.1037/a0018697
13. Klonsky ED, May AM. The three-step theory (3ST): A new theory of suicide rooted in the "ideation-to-action" framework. *Int J Cognit Ther* (2015) 8(2):114–29. doi: 10.1521/ijct.2015.8.2.114
14. Richters A, Rutayisire T, Dekker C. Care as a turning point in sociotherapy: Remaking the moral world in post-genocide Rwanda. *Medische Antropologie: Tijdschrift over Gezondheid en Cultuur*. (2010) 22(1):93–108. Retrieved from http://tma.socsci.uva.nl/22_1/richters.pdf.
15. Ingabire MC, Kagoyire G, Karangwa D, Ingabire N, Habarugira N, Jansen A, et al. Trauma informed restorative justice through community-based sociotherapy in Rwanda. *Intervention: J Ment Health Psychosoc Support Conflict Affected Areas* (2017) 15(3):241–53. doi: 10.1097/WTF.0000000000000163
16. Ministry of Gender and Family Promotion. *National Gender Policy*. (2010). Retrieved from https://migeprof.gov.rw/fileadmin/_migrated/content_uploads/National_Gender_Policy-2.pdf.
17. Akinyemi A. (2019). 'No sex without fighting' - tackling toxic masculinity in DR Congo. Retrieved from https://www.bbc.com/news/world-africa-48094438.
18. Joiner TE. *Why people die by suicide*. Cambridge, MA: Harvard University Press (2005).
19. Sewimfura T, Ngabonziza B, Mukimbili N, Richters A. Booklet on the Camp-based Sociotherapy. (2019).
20. Bell SA, Lori J, Redman R, Seng J. Psychometric Validation and Comparison of the Self-Reporting Questionnaire-20 and Self-Reporting Questionnaire-Suicidal Ideation and Behavior Among Congolese Refugee Women. *J Nurs Meas* (2015) 23(3):393–408. doi: 10.1891/1061-3749.23.3.393

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To Increase Mental Health Literacy and Human Rights Among New-Coming, Low-Educated Mothers With Experience of War: A Culturally, Tailor-Made Group Health Promotion Intervention With Participatory Methodology Addressing Indirectly the Children

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Due to the increasing numbers of newcomers with impacts of war, civil war and persecution, at high risk of trauma-related mental health problems, there is a need for increase the poor mental health literacy (MHL) and human rights among the new-comers, especially low-educated mothers with children. This article aimed to present a case study report of several years' experience of tailor-made group health promotion intervention. It describes as an example, a project during autumn 2018 in five municipalities of Sweden and in collaboration between academia, primary care, social welfare, police, and an NGO. Fifty-one women, Arabic- or Somalian speaking, with 1–7 children, mean age 40 years, low-educated and in average four years' of living in Sweden participated. Under supervision, a local female member of the NGO coordinated the group meetings in Swedish with up to ten participants and the moderators were representatives of healthcare, social services and police/lawyer, with an interpreter present. Each intervention focused on human rights, health including mental health, psychosocial and parenting support, by using a 5-week group intervention a 2 h/week, totally 10 h excluding pre- and post-evaluation, and one language per intervention. Each meeting included 1-h lecture and after a short break with refreshments, the participants asked questions to the respective moderator. It was a mixed method but emphasis on qualitative design and participatory methodology with co-creation and evaluation of the intervention. The results showed that this tailor-made group intervention gave the participants empowerment and a sense of coherence, MHL and tools to deal with stress/anxiety, based on their needs that were mapped before in a pilot study during Spring 2018, indirectly addressing their children. However, they did not primarily talk about mental illness experience. It is vital that these interventions toward the target group with limited exposure to Western concepts

(e.g., illness, anxiety, and trauma), may bridge the gap between Western and traditional cultural understanding of pre- and postmigration stress. In conclusion, MHL may be a function of both the cultural origin of the target group's background and their resettlement in a Western reception country. Implications are discussed.

Keywords: trauma, literacy, refugee, women—health and hygiene, low-education households, intervention and evaluation

INTRODUCTION

The Lancet Commissions (1) considers that migration is a global reality but most refugees and other migrants are kept in settings where resources and skills among their needs of mental health care are lacking. During 2015–16, European countries (particularly Sweden and Germany) received the largest inflow of refugees since WWII, with over a million Syrians and others from the Middle East entering the region. As a result of a new law in Sweden, the influx then halted, "indicating the lack of preparedness of even advanced nations to deal with this humanitarian crisis" (2, page 139).

According to World Health Organization Regional Office for Europe's first report (3), nearly 1 in 10 in the WHO European Region with 53 Member States is currently an international migrant. Further, a major reason for people to migrant besides war, civil war and persecution, natural disasters and human rights abuses are to survive by finding job. Migration and displacement are social determinants of disturbing the health of refugees and other migrants. The refugee crisis has in a quick reaction among authorities normalized a view of naïve thinking and labeling of "us" versus "them" with "ethical dimensions for people to contend with as human beings and as professionals" (4, page 18).

There is evidence that war trauma influence parenting behavior and women have a two to three times higher risk of developing post-traumatic stress disorder (PTSD) compared to men. Both psychosocial and biological reasons (oxytocin related) have been discussed (5). There is less evidence on how other forms of psychological distress (e.g., depression, anxiety, and pain) stemming from pre-and postmigration stressors as well as acculturation problems may influence parenting behavior on child psychosocial outcomes (6). A qualitative study of healthcare workers' perceptions on parental health knowledge and child health effects among Southeast Asian American immigrants and refugees explored the following broad themes: complexity of parental health knowledge; experience from the respective home country and parent characteristics; the influence of the reception country system; help-seeking behavior from a culture point of view; and health symptoms on children (7). An interview study on the experiences of 17 Sudanese refugee women raising their teenagers in Australia, four main issues caught their main worries; such as the shift from child raising in an interdependent society as part of a network of family and community affairs (it takes a whole village to rear the child) to nurturing alone in the reception country context, mothers' insecurity and practices of dropping their children, both literally and symbolically, defeat of parental authority, and the habits in mothers adjusted to the postmigration context and found new meaning of parenting (8). Evidence suggests that reduced mental health literacy (MHL) may be a noteworthy element influencing help-seeking behavior among refugees and other migrants with mental health problems. Yaser, Slewa-Younan, Smith, Olsson, Guajardo, and Mond (9) performed an interview study regarding problem acknowledgement and views about the benefit of activities, treatments, and treatment workers relating to a vignette as PTSD in a group of Australian based resettled Afghan refugees. It showed that approximately one-third of the participants recognized the difficulties called as PTSD but participants with less education were more in common to do it in that way, and little more than one-fourth assumed that the main problem was to be insecure. In order to overcome this problem, 18% of participants thought that to start a hobby or going out followed by better diet, improving exercise would be self-medicine. In addition, participants with less school education and older participants were more possibly to think that praying would improve their health.

In a systematic review, risk, and preventive factors related with family linked violence in refugee families show that premigration stress (trauma before arrival in a reception country) and postmigration stress factors have consequences at both an individual and a family level (10). Groen, Richters, Laban, van Busschbach, and Devillé (11) presented similar findings in a mixed-methods design study among refugees and asylum seekers in Netherlands that in addition, acculturation difficulties also contribute to misunderstanding of cultural identity. By reduction of these stress and problem factors, may elucidate cultural identity which may contribute to posttraumatic recovery.

A systematic review of supposed barriers and facilitators of mental health care utilization in adult trauma survivors shows that barriers were linked to stigma, embarrassment and rejection, low mental health competence, absence of awareness, and treatment-related doubts, distress of negative social consequences, limited resources, time, and costs (12). An epidemiological study from Santavirta, Santavirta, and Gillman (13) on the risk of mental inward among children of adults who were displaced as child refugees to Sweden from Finland during WWII support evidence regarding intergenerational associations of war-related experiences with mental health that may continue across generations. The Finnish research team noted that women of mothers who were evacuated to Sweden as a child had a raised risk for psychiatric hospitalization. Bowlby (14) described emotional attachment as a durable psychological connectedness between

social beings and attachment is first created between the infant and its primary caregiver (primarily mother). If the parent is absent bodily and/or mentally, the child may develop a sense of insecurity and the age level have impact on this effect. Additionally, evidence indicates that specific cultural aspects affect the meaning and interpretation of child-rearing conditions, e.g., the meaning of the extended family in child-rearing, demanding child-rearing methods, the within-society heterogeneity, and the stability of a national level (15).

The Adaptation and Development After Persecution and Trauma (ADAPT) model has been developed by Silove (16) and recognizes five main psychosocial posts which may be disordered by conflict, separation and displacement, i.e., systems of safety and security, interpersonal bonds and networks, justice, roles and identities and existential meaning and coherence. These posts are stable in societies with peace. To perceive social exclusion as young may be a challenge to be engaged in extremist groups. Obaidi, Bergh, Akrami, and Anjum (17) reviewed studies in the topic and found that Western-born Muslims and raised in Western countries in comparison with foreign-born Muslims recorded higher on all examined judges of extremism. Daily stressors, such as social determinants (discrimination and poverty) in low resource refugee reception contexts also increase the risk of illness among the newcomers.

A systematic review showed that psychological treatment (CBT) for trauma can be effective on asylum seekers and refugees in the reception countries (18). Several international professional network organizations are in the process of evolving different solutions proposing psychosocial support to risk persons in need (19). In our increasing globalizing world, health care workers and stakeholders are more and more meeting new-coming refugees and other migrants and perceive cross-cultural challenges in which increase ethical questions such as "How to do the proper thing." A theoretical model of more tailored solutions centered on individuals' needs and situations can be established in collaboration with these target groups. Such a co-creation and evaluation of public health interventions show to be promising (20) but needs further study.

Torture survivors have rights to rehabilitation but the present research do not yet have a comprehensive view for the torture survivor experience (21, 22). World Health Organization Regional Office for Europe published in 2018 a technical guidance for health promotion for enhanced refugee and other migrant health that "as for all people, refugees and migrants have the fundamental right to enjoy the highest attainable standard of health…." health promotion is the process of enabling people to gain more control over, and improve, their own health and well-being, and that of their families and communities" (23, page vi). Therefore, refugee flows in the world present great challenges for how care needs should be met in the reception country. Paying attention to prevention, support, treatment, and long-term rehabilitation needs an interdisciplinary approach between healthcare, legal, and other experts (24).

For interventions to disrupt the transgenerational effect of adversity and war-related trauma, it is of significance to ask about the needs of newcomers in order to perceive security and health including mental health (20). To fill the gap in the literature, this article aimed to present a case study report of several years' experience of tailor-made group health promotion intervention toward new-coming low-educated mothers with children. The question asked was how the participants in a tailor-made group intervention perceived their MHL before and direct after?

The Case: Lessons learned

During the last ten years, in small-scaled projects, culturally tailored participatory health promotion group intervention toward new-coming mainly Arabic, Dari, and Somali-speaking women with war experiences have been performed. The aim has been to assess their health, with a mixed methods design before and after the group meetings with promising results and has been described in detail (25–29) and will therefore be presented briefly here. The ADAPT framework (16) and co-creation (20) have been used as a conceptual framework for formulating and implanting the intervention for new-coming mothers with low education and health literacy war experiences. The different projects due to funding have all been approved by regional ethical committees. Activity yearly grants was approved from autumn 2017 by the Public Health Agency to NGOs working with prevention mental illness among children in migration. A collaboration was set up with 1.6miljonerklubben[1] and the author has collaborated before in an EU funding project (28).

The present project included needs-driven health literacy and human rights promotion interventions to new-coming mothers with children coming from war areas. During autumn 2018, the intervention was designed by collaboration between academy (author), primary care, social welfare, and police/lawyer and the same NGO. By supervision from the author, a local contact woman from the NGO coordinated the interventions, by inviting the women and moderators (social assistant officer, police/lawyer, midwife, psychologist, and nutrionist/physiotherapist). Prior to the intervention, focus group discussions with immigrant women who had been living in Sweden for a long period and interviews with clinicians who meet these women have been performed as a pilot study in order to gather data on the prerequisites and level of health literacy and to tailor-made the group intervention. The language was Swedish with an interpreter in the room and one language at a time. The pedagogical method was a participatory methodological approach (20) according to the topic (**Box 1**). Ten to fourteen women were called to participate in a dialog with the respective moderator. In the middle of the sitting, there was a pause for some complementary refreshments. Each group sitting comprised five occasions of 2-h per occasion, a total of 10 h excluding 1 h before and after for oral and verbal information, verbal consent and evaluation, respectively. It was closed with the reason to develop trust in the sitting. The sitting had eight basic principles. 1) The interpreter has a duty of secrecy and translates everything that is said in the room. 2) Everything that is said in the room stays in the room. 3) The mobile phone is switched off.

[1] www.1.6miljonerklubben.com

4) The concentration on the here and now and feeling mentally good. 5) Religion and politics as well as economy and housing can be discussed in other contexts. 6) For questions and comments, the hand is raised. 7) It's a closed group—no one comes and goes. 8) No information is given to authorities. (Privacy is the main rule, but there are several exceptions such as reporting and reporting obligations by Swedish law for the moderators).

It was found in the pilot study in Spring 2018 that women with low or no education were unable to answer the five questions in EQ-5D[2] but to keep the Likert scale of perceived health, 0–100. The central question before and after the group meetings was not mental health/illness and suicide prevention, but about anxiety/stress with three response options (none, to a certain extent and to a great extent) with subsequent questions with open response options. Before: If you feel anxiety/stress, what do you feel is the cause of your anxiety/stress? If you feel anxiety/stress, what do you usually do to feel better? After: If you feel anxiety/stress, what do you experience after the group intervention are the cause of your anxiety/stress? What knowledge and tools have you gained during the group meetings to feel less anxiety/stress and feel better?

BOX 1 | Description of intervention by themes with different moderators working locally (can be in different order locally)

The intervention comprises a 2-h sitting/week for 5 weeks, totally 10 h excluding 1-h information and consent and 1-h evaluation on the following topics:

Theme 1. Women and human rights issue (police/lawyer)

Theme 2. Children and family (social assistant officer)

Theme 3. Women's body, health and health care organization (midwife)

Theme 4. Mental health, stress and recovery (licensed psychologist)

Theme 5. Health promotion, e.g., diet, exercise and wellness (nutrionist/ physiotherapist)

Main Concern Was That They Felt Stress and Fear About the Future

Fifty-one women, Arabic- or Somalian speaking, with 1–7 children, mean age 40 years, low- or no education from home country and in average four years' of living in Sweden participated during autumn 2018. Fifty-six percent of women replied that before the group intervention they experienced to some extent or to a great extent anxiety/stress and afterward the figure was 42%. On the Likert scale (0–100), the women felt that they averaged on perceived health 52 before the group intervention, while the figure after had been increased to an average of 68, which was a significant improvement ($p < .001$). They got useful tools to deal with stress/anxiety based on their needs that were mapped before. For instance, before the group intervention, they felt insecure and stress about future for their children and rest of the family. They were interested to know about the children's activities at school. Illustrations of questions from participants related to different themes and were like an earlier study (**Table 1**). After the intervention they felt more comfortable to talk with their children, and they learnt that they can say "no" to the child. Before the intervention, they were anxious that the social welfare would take the child because a bruise which they thought would be interpreted as they beat the child which is forbidden according to law in Sweden.

Implications

The experience of these tailor-made interventions highlights two main findings: the first finding was that women felt empowered by receiving facts from police, social assistant officer, and health care workers and the intervention inspired them to change their lifestyle to healthier one for the whole family including the children and increased the trust to authorities. Gender-separate groups may enable facts uptake, while dialogue regarding sexual health norms may have advantage from performing in assorted groups (30). They became ambassadors of a preventive perspective as training their children at a primary age about healthy living behaviors increases the odds of keeping these customs in grownups life which may have a constructive influence on public health in general. The second finding was that the women expressed a wish to continue the learning process, were more interested in learning Swedish, and confident of take care of their own health. It was not clear for them before the intervention that they own their own body. A study showed that a substantial amount of the refugees in Sweden have incomplete comprehensive health literacy and account less than good health and impaired well-being, or that they have avoided doing from seeking health care (31). Therefore, such preventive intervention is of significance which may also increase social inclusion and integration.

The UN Agenda for Sustainable Development 2030 (32) offers a global plan for dignity, peace and wealth for people and the planet, now and in the future. There is a risk that the goals will not be reached if the contemporary refugee crisis persist and increase. Priebe, Sandu, Dias, Gaddini, Greacen,

TABLE 1 | Illustrations of questions from participants related to the different themes (27).

Theme	Question
Swedish health-care system	If I do not speak Swedish well enough, how do I go about calling the healthcare center for an appointment?
Health eating habits	Can I develop cancer from not eating healthy?
Dental care	Can my gums disappear if they are bleeding while I brush my teeth?
Physical activity	How can the physiotherapist help to ease my pain?
Stress	Can mental illness affect my memory?
Female anatomy	If I am only allowed to wash my vagina once a day, how do I go about it when I need to pray? I must be clean then!
Social service support for parents and children	When does the social service place children in foster care?
Domestic violence	For how long a person is detained for domestic violence?

[2] http://euroqol.org

Ioannidis et al.'s (33) study of good practice closed that "Service delivery should be achieved by dispensing care on an individual basis, considering personal need, rather than focusing on group stereotypes and customary nations that migrants need may differ greatly from indigenous patients" (page 196). In sum:

- Systematically identify the new-coming women's situation, needs, risk factors
- Increase awareness of health care providers regarding and how they can affect
- Address socioeconomic barriers such as social determinants of health (poor living conditions, low educated and unemployment, as well as associated stress, to reduce negative impacts on their children and other family members)
- Promote improvement of health literacy levels, engaging all relevant stakeholders, before the new-coming women are identified as patients
- Promote social inclusion and integration.

Conclusion

MHL, culturally tailor-made group interventions would pay attention to human rights, women's health, psychosocial and childrearing for war-affected parents, especially mothers with low or no education, by using a participatory methodology, such as co-creation and evaluation of public health interventions (20). Further, it is vital that these interventions toward newcomers with low MHL and with limited exposure to Western concepts (e.g., illness, anxiety, and trauma), may bridge the gap between Western and traditional cultural understanding of pre- and postmigration stress, which addressing indirectly the children.

It is also time to reflect on our current reception paradigms in meeting the needs of new-coming refugees and other migrants and how we may react to a worsening worldwide emergency for which present methods in the literature are not enough to reach the large numbers of new-comers in need. A "smörgåsbord" of comprehensive health promotion and intervention approaches with interpersonal and intercultural training of staff may facilitate social inclusion and integration of the target group.

DATA AVAILABILITY STATEMENT

The original contributions presented in the study are included in the article/supplementary material, further inquiries can be directed to the corresponding author.

ETHICS STATEMENT

The studies involving human participants were reviewed and approved by Regionala etikprövningsnämnden Stockholm 2018/224-31/5. The participants provided their written informed consent to participate in this study.

AUTHOR CONTRIBUTIONS

The author confirms being the sole contributor of this work and has approved it for publication.

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REFERENCES

1. The Lancet Commissions. *The UCL-Lancet Commission on Migration and Health: the health of a world on the move*. www.thelancet.com, online December 5, 2018. (2018) 392(10164):2606–54. doi: 10.1016/S0140-6736(18)32114-7.
2. Silove D, Ventevogel P and Rees S. The contemporary refugee crisis: an overview of mental health challenges. *World Psychiatry* (2017) 16:130–9. doi: 10.1002/wps.20438
3. World Health Organization. *Report on the health of refugees and migrants in the WHO European Region: no public health without refugee and migrant health*. Copenhagen, Denmark: Regional Office for Europe (Copenhagen): WHO (2018). http://www.euro.who.int/en/publications/abstracts/report-on-the-health-of-refugees-and-migrants-in-the-who-european-region-no-public-health-without-refugee-and-migrant-health-2018.
4. Krausz RM, Choice F. Psychiatry"s response to mass traumatisation and the global refugee crisis. *Lancet Psychiatry* (2017) 4(1):18–20. doi: 10.1016/S2215-0366(16)30413-8
5. Christiansen DM, Hansen M. Accounting for sex differences in PTSD: a multi-variable mediation model. *Eur J Psychotraumatol* (2015) 6:26068. doi: 10.3402/ejpt.v6.26068.
6. Sim A, Bowes L, Garner F. Modeling the effects of war exposure and daily stressors on maternal mental health, parenting and child psychosocial adjustment; a cross-sectional study with Syrian refugees in Lebanon. *Global Ment Health* (2018) 5:1–12:e40. doi: 10.1017/gmh.2018.33
7. Khuu BP, Lee HY, Zhou AQ, Shin J, Lee RM. Healthcare providers' perspectives on parental health literacy and child health outcomes among Southeast Asian American immigrants and refugees. *Children Youth Serv Rev* (2016) 67:220–9. doi: 10.1016/j.childyouth.2016.06.006
8. Levi M. Mothering in transition: The experiences of Sudanese refugee women raising teenagers in Australia. *Transcult Psychiatry* (2014) 51:479. doi: 10.1177/1363461514531315
9. Yaser A, Slewa-Younan S, Smith CA, Olson RE, Guajardo MGU, Mond J. Beliefs and knowledge about post-traumatic stress disorder amongst resettled Afghan refugees in Australia. *Int J Ment Health Syst* (2016) 10:31. doi: 10.1186/s13033-016-0065-7
10. Timshel I, Montgomery E, Thorup Dalgaard N. A systematic review of risk and protective factors associated with family related violence in refugee families. *Child Abuse Negl* (2017) 70:315–30. doi: 10.1016/j.chiabu.2017.06.023
11. Groen SPN, Richters AJM, Laban CJ, van Busschbach JT, Devillé WLJM. Cultural identity confusion and psychopathology. A mixed-methods study among refugees and asylum seekers in the Netherlands. *J Nerv Ment Dis* (2019) 207(3):162–70. doi: 10.1097/NMD.0000000000000935
12. Kantor V, Knefel M, Lueger-Schuster B. Perceived barriers and facilitators of mental health service utilization in adult trauma survivors: a systematic review. *Clin Psychol Rev* (2017) 52:52–68. doi: 10.1016/j.cpr.2016.12.001

13. Santavirta T, Santavirta N, Gillman SE. Association of the World War II Finnish evacuation with psychiatric hospitalization in the next generation of children. *JAMA Psychiatry* (2017) 75(1):21–7. doi: 10.1001/jamapsychiatry.2017.3511
14. Bowlby J. Attachment and loss. Loss, sadness and depression. *J Biosoc Sci* (1981) 13(03):1–355. doi: 10.1017/S0021932000013596
15. Zevulun D, Kalverboer ME, Zijlstra AE, Post WJ, Knorth EJ. Returned migrant children in Kosovo and Albania: assessing the quality of child-rearing from a non-western perspective. *Cross-Cult Res* (2015) 49(5):489–521. doi: 10.1177/1069397115608173
16. Silove D. The psychosocial effects of torture, mass human rights violations, and refugee trauma: toward an integrated conceptual framework. *J Nerv Ment Dis* (1999) 187(4):200–7. doi: 10.1097/00005053-199904000-00002
17. Obaidi M, Bergh R, Akrami N, Anjum G. Group-based relative deprivation explains endorsement of extremism among Western-born Muslims. *Psychol Sci* (2019) 30(4):596–605. doi: 10.1177/0956797619834879
18. Nose M, Ballette F, Boghelli I, Turrini G, Purgato M, Tol W, et al. Psychosocial interventions for post-traumatic stress disorder in refugees and asylum seekers resettled in high-income countries: a systematic review and meta-analyis. *PloS One* (2017) 12(2):e0171030. doi: 10.1371/journal.pone.0171030
19. Murray KE, Davidson GR, Schweitzer RD. Review of refugee mental health interventions following resettlement: best practices and recommendations. *Am J Orthopsychiat* (2010) 80:576–85. doi: 10.1111/j.1939-0025.2010.01062.x
20. Leask CF, Sandlund M, Skelton DA, Altenburg TM, Cardon G, Chinapaw MJM, et al. Framework, principles and recommendations for utilising participatory methodologies in the co-creation and evaluation of public health interventions. *Res Involvement Engagem* (2019) 5:2. doi: 10.1186/s40900-018-0136-9
21. Sjölund BH, Kastrup M, Montgomery E, Persson AL. Rehabilitating torture survivors. *J Rehabil Med* (2009) 41:689–96. doi: 10.2340/16501977-0426
22. Liddell BJ, Nickerson A, Bryant RA. Clinical science and torture survivors" rights to rehabilitation. *Lancet Psychiatry* (2018) 5(2):P101–3. doi: 10.1016/S2215-0366(17)30332-2
23. World Health Organization. *Health promotion for improved refugee and migrant health. Technical guidance*. Regional Office for Europe (Copenhagen): WHO (2018). http://www.euro.who.int/:data/assets/pdf_file/0004/388363/tc-health-promotion-eng.pdf?ua=1.
24. Wenzel TH, Ekblad S, Kastrup M, Musisi S. Torture and sequels to persecution – a global challenge. In: Javed A. Fountoulakis KN, editors. *Advances in Psychiatry* Chan, Switzerland: Springer International Publishing AG and World Psychiatric Association (2018) p. 405–24. doi: 10.1007/978-3-319-70554-5_25
25. Ekblad S. Behovsstyrda cirkelträffar i grupp för nyanlända kvinnor med barn minskar upplevd oro/stress om framtiden. En kvalitetssäkring på fem orter (Need-driven group meetings for newly arrived women with children reduce experienced worries / stress about the future. A quality assurance in five locations). *Social Medicinsk Tidskr* (2019) 96(1):85–94.
26. Ekblad S, Asplund M. Culture- and evidence-based health promotion group education perceived by new-coming adult Arabic-speaking male and female refugees to Sweden - pre and two post assessments. *Open J Prevent Med* (2013) 3:12–21. doi: 10.4236/ojpm.2013.31002
27. Ekblad S, Hjerpe A, Lunding H. Tailor-made group training by clinical staff to empower equity in health towards newly arriving Arabic- and Somali speaking women in Sweden. *Public Health Panor: Topic Migr Health Eur Region J WHO Reg Off Eur* (2016) 2(4):466–76.
28. Ekblad S, Persson-Valenzuela U-B. Lifestyle course is an investment in perceived improved health among newly arrived women from countries outside Europe. *Int J Environ Res Public Health* (2014) 11:10622–40. doi: 10.3390/ijerph111010622
29. Eriksson-Sjöö T, Cederberg M, Östman M, Ekblad S. Quality of life and health promotion intervention – a follow up study among Newly-arrived Arabic Speaking Refugees in Malmö, Sweden. *Int J Migr Health Soc Care* (2012) 8:112–26. doi: 10.1108/17479891211267302
30. Svensson P, Carlzén K, Agardh A. Exposure to culturally sensitive sexual health information and impact on health literacy: a qualitative study among newly arrived refugee women in Sweden. *Cult Health Sex* (2017) 19(7):752–66. doi: 10.1080/13691058.2016.1259503.
31. Wångdahl J, Lytsy P, Mårtensson L, Westerling R. Poor health and refraining from seeking healthcare are associated with comprehensive health literacy among refugees: a Swedish cross-sectional study. *Int J Public Health* (2018) 63::409–19. doi: 10.1007/s00038-017-1074-2
32. The United Nations. *The Sustainable Development Goals Report*. New York: The United Nations (2018). https://unstats.un.org/sdgs/files/report/2018/TheSustainableDevelopmentGoalsReport2018-EN.pdf
33. Priebe S, Sandu S, Dias S, Gaddini A, Greacen T, Ioannidis E, et al. Good practice in health care for migrants: views and experiences of care professionals in 16 European countries. *BMC Public Health* (2011) 11::1987. doi: 10.1186/1471-2458-11-187

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