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Trauma, risk, and resilience: A qualitative study of mental health in post-conflict Liberia

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Abstract

The Liberian civil wars led to widespread destruction and devastation for its individuals, communities, and economy. However, individuals' subjective trauma experiences and long-term psychological impact remain relatively understudied. This study aims to explore context-specific traumatic events and examine how risk and protective factors combine with traumas to influence trajectories of suffering and recovery over time. We conducted 43 semi-structured interviews with Liberian adults who were present during the Liberian civil wars, and we used line-by-line open coding, thematic analysis, and axial coding to analyze and contextualize the data. Eight key trauma themes emerged: Abuse (emotional, physical, and sexual), Captivity, Combat, Killings, Physical Illness, Resource Loss, Family Separation, and War Environment. The risk and protective factors that were reported as salient were: Age, Biological Sex, Socioeconomic Status, and Community Support. Further, key patterns emerged across interviews that indicated greater risk for long-term suffering: 1) exposure to multiple traumatic events, 2) certain types of traumatic events (like killing of a close family member), and 3) the combination of specific traumatic events and risk and protective factors (like older women witnessing the killing of their children). This study provides culturally relevant information on trauma, suffering, and resilience in post-conflict Liberia, with the aim of guiding the development of screening tools and targeted psychological interventions that improve well-being over time.

Keywords

conflict, Liberia, mental health, qualitative, resilience, trauma

Introduction

The West-African country of Liberia experienced two civil wars (1989–1996 and 1999–2003), killing over 250,000 persons and displacing more than one million people, both internally and externally. This period was marked by widespread human rights violations, including murder, torture, sexual violence, forced labor, and the use of child soldiers, for which Liberians are still managing the psychological, physical, and emotional consequences (Borba et al., 2016; Galea et al., 2010; Johnson et al., 2008; Swiss et al., 1998; Vinck & Pham, 2013; World Health Organization, 2017). Despite the high demand for mental health care in Liberia, access remains scarce with services concentrated in urban areas, managed by non-governmental and faith-based organizations, and delivered by non-specialist workers with limited knowledge of mental health (Gwaikolo et al., 2017; Kruk et al., 2011). There is a need to reduce the mental health treatment gap in Liberia and aid the development of culturally relevant diagnoses and measurement tools by understanding the mental health symptoms and needs of the population. This study

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aims to explore local conceptualizations of mental health, especially psychological trauma due to the Liberian civil wars, as well as factors contributing to prolonged suffering or resilience.

Mental health in Liberia

Epidemiological studies from Liberia show high prevalence rates of mental disorders among adults 18 years or older; up to 40% for major depression and 44–48% for post-traumatic stress disorder (PTSD) (Galea et al., 2010; Johnson et al., 2008). This is four times higher than the age-standardized global pooled prevalence of 12.9% for PTSD and 7.6% for major depression among conflict-affected populations globally (Charlson et al., 2016). However, prevalence rates from the two Liberian studies were based on a geographically limited sample, using diagnostic criteria and measurement scales developed in Western contexts, and may be subject to response and recall bias, especially in relation to previous traumatic events. Studies on the mental health of persons affected by conflict have mostly employed quantitative measures developed in high-income countries, that may not accurately reflect the cultural norms of the particular population being studied (Hollifield et al., 2002; Myers, 2011; Sigvardsdotter et al., 2016). Kleinman critiqued that such approaches are prone to 'category fallacy,' whereby diagnostic categories for one cultural group are applied to members of other cultures, often erroneously assuming the universal validity of mental health constructs (Kleinman, 1987). Qualitative studies have revealed diverse traumatic experiences and distress symptoms across humanitarian contexts that are not captured by surveys with close-ended questions (Betancourt et al., 2015; Cherewick et al., 2016; Cook et al., 2015; Seguin et al., 2016). Ethnographic research from Liberia highlights unique cultural idioms for trauma, such as 'open mole' (described as a soft spot in the skull), emphasizing somatic expressions of distress that may be otherwise missed. This calls for a more 'emic' research approach that incorporates local concepts into frameworks for mental health (Creswell & Zhang, 2009; Fabian et al., 2018).

Moreover, not all individuals exposed to traumatic events go on to develop mental illness, and considerable research has focused on identifying protective factors that promote resilience, or positive adaptation in response to current and future adversities (Galatzer-Levy et al., 2018; Masten & Cicchetti, 2016; Wright et al., 2013). However, there is a dearth of qualitative research exploring war-related trauma among Liberian adults, and it is unclear what combination of risk and protective factors interact to influence long-term trajectories of trauma survivors in this setting. An in-depth understanding of these factors can help design culturally grounded promotive and preventive mental health interventions.

The present study

This study utilizes qualitative data from a larger study of mental health among adults in post-conflict Liberia. Our analyses seek to answer the following research questions:

1. What were the various traumatic experiences from the Liberian civil war described by study participants?
2. Which risk and protective factors are associated with the mental health of trauma survivors in Liberia?
3. Which traumatic war experiences, risk and protective factors, and combinations of these result in some Liberian civilians recovering over time versus others continuing to suffer?

Methods

Study setting and participants

The study was conducted in 2012 in Liberia's capital city, Monrovia. The site was chosen due to its diversity and population representativeness during the time of the study, resulting from the high rates of internal displacement to Monrovia after the war. The inclusion criteria for participants were a) males or females aged ≥25 years; b) Liberian English or English speakers; c) Liberian citizens who were either born and raised in Liberia or present in-country during the civil war; and d) able to provide written or verbal informed consent. This age range for participants was chosen so that only persons who were 18 years or older during the time of the war were included. Exclusion criteria for the study were: a) unable or unwilling to give informed consent; b) suicidal ideation or attempted suicide; and c) requiring urgent medical attention precluding them from participating. Sociodemographic information was collected from participants, including their age, sex, county, marital status, education, religion, language, income, employment, and household composition (data available upon request).

Sampling and recruitment

A combination of convenience and snowball sampling methods were used, asking participants to refer others who had also experienced the war to get in touch if interested in participating. Respondents were recruited from the local university in Monrovia until theoretical saturation was achieved, with a final sample size of 43 adults. Research assistants explained the purpose, scope, and procedures of the study to all potential participants, and that the interviews of roughly 60–90 minutes would be digitally recorded, and notes taken for accuracy.

Ethics and informed consent

The interviews were conducted in a private area in a local community clinic. Interviews were recorded with informed consent, and notes were taken by interviewers to ensure accuracy. Informed written and/or verbal consent was obtained from all participants, and the University of Liberia's Institutional Review Board and the Partners Human Research Committee approved all study procedures.

Semi-structured in-depth interviews

In-depth interviews were conducted using an interview guide that was developed based on the literature and after consultation with the sole Liberian psychiatrist. Topics introduced by the participant but relevant to the study were further probed by the interviewer. All interviewers received intensive training in qualitative methods and interviewing skills. Participants were first asked to think of someone still suffering as a result of the war, and subsequently, of someone who had recovered from what happened to them during the war. People were allowed to talk about someone they knew or themselves and were asked a series of questions regarding both the person who improved, and the person who continued to suffer. Participants were provided refreshments during the interview and a US$5 phone card for their time and participation.

Analysis

Interviews were conducted in Liberian English and transcribed verbatim, translated into English, and entered into QSR NVivo software version 11.4.2. Analysis of interviews involved two phases: 1) codebook development and open coding; and 2) thematic analysis and axial coding (Boyatzis, 1998; Braun & Clarke, 2006; Smith et al., 1992; Strauss & Corbin, 1990). Coding was carried out by at least two independent coders at any given time. Throughout the coding and analysis process, coders wrote detailed memos to record discrepancies, operationalize codes and themes, document the creation of new codes, and note insights about emerging findings. The use of multiple coders, comprehensive memos, and periodic meetings with the research team ensured quality control. Coders were also encouraged to question and discuss their subjective perspectives, biases, and assumptions, so that these could be adequately addressed.

Phase I: Codebook development and open coding. To address the first two research questions regarding traumatic war experiences and risk and protective factors associated with mental health, an initial codebook was developed using 25% of the interviews (11 interviews) that were randomly selected through blocks of five. Line-by-line coding was used by two independent coders and emerging codes were discussed, consolidated, and agreed upon. This process was used repeatedly for the initial and final coding, such that any disagreements regarding the codes were periodically discussed and resolved. Inter-coder reliability was calculated using kappa statistics after coding initial interviews, and once an overall kappa of 90% was achieved, the coding schemed was deemed acceptable to create the initial codebook. After developing this codebook, the independent coders split the remaining interviews (N = 32) amongst themselves and applied the coding scheme for open coding. Any discrepancies were discussed during weekly meetings and incorporated into the revised codebook, with a final inter-coder reliability (>90%) calculated at the end of coding.

Phase II: Thematic analysis. Thematic analysis was applied to group all codes into broader themes and uncover connections amongst them (Creswell & Zhang, 2009), guided by the third study research question: "Which war events, risk and protective factors, and combinations of these result in some Liberian civilians recovering over time versus others who continued to suffer?" We conceptualized *recovery* as mental, physical, and social functioning, and overall improvement from the previous state of suffering. We conceptualized *suffering* as continuing to experience the psychological impact of trauma from past war events, either to the same extent or worsening over time. Quotes and text related to this study question were tagged, and these extracts were organized into themes and analyzed to understand the context, setting, and causes of suffering versus recovery across traumatic war experiences.

Results

The interviews were completed by 43 adults; 18 females (42%), 22 males (51%); and three not reported (7%). The ages ranged from 25 to 64 years, with a mean age of 31.32 years (SD = 7.77 years). The majority of participants were single/unmarried (67%) and had completed at least high school (44%) or college (33%). Participants came from 13 counties in Liberia, with the largest percentage (33%) coming from Montserrado County.

War-related trauma

We adapted the DSM-IV-TR conceptualization of war-related trauma used by Cook et al. (2015, p. 5), as:

> direct personal experience of an event that involves actual or threatened death or serious injury, or other threat to one's physical integrity; or witnessing an event that involves death, injury, or threat to the physical integrity of another person; or learning about unexpected or violent

Table 1. Themes and codes for war-related experiences.

Themes	Sub-themes	Codes	Examples
Abuse	Sexual abuse	Rape	There's a lady who was raped by three men, three rebel fighters.
		Sexual assault	On 11th Street, because of this man, George Boley, yeah, he would harassing thing, like two times, they attempted grabbing me, so because of that, my, we have to move.
		Pregnancy due to rape	Yes they took her as wife for the commander and even had kid with her.
		Prostitution	As we speak, today they are in college but she's a sacrificial lamb, she sleeps on the street with elderly men for money.
	Emotional or psychological abuse	Forced cannibalism	So after they engaged in that cannibalism, certain time came he got mad.
		Ethnic discrimination	During the war we were running here and there finding rescue for my father because my father was a Krahn man and at that time they were hunting all the Krahn people to be killed.
		Humiliation	And then they told him to lay down on the ground and ask him to take off his slippers, take of his clothes and take you at the back.
		Violation of cultural beliefs	Some witch doctor from there maybe he just took certain thing that don't do this, if you do this, this is will happen. And he went and did it contrary so maybe that what will be his problem.
		Threat or fear	You were forced to give everything that you had to the rebels because they had arms and you will be under fear and they will take all your valuable items away from you.
	Physical abuse	Beatings	They used to beat him for insulting them.
		Forced manual labor	I was forced by rebels to tow arms and armor to battle front.
Captivity		Kidnapped or abducted	The rebels took her away because she was young
		Imprisoned or arrested	I was captured by Prince Johnson NPFL, was taken to the base of Prince Johnson which I was living at that particular time.
Combat		Former soldier	He participated in the war, that is he fought as one of the soldiers for Charles Taylor.
		Forced recruitment	They were recruiting as child soldiers.
		Forcibly drugged	Is the drugs given them that caused those things because usually when you are recruited they don't leave you normal and talk to you.
Killing		Friend or family killed	I know of a lady in my community who went mad because she said before her the rebels killed her children and her husband.

(continued)

Table 1. Continued

Themes	Sub-themes	Codes	Examples
		Homicide	And they killed a lot of them.
Physical ill-health		Illness or sickness	We all ran in the bush (wood) for refuge, and subsequently his mother got sick and died.
		Starvation	And another instance is the issue of starvation. While other people were there, people died from hunger.
Resource loss		Theft	During the war, some of the fighters [soldiers] had looted cars, and they had 10 or more men guiding them.
		Destruction of home or property	He lost his car, his house, and every other property he ever had got burnt.
		Job loss	Like those that were in the army before the war; when the war broke out, some of them were dropped out from the army.
		Break or termination of schooling	Some because of the war they have dropped from school and up till now they don't even want to go back to school.
Separation from family		Fleeing	I was with the Dennis' family until the war came and we fled to Freetown [Sierra Leone].
		Abandonment	Some men their wives follow the rebels and left their husband.
		Displacement	Yeah, for me I could say what I experienced was a difficulties, umm, in moving from one place to another
War environment		Injury during the war	According to him he was shot during the war.
		Seeing dead bodies	You wake up in the morning and you see in front of your house, you see a lot of beheaded people.
		Loss of body parts	They were going somewhere and I think they launched their truck and his leg cut [his leg got amputated from rocket explosion].
		Explosions or grenades	As rocket grenades were been launched by rebels, a rocket grenade exploded in their midst and killed her three children instantly in her presence.

> death, serious harm, or threat of death or injury experienced by a family member or other close associate.

Our analyses revealed codes for 32 war-related traumatic experiences, which we grouped into eight key themes (Table 1). The themes are described below, focusing on the most salient codes within each theme, in terms of both their frequency and impact. All participant quotes below are produced verbatim in Liberian English.

Abuse

Emotional or psychological abuse. Instances of emotional and/or psychological abuse included 'ill-treating,' torturing people by harassing them, using guilt to coax individuals into performing unwanted acts, and discrimination based on ethnicity. The various forms of emotional and/or psychological abuse are described under the following codes: *Ethnic discrimination*, *Threat or fear*, *Violation of cultural beliefs*, *Forced cannibalism*, and *Humiliation*. One of the most frequently reported forms of discrimination, ethnic discrimination, arose from the friction among the various ethnic tribes seen as allies or opponents during the war. Tensions were greatest between members of the Krahn ethnic tribe and Gio and Mano ethnic tribes, which frequently led to conflict and ill-treatment within families and communities. For instance, a participant narrated how she was ostracized by her adopted parents (who were Krahn) when they discovered that her biological parents were of the Gio tribe, and thus accused her of being associated with the rebel forces:

> It all began when one of my [adopted] uncles called me "you rebel baby, get off from in front of me." That statement played on me a lot. I was always ill-treated, no matter, whether I did good or bad.

Physical abuse. Physical abuse was also commonly reported as *Forced manual labor* and *Beatings*. Forced manual labor included 'forced portering' for men and manual work in the plantations for women. Forced portering involved rebel fighters forcing civilians to tow heavy loads and carry the rebels' ammunition to the battlefront. This led to long-term health issues, like chronic back pain and physical handicap, especially because many people were forced into manual labor without being fed or given time to rest throughout the day. This is illustrated in the following quote: "[They] made you to tow a very heavy load before and maybe lost your body or maybe caused you to be handicap today." Beatings were also common, often in conjunction with forced portering or being caught by rebel forces, or as punishment for refusing to leave when ordered to do so. Most of the beatings were severe and carried out either by the rebel fighters or by soldiers from the West African Peace Keeping Force (ECOMOG). As one participant noted, "He had some old newspapers; when he was told to leave, he refused and consequently he was flogged by the ECOMOG soldiers, and they dragged him from the scene."

Sexual abuse. This theme includes the following codes: *Rape*, *Sexual assault*, *Pregnancy due to rape*, and *Prostitution*, which were interconnected experiences for several participants. The rape of women and girls was most commonly reported, both experienced and witnessed. It was associated with lasting stigma and traumatic memories of the experience that persisted over time. The women who were raped, often multiple times by rebel fighters, were described as being silent or embarrassed about the incident because of the stigma attached to it. Rape survivors reported 'feeling bad' because society members talked about them in a negative manner, and men did not want to marry women who had been raped. As one participant noted:

> It like a stigma that has spread that she was raped during the war and as such when you are passing and even if they are no talking about you, you will have the feelings that people are discussing you and also can bring bad feelings to you.

Some of these rapes resulted in pregnancies, and the consequent responsibilities of childrearing, accompanied by the guilt and pressure to stay with the rapist. This were described in the following quote:

> She explained how the rebels killed my father and took her away, and they carried her to their base and started making love with her. She said she felt bad, she didn't want to have child by someone she didn't want to but because of the influence of gun that's why she had the child. She was forced to do it.

Captivity. This theme includes codes for *Imprisonment* and *Kidnapping/Abduction*. Participants described how the rebel fighters frequently caught civilians, either while they were trying to hide in bushes or fleeing from violence. Those who were captured endured intense torture and abuse (physical, sexual, and emotional), and some were captured and imprisoned multiple times while attempting to escape. One participant narrated:

> I was captured by Prince Johnson. We were victimized during the war. Prince Johnson took us to the base and we were there living with people that took us to their various home doing work that we not used to do but you just got to do them because of the war and you want to survive during the war you got to do these things that were not right.

Participants also reported kidnappings and abductions, the majority of which were of young girls and women. The hostages were not only raped and assaulted initially, but also made to live in captivity and serve as sex slaves for the rebel forces, as explained in the Sexual Abuse theme above. Some abducted women were forcibly married off to rebel leaders and not allowed to leave thereafter. As explained by a participant:

> People were being forced into marriages or let's say, by force, where the, the rebel will see you or the fighter will see you and just take you as his girlfriend or as his concubine or sex machine and just have you.

Combat. Combat-related codes include: *Former soldier*, *Forcibly recruited* to the fighting forces, and *Forcibly drugged*. Some participants simply stated a person's status as an ex-combatant, whereas others provided more context to the traumatic events experienced, witnessed, and perpetrated by former combatants, and the long-term trauma caused by these experiences: "Those men some of them were fighter, they themselves were affected by what they were doing." Most of the former soldiers referenced were males, but the interviews had inadequate information on the demographic make-up of former soldiers. Many were *forcibly recruited* as child soldiers, because young men were considered to be impressionable, able-bodied, and easy to manipulate through force. Reports of being *forcibly drugged* occurred most commonly with forced recruitment and highlight the use of addictive substances in recruiting and retaining combatants. This was discussed as a common practice, especially in the training of child soldiers, as it made them more dependent and amenable:

> Once you are 16 years and above or even sometimes less, they will recruit you and take you on the base and train you and give you drugs and carry you on the battlefront to go and react by fighting for them.

Death due to killings. This theme includes codes for *Killing of family or friends* as well as *Homicide*, with the latter category emphasizing the perpetration of killing, whereas the former implies experiencing or witnessing the killing of a close relative/friend. Some participants made general statements about killing of family members as a commonplace occurrence. Others were more specific instances of killings experienced by specific family members (with sub-codes for child(ren) killed, spouse killed, sibling(s) killed, parent(s) killed, and friend(s) killed). Participants shared witnessing several close family members being killed simultaneously, and the descriptions ranged in degree of graphic detail about the brutality of the civil wars. These experiences had the most severe and long-lasting psychological impact on people, with many reporting developing serious psychiatric disorders after the death of a loved one. Participants often described mothers 'going mad/crazy' after witnessing their children or husbands being killed, citing behaviors like crying hysterically, dancing naked in the streets, talking to oneself, completely ignoring personal hygiene, and discarding all social norms. One participant narrated the story of a woman whose son was killed in front of her:

> I was told that during the war, she had only a child, a boy child, and when INPFL [Independent National Patriotic Front of Liberia, a warring faction] entered Caldwell, that only child of her was taken out from her house and slaughtered in her presence, and from that day she took her bundle and put it on her head, got in the street, remained there and got crazy. Yes, the clothes that she wears, she doesn't change it, she don't take bath, she just get in the garbage and pick up remnants of food from the trash can and eat.

Physical ill health. This theme includes codes for *Illness* and *Starvation* during the war, which were due to two main reasons, as described by participants. The first was the lack of adequate healthcare, food, clean water, and sanitation facilities due to the destruction of infrastructure during the war. This led to illness, malnutrition, and subsequent death for many Liberians, especially children. These issues are captured in the following quotes: "Children were malnourished and some were swelling up and their hair dropping from their head and it was a very bad situation"; "Not just the children but adults also died; there was not food, no good sanitary, no safe drinking water and people have to live on little or nothing at all for a very long time." The second reason was explained as a 'survival' issue, whereby people had to make do with whatever food and money they had saved because they were too afraid to leave their houses during fighting and attacks. Although some people felt that this helped teach them how to save money and ration supplies, others discussed how difficult it was when they had run out of food and had nowhere to turn while starving. This sense of fear is reflected in the following quote:

> Sometimes you want to go out and there will be no way to go out because bullets were flying so people were kept indoors for some time until the shooting ceased before you can get out and go and look for food to eat.

Resource loss. Resource loss was discussed under the following codes: *Theft*, *Destruction of home or property*, *Job loss*, and *Break or termination of schooling*. Participants described how the Liberian civil war caused immense destruction and loss of livelihoods. Destruction of people's home and property was fairly common during the war and was often accompanied by looting, leading to

financial insecurity. As one participant noted, "People houses got burn and stolen so they are not in the position to get those things back so you will see them facing that emotional problem." The active fighting and destruction of public property also led to school closures and learning loss for many young people. Since education and employment were identified as important protective factors for recovery and rehabilitation, job loss and schooling breaks during the war were found to have significant long-term consequences. People reported these as being major sources of financial insecurity and found it hard to reintegrate into society and earn a living without the requisite skills and training. This is highlighted in the following participant quote: "When my father was killed, I had lacked support and stopped going to school, it would play on me because all my friends and classmates would be far ahead of me."

Separation from family. This theme includes codes for voluntary and involuntary causes of family separation, including *Abandonment*, *Fleeing*, and *Displacement.* Of these, fleeing was the most frequently reported, involving instances of people fleeing from gunfire and attacks by hiding in a bush or by jumping into water. This reflects the sense of urgency prevalent during the war, described in the following quote: "Those guys open suppressive gun fire on them so the only route some of them had to run was to run and come and jump in the water." Fleeing was also associated with widespread displacement—both internally displaced persons as well as refugees—as people often fled to neighboring towns, villages, and countries for safety. Although some returned to their hometowns after the war, others were unable to and were permanently separated from their family members, many of whom were killed during the war. The most commonly reported countries where people fled were Ghana, Guinea, Ivory Coast, Nigeria, and Sierra Leone. One participant stated, "For me like I said from the initial stage, during the beginning of the war, people went all over Africa. Some people went Ghana and Sierra Leone but for me I went Guinea."

War environment. These codes describe the direct and vicarious traumas experienced due to the widespread violence, such as *Injury during the war*, *Seeing dead bodies*, *Explosions and grenades*, and *Loss of body parts*. Although participants talked about the war environment in more general terms, the graphic and visceral nature of these experiences was reported as extremely traumatic. Seeing dead bodies or body parts of strangers lying around is one such specific experience that was reported by multiple participants, as depicted in the following quote: "You wake up in the morning and you see in front of your house, you see a lot of beheaded people, you see people are running, I mean, for me, it was beyond my imagination." Participants also reported people getting amputated or injured due to explosives, rockets, and grenades falling on escaping civilians. General chaos and war-related violence that included shooting, missiles, and other weapons were commonly reported:

> Where we was, it was where the rockets landed. The Guys, I think about three or four rockets landed in that fence. So before I could come back, I could hear the noise, people crying from all angles and they gathered all the dead bodies in front of the American Embassy.

Risk and protective factors

The most salient risk and protective factors reported were age, sex, education, employment, poverty, urban/rural dwelling, and social support. The manner in which these factors impacted civilians depended on the context, as explained in detail below. However, given the intersectionality between the factors and their effects on risk and resilience, the factors have been grouped into three main clusters.

Age and sex. It was reported that women experienced certain types of traumas more frequently than men, especially rape and sexual assault, prostitution, abductions, early marriages and pregnancy, and witnessing the killing of their children. In talking about sexual and gender-based violence, participants discussed the considerable stigma and lack of acceptance for women who had been raped, especially from prospective husbands. Men reported experiencing the following traumas more than women: forced recruitment, former soldier, forced drugging, forced manual labor, and physical abuse.

Moreover, as explained under the theme *Captivity'*above, females of younger age were considered vulnerable, and were frequently abducted, raped, and forced into sex slavery for the rebels. These forms of coercion and sexual abuse were described as extremely traumatic for young women who felt they had no power or choice to escape. One participant highlighted this:

> The rebels took her away because she was young. After that they took her along and throughout she was with the rebels, the commander. She said, she was forced to have sex; she didn't want to do it but she had no choice because she saw how others were killed.

On the other hand, males of younger age were considered able-bodied and commonly recruited as child soldiers to fight in the war. This is illustrated in the following quote:

> "They were recruiting as child soldiers. Sometimes like for me my mother always used to put me under her bed because at times people will come in your community and say they are looking for able body men."

Socioeconomic status. Indicators of socioeconomic status reported were education, employment, and wealth. Education was a key factor described by several participants, and the presence or absence of educational opportunities before, during, or after the war was considered instrumental in shaping one's future. As noted by a participant, "Those that went to school, their lives improved greatly but those that did not go to school are illiterate and so their lives are down [in poor living conditions]." The lack of education was expressed as an important precursor to poverty and unemployment, both of which were also described as impacting people's life trajectories. Participants felt that these factors were interconnected and that being stuck in this cycle of vulnerability led to multiple burdens over generations during and after the war: "Those that did not learn are down because they know no skills to work. They don't have skills to work so they are poor while the other people [those that learn] have little cash [money]." However, the presence of financial support was discussed as a key protective factor that helped help break this vicious cycle, and a common source of this support was from family members living overseas, as stated by one participant: "Yes, he had support to go to school. He had overseas supports from his sister … financial supports, his sister sponsored him."

Community-level support. Participants explained how the presence of social support (from family members, friends, and community) was an important factor for healing among those who were suffering after the war. However, the availability, type, and amount of social support varied depending on place of residence. For instance, a participant described the different trajectories for his cousin and his friend, both of whom experienced similar trauma (witnessing the killing of their parents), but their dwelling and community supports varied. The cousin lived in the interiors of the village where the traumatic incidents took place, whereas the friend moved to a town in which he had greater social support from family and friends. The following quotes present the cousin's narrative and how his social support, or lack thereof, contributed to his suffering. The participant explained how people in the interiors may initially offer support, but soon get busy with their work and forget about the sufferer:

> For his friend, friends were always around him to see him through but for his cousin, people were around him for a moment. In the interior, when you bereave, people come to comfort you for couple of weeks, after that they go about their businesses and leave you in sorrow.

Another issue that exacerbated the suffering was that the cousin continued to reside in the same town where the original traumatic event had taken place: "Change of environment is what he needs. He still lives where the incidents occurred [the same place where his father was killed]."

Factors affecting suffering versus recovery

We also examined patterns emerging from the data, revealing three main findings across interviews that were salient for the third research question regarding the combination of factors that affected long-term trajectories towards recovery versus continued suffering.

Cumulative trauma. First, participants described the cumulative effects of trauma for people experiencing multiple adversities. Many of the trauma experiences were interconnected such that most people were subjected to several war atrocities either simultaneously or in succession. For individuals whose primary trauma was the same, those who were exposed to multiple adversities were described to still be suffering, compared to those that experienced fewer traumas and had improved over time. One participant described this by comparing the experiences of two men during the war; one who perpetrated various atrocities like homicide, cannibalism, and physical abuse, and the other who was a former combatant but did not commit multiple violent acts:

> Maybe taking part in the war is one thing, and what you did when you were participating. Others killed human beings, they in fact ate them. And even went as far as getting young babies in mortar and beating them and even opening a pregnant woman stomach. Other people just went straight to fight their enemy or defend themselves, or some of them just held the gun and didn't one day go on the battlefront. So comparing those two guys this guy that did all the killing after war, those things tried to play on his mind. And then maybe worsen his situation.

Trauma subtypes. Second, certain events were considered to be more traumatic and may have had more sustained effects on individual suffering. A recurring narrative was the difference in recovery outcomes for those who had witnessed the death of a close family member compared to someone whose house or property was destroyed. Across interviews, participants described those who witnessed the killing of close family members (like a spouse or child) as suffering immediate shock and then going on to develop symptoms of severe mental illness, including withdrawal, depressed mood and crying spells, disorganized speech, poor hygiene, and potentially psychotic behavior (like stripping clothes and dancing naked in the streets). In comparison, people experiencing the destruction of home or property were more likely to recover, especially if post-war conditions allowed them to rebuild and recover what they had

lost. This difference is captured in the following quote by a participant:

> In this instance, that is a property, house is a property that can be placed into where it can be by an individual, by human being; so the loss of a house you can't compare it to the loss of human being.

Interactions of trauma subtypes and risk and protective factors. Third, there were risk and protective factors that, in combination with specific traumatic war events, were described as causing greater long-term suffering among survivors. However, the manner in which these factors influenced each other varied. For instance, the association between the age and sex of the survivor was salient but differed across traumatic experiences. As explained in the 'Risk and protective factors' section above, younger age and female sex were described as risk factors for abduction/kidnapping, sexual abuse, and sex slavery, and resulted in long-lasting trauma from these experiences. However, male sex and younger age were associated with forced recruitment, drugging, and portering, and the long-term health consequences of these experiences. Moreover, female sex and older age were associated with poorer mental health and recovery outcomes when exposed to traumatic events like the death of a child. This was hypothesized as being due to the perceived notion that younger mothers had greater likelihood for future pregnancies compared to older mothers who had lost their children. This combination of factors is described in the following participant quote:

> Sometimes the person that losing the child, we consider their age. If a woman is the age of 45, she feels that she has past the stage of fertilization period that she will no longer conceive a child, so if she has only a child and that child dies or is taken away, it creates lot of confusion in her mind. But like my age 33, if I have a child and the child died I still have the hope that I am young and I will born and that child will be replaced.

Socioeconomic status was also particularly relevant in combination with the *resource loss* theme, which was often both a cause and consequence of poverty, unemployment, and illiteracy. For instance, destruction of homes, displacement, and job loss led to widespread poverty and food shortage. In fact, *physical ill-health* was another key consequence of poverty, as illustrated by the following quote:

> We were taught lessons from the war by learning how to save money because during the war if you did not have money, you will starve throughout but if you had money saving to manage and be selling and you had food in your house you will survive so the war taught us to manage the little we have.

Discussion

The aims of this study were to understand: 1) the various traumatic experiences of civilians during the Liberian civil wars; 2) the risk and protective factors associated with the mental health of trauma survivors in Liberia; and 3) how these traumatic war experiences interact with risk and protective factors to shape psychological risk and resilience over time. Using qualitative thematic analysis, eight key trauma themes emerged: abuse (emotional, physical, and sexual), captivity, combat, killings, physical ill-health, resource loss, separation from family, and war environment. The risk and protective factors identified as salient include age, sex, socioeconomic status, and community support. The combination of these factors with certain traumatic experiences was found to increase long-term psychological suffering or resilience outcomes in unique ways. For instance, many older women who witnessed the killing of their children went on to develop depressive or psychosis-like symptoms. Exposure to multiple traumatic events and/or certain types of experiences (for example, killings of family members) was also found to worsen outcomes, especially with regards to the development of mental illness. These findings are explained below.

The study's first research question explores the types of traumatic war experiences reported by participants. Our findings are supported by similar traumatic events reported in studies across conflict settings, including physical abuse, sexual assault and rape, displacement, death of close family members, destruction of property, and witnessing atrocities (Agaibi & Wilson, 2005; Borba et al., 2016; Cherewick et al., 2016; Cook et al., 2015; Seguin et al., 2016; Steel et al., 2009; Vinck & Pham, 2013). The participant narratives present a compelling picture of the atrocities committed during the Liberian civil wars and contextualize various human rights violations that were condemned by the international community, including ethnic discrimination, severe food shortage, mass displacement and fleeing, and widespread use of child soldiers and female sex slaves. Moreover, our study uncovered additional categories not captured by quantitative studies using survey measures, including job loss, seeing dead bodies, forced drugging, ethnic discrimination, explosives or grenades, forced cannibalism, fear and humiliation, prostitution, and pregnancy due to rape. These findings are particularly useful for the development and validation of a culturally grounded measure of war-related trauma in Liberia and other West-African contexts, which could also be used by healthcare workers for screening patients with symptoms of trauma and distress. It is important for mental health service providers to consider the historical context from

the civil wars and how they have impacted intergroup relations and the perpetuation of trauma. This includes the persistence of emotional abuse and psychological issues due to tensions between the Krahn ethnic tribe (that was associated with former President Samuel K. Doe) and the Mano and Gio tribes (associated with the rebel forces of the National Patriotic Front of Liberia) (Galea et al., 2010).

The second research question relates to the risk and protective factors that aid or hinder recovery from previous war trauma in Liberia. Our analysis indicates that females, those with lower socioeconomic status, and those with low levels of social support may be at greater risk for poor mental health, similar to findings from other studies across geographical and humanitarian settings (Agaibi & Wilson, 2005; Betancourt & Khan, 2008; Brewin et al., 2000; Tolin & Foa, 2006). However, this study offers contextual explanations for the differential impact of these factors. We found that social support in Liberia may be connected to geographic location, whereby individuals living in village settings may have had limited social support and greater long-term suffering. This supports findings from a multilevel modeling study documenting associations between village-level characteristics and higher post-traumatic stress symptoms in Liberia's Nimba county (Rockers et al., 2010). Moreover, we found that poverty, unemployment, and low educational attainment are key obstacles to recovery from trauma, especially if these conditions persist following conflict. The negative impact of such economic and social conditions can be interpreted within Miller and Rasmussen's framework that argues for greater focus on the critical role of post-conflict stressors and daily hardships in trauma research (Miller & Rasmussen, 2010).

The third research question seeks to explore the interplay between these factors in shaping the long-term trajectories of trauma survivors, specifically exploring why certain people improved while others continued to suffer. Three key findings emerged. The first is the cumulative negative impact of multiple traumas compared to singular or fewer traumas. Interviews revealed that for individuals who had similar experiences, those that were exposed to multiple and prolonged traumas were more likely to continue suffering over time. This finding is supported by studies that show increased risk for mental illness among individuals with cumulative exposure to trauma (Briere et al., 2015; Myers et al., 2015; Ogle et al., 2014; Seery et al., 2010; Yoder et al., 2016). Second is the differential impact of specific trauma subtypes. Participants explained how certain experiences, like witnessing the murder of a loved one, had a greater negative impact than the destruction of one's property, the latter being perceived as easier to recover from during the post-conflict rehabilitation phase. Third is the dynamic interaction between various risk and protective conditions and traumatic experiences, for instance among younger women from ethnic minorities experiencing sexual violence. The narratives in this study provide a better understanding of the multiplicative traumas experienced by women in Liberia. Swiss et al. (1998) used a survey to describe the various types of war-related violence experienced by women during the Liberian civil wars and found that 14% of their sample reported experiencing more than one type of violent act during the war (Swiss et al., 1998). They also found that women accused of belonging to a particular ethnic group, women younger than 25 years at the time of the study, and women who were forced as slaves for soldiers were all at greater risk for physical and sexual violence. These factors support our findings regarding the physical and sexual assault experienced by Liberian women, as well as the increased trauma and discrimination experienced by younger women who were often kept in captivity by the rebel forces and used as slaves.

These findings have additional implications for the long-term mental health of those experiencing war trauma. Similar findings were reported about Liberians' memories of witnessing and experiencing torture and atrocities during the war that continued to haunt them and led to nightmares, dissociative states, and flashbacks indicating the development of PTSD symptoms (Nyarko & Punamäki, 2020). It has been reported that child soldiers who were abducted at a young age and forced to commit atrocities such as forced cannibalism and homicide may experience moral injury, a form of traumatic stress due to perpetrating actions that violate their beliefs and values (Wong, 2022), as well as high levels of self-harm and antisocial behavior (Sharma et al., 2017). However, our findings also reveal the strength and resilience of Liberian trauma survivors, with important implications for healing and recovery, which can be mobilized for reconciliation, as was demonstrated by projects such as Fambul Tok for forgiveness and community peacebuilding among perpetuators and survivors of war trauma in Sierra Leone (Graybill, 2010).

Strengths and limitations

This study has key strengths and limitations that should be noted. Respondents were asked to think of someone who experienced a traumatic event during the war. Although some participants narrated their own stories, others chose to describe the experiences of someone else they knew. Thus, the level of detail and subjectivity varied across interviews, and may be prone to bias. Moreover, the interviews were conducted in English, the official language of Liberia and commonly spoken in the study site, Monrovia. This was due to logistical reasons; however, it may have been ideal to conduct interviews in any additional languages spoken by participants. It is often challenging for interviewers to maintain neutrality and trustworthiness in qualitative research, especially while dealing with sensitive

content like trauma and mental health (Graneheim & Lundman, 2004). However, the interviewers received intensive training in qualitative methods and interviewing skills, including building trust, being non-judgmental and empathetic, and not letting their subjective biases influence the process. Further, these narratives reflect the views of a sample of respondents from one region in Liberia. Although these cannot be generalized to other war settings, they provide interesting contextual information about the Liberian civil wars and demonstrate the strengths of using qualitative data to uncover the unique trauma experiences of Liberians that may not be captured by measurement scales with limited categories. This is one of the few studies to examine the unique trauma and mental health experiences of Liberians during the civil war. The study used rigorous methodology including multiple coders and multiple rounds of assessing intercoder reliability to analyze and interpret the qualitative findings and has key implications for mental health research in Liberia.

Research directions

The war-related experiences described in this study analyze individual-, family-, and community-level traumas within the social-ecological framework, presenting an opportunity to develop appropriate interventions targeting modifiable social determinants at multiple levels (Bronfenbrenner, 1977; Masten & Obradović, 2008). The findings highlight the social and economic conditions that impact associations between war-related trauma and psychosocial outcomes. However, a more detailed examination of post-war hardships and daily stressors as mediators and moderators of the association between initial war trauma and long-term psychosocial health could provide additional context (Jordans et al., 2012; Miller & Rasmussen, 2010; Tay et al., 2015). Moreover, there has been extensive research on coping styles mediating the impact of traumatic war events and ongoing adversities on long-term mental health across conflict settings (Boxer & Sloan-Power, 2013; Cherewick et al., 2016; Seguin et al., 2017; Sharma et al., 2017; Yule et al., 2019). This article sets the stage for additional analyses from the larger study data, which aims to explore other relevant factors (including coping styles and help-seeking behaviors) that build long-term individual, family, and community resilience in post-conflict Liberia.

Conclusion

This study presents a culturally specific portrait of trauma and mental health in post-conflict Liberia. Although there are commonalities with trauma experiences across multiple humanitarian settings, there are unique narratives uncovered by this study that can help physicians and health care providers screen patients more efficiently as well as build trust and empathy with their patients (Cook et al., 2015). Understanding the country's complex sociopolitical and trauma history is especially important given the previously reported high PTSD rates as well as the recent influx of foreign aid for mental health and psychosocial support interventions in Liberia (Galea et al., 2010; Gwaikolo et al., 2017; Johnson et al., 2008). This study provides the first step in developing an integrated theoretical model for risk and resilience in low-resource settings in Sub-Saharan Africa. Future research in similar post-conflict settings can utilize the thematic categorization developed in this study. These findings can help researchers and clinicians design culturally appropriate mental health epidemiological measures and screening tools, as well as indicate priority groups and change pathways for psychosocial interventions in Liberia.

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Author contributions

Manasi Sharma: Conception and design of the research questions; analysis and interpretation of data; drafted the paper. Allison Backman: Analysis and interpretation of data; review and editing of the manuscript. Oriana Vesga-Lopez: Co-Principal Investigator for the project; conception and design of the project. Lazaro Zayas: Co-Principal Investigator for the project; conception and design of the project. Benjamin Harris: Co-Principal Investigator for the project; conception and design of the project. David C. Henderson: Principal Investigator for the project; conception and design of the project. Karestan Koenen: Review and editing of the manuscript. David Williams: Review and editing of the manuscript. Christina P. C. Borba: Co-Principal Investigator for the project; conception and design of the project; review and editing of the manuscript.

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Ethics approval and consent to participate

This study was approved by the University of Liberia's Institutional Review Board and the Partners Human Research Committee. All study participants were over the age of 18 and provided informed consent.

Consent for publication

Informed consent (and assent, where appropriate) was obtained from all individual participants included in the study.

Availability of data and materials

The data that support the findings of this study are not publicly available due to participant confidentiality restrictions but are available from the corresponding author on reasonable request.

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Appendix 1: Free-listing interview guide

Hello my name is __ from ___. You have already signed informed consent for this research study, and we would like to remind you that your participation in this interview is voluntary. The interview will take approximately 90 min and at any time you need a break, please feel free to say so and I will stop. The reason for this interview today is for me to hear about your thoughts about how adult individuals in Liberia experience and manifest well-being and distress. I am very interested in hearing what you have to say. I will be tape-recording this session and taking notes. Your name will not be on the tape; you will be given a number. After the session, the tape will be typed up into a transcript, and the original tape will be erased. If you happen to refer to a name during the session, the name will be disguised in the transcript. The only people who will see this transcript are involved in this project.

Any time you want to stop the interview or have me turn off the tape, you can tell me and we will stop. Do you have any questions before we start?

(Turn on the tape)

Think about someone, a man or a woman, whom you know who has experienced some type of suffering as a result of the civil conflict in Liberia.

1. First, I would like to ask you to think about someone who is still suffering even though the event they experienced is in the past.
   (a) Could you describe the event that caused this individual to suffer?
   (b) What are some of the problems that this person faced?
   (c) How did this individual experience his/her suffering? What are specific indicators of the individual's suffering?
   (d) What are some important day-to-day activities and tasks that men/women do to care for themselves, for their families, and for their communities?
   (e) How did the individual face or cope with his/her problems/suffering?
   (f) Why do you think this individual is still suffering?
2. Now, I would like you to think about someone who recovered and is now functioning well despite the suffering.
   (a) Could you describe the event that caused this individual to suffer?
   (b) What are some of the problems that this person faced?
   (c) How did this individual experience his/her suffering? What are specific indicators of the individual's suffering?
   (d) What are some important day-to-day activities and tasks that men/women do to care for themselves, for their families, and for their communities?
   (e) How did the individual face or cope with his/her problems/suffering?
   (f) Why do you think this individual recovered? What are specific indicators that the individual recovered?