

FAMILY RELATIONSHIPS AND SOCIAL INTERACTION IN
POST-CONFLICT SOUTH KIVU PROVINCE,
EASTERN DEMOCRATIC REPUBLIC OF CONGO

*A MIXED METHODS STUDY WITH WOMEN
FROM RURAL WALUNGU TERRITORY*

By

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Abstract

Statement of the Problem: In the eastern Democratic Republic of Congo, rural villagers have endured more than 16 years of conflict. Villagers have described the individual, family and social impact of violence and poverty as important to consider in both research and intervention. The overall goal of this study was to understand the effects of multiple and different types of conflict and non-conflict related trauma on family relationships and social interaction in South Kivu Province, DRC.

Method: Participants in this study were adult residents (16 years and older) of 10 selected villages who were members of an impact evaluation of a livestock based microfinance program, Pigs for Peace. Using baseline data from the study, papers 1 and 2 employ linear and logistic regression to explore relationships between variables. Paper 1 explores the relationship between exposure to traumatic events and current symptoms of poor mental health on social interaction. Paper 2 explores the relationship between exposure to multiple and different conflict-related trauma events, family rejection and poor mental health. Paper 3 includes in-depth interviews with perpetrators and victims of intimate partner violence.

Results: Findings illustrate the importance of family relationships and social interaction to well-being. PTSD and specific trauma exposures were related to less frequent social interaction. Experience of family rejection was associated with trauma experience and poor mental health. IPV victims and perpetrators described the multiple individual, family and community consequences of violence as important.

Conclusion: The results show the importance of addressing the multiple and different types of conflict trauma and IPV. Developing an equal partnership with local communities to identify problems, priorities and solutions is important. The findings indicate that use of a

socio-ecological model may facilitate a more comprehensive understanding of needs and intervention options in post-conflict settings.

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List of Abbreviations

AIDS	Acquired Immune Deficiency Syndrome
DRC	Democratic Republic of Congo
GBV	Gender Based Violence
HDI	Human Development Index
HIV	Human Immunodeficiency Virus
HSCL	Hopkins Symptom Checklist
HTQ	Harvard Trauma Questionnaire
IPV	Intimate Partner Violence
IRB	Institutional Review Board
NGO	Non Governmental Organization
NIH	National Institutes of Health
NIMHD	National Institute on Minority Health and Health Disparities
PAIDEK	Programme d'Appui aux Initiatives Economiques (PAIDEK)
PFP	Pigs for Peace
PLHA	Persons Living with HIV/AIDS
PTSD	Post Traumatic Stress Disorder
STI	Sexually Transmitted Infections
VAW	Violence Against Women
WHO	World Health Organization

Chapter 1: Introduction

In eastern Democratic Republic of Congo (DRC), the on-going 16-year war is marked by human rights violations with the health, social and economic consequences of violence impacting individuals, families and communities [1, 2]. Estimates of exposure to traumatic events are high with most rural villagers reporting repeated exposure to different events [3, 4]. Results from a cross-sectional survey conducted in accessible parts of North and South Kivu Province and Ituri District in eastern DRC included 50.0% of people reporting physical violations (being beaten, shot, stabbed, or other assaults); 20.8% reporting movement violations (capture, abduction and forced displacement); 50.8% reporting property violations such as theft or destruction of property or home; and 42.9% being forced to participate in sexual violations [4].

Local populations that have experienced conflict describe the multi-level impact of violence on individuals, families and communities. Often, community leaders prioritize the family and community-wide social and economic impacts of violence (e.g., loss of economic opportunity, changes to and disruption in family and social networks, rebuilding of health and education systems) [5-7] in addition to individual needs. Yet, most research on conflict focuses on individual experiences and outcomes of violence with an emphasis on individual outcomes or specific acts of violence (e.g. sexual violence) [8]. While individual outcomes and experiences are important, it is necessary to also consider the effect of violence on family relationships and social interaction.

In this setting, a joint Congolese-US partnership to address the multi-level impact of war and instability on rural populations living in South Kivu Province, eastern DRC was initiated in 2008 and expanded in 2011. The intervention, Pigs for Peace (PFP), is a livestock-based microfinance program that operates at the individual, family and community

levels to address the economic, health and social needs of rural populations [9]. After receiving permission and commitment from local traditional and administrative leaders, trained Congolese PFP Research and Microfinance agents (i.e., PFP agents) train interested and committed villagers to care for pigs, build pigpens and a compost which will be used in members' agricultural plots and organize regular community meetings where members work to support each other through the project. Pigs were chosen for the livestock based microfinance program because, culturally, pigs are acceptable to rural populations; there are no traditional restrictions on whether men or women can raise them; pigs consume a wide range of foods that are available in local villages (e.g., bananas, sweet potatoes, avocados); pigs reproduce twice a year and produce an average of 6-12 piglets each time; rural villagers traditionally participate in agricultural and animal husbandry activities; and rural villagers expressed a desire to revive these activities [9].

This dissertation is embedded in the NIH/NIMHD funded, community-based impact evaluation of PFP (PI: Dr. Nancy Glass). This dissertation research characterizes the importance of family relationships and social interactions amongst adult female participants in the PFP project. This expanded view of the impact of conflict and the associated social and economic hardship on rural communities was developed based on formative research and discussions with local leaders and our Congolese partners to understand needs and priorities [5] and an examination of existing research conducted with rural Congolese populations [3, 6, 10]. Local populations prioritized action research (i.e., research coupled with an intervention); an expanded view of community and family needs that was not limited to single traumatic experiences (e.g., sexual violence); and a desire to understand family relationships within the context of, but separate from, conflict-related violence [5, 6, 9]. Therefore, this dissertation explores family relationships and social interaction in the

aftermath of war amongst adult, female participants in PFP through the following three aims:

- (1) Describe how past exposure to different and multiple conflict-related traumatic events affects current social interaction amongst adult women living in eastern DRC;
- (2) Explore the relationship between conflict-related trauma, family rejection and mental health amongst female participants in a Congolese-led microfinance program; and
- (3) Describe, in-depth, IPV perpetration and victimization; individual and family consequences of IPV perpetration and victimization; and community-driven solutions to IPV prevention and response in rural South Kivu province.

Research related to the first two research aims comes from the baseline data of the PFP impact evaluation. The third aim examines the role of family relationships in a post-conflict setting more deeply with a focus on IPV. Using one-on-one, in-depth interviews, the study involved select male and female participants in PFP that reported perpetrating or experiencing IPV in their marital relationship. Taken together, these three studies provide a broader understanding of how, living with conflict and economic instability, has impacted family relationships and social interaction and opportunities to strengthen and build upon existing relationships.

Armed conflict and health

More than one and a half billion people live in countries affected by conflict, fragility or large-scale organized violence [11]. Armed conflict affects the health of local populations on many levels including being victims, witnesses and forced participants in violent acts, economic instability, loss of wealth, displacement and death of family member and friends.

The World Bank's World Development Report 2011 documented the large impact of conflict on population well-being including a poverty rate that is 21 percentage points higher in countries that experienced major violence between 1981-2005 as compared to non-conflict affected countries [11]. Another study that examined the relationship between violent conflict and health in sub-Saharan African states between 1980-1997 reported that countries which have experienced severe conflict had 35% higher infant mortality rates, 14% higher fertility rates, 54% fewer attended births, 33% lower DPT immunization rates and 13% lower life expectancy [12]. Instead of closing the gap between achievements in non-conflict and conflict-affected countries, analysis for the World Development Report 2011 provided evidence of a still widening gap between conflict-affected and conflict-prone countries as compared to non-conflict countries [11]. It is not impossible for conflict-affected countries to show progress; services may require more innovation, faster response to changing realities, stronger local partnerships and increased investment. Working more closely with local communities to identify priorities, design interventions and implement and manage services may lead to more effective and sustainable programs [13].

Violence against women

The United Nations Declaration on the Elimination of Violence Against Women defines violence against women (VAW) as “any act of gender-based violence that results in, or is likely to result in, physical, sexual or mental harm or suffering to women, including threats of such acts, coercion or arbitrary deprivation of liberty, whether occurring in public or private life” [14]. As defined by the World Health Organization (WHO), violence is intentional regardless of the outcome and includes the use of physical force or power [15]. The WHO focus on VAW includes a range of actions or purposeful neglect (i.e., acts of omission). Violence can result in social, physical and psychological problems that directly

affect the victim and their family and community [15]. VAW is a major public health concern and human rights issue [14, 16]. VAW can occur in different forms, at all ages, in multiple locations and by different people. Since the 1996 World Health Assembly declared violence a public health priority [16], preventing and responding to VAW, gender equity and empowerment have become key issues in a range of health and development programs. In 2012, the United States stated that gender equality and the advancement of women and girls is an important component of US foreign policy. Preventing and responding to gender based violence (GBV) is considered an essential component of this commitment to women and girls [17].

In conflict settings, the majority of victims are civilian populations. Men and women experience similar and different risks and outcomes as a result of war. For example, men are more likely to participate in the battlefield and women are more likely to be caregivers for the family and provide support to soldiers (e.g., cooking). These gendered tasks are not absolute; for example, women participate in combat in many settings. Specific acts that more frequently directly affect women and girls include forced displacement and GBV (e.g., sexual assault, forced sex work and physical and sexual violence) [13, 18]. Women may become the head of household as a result of displacement and death of family members, targeted for specific acts of violence, trafficked and separated from family members [19]. Experiences of VAW in conflict-affected countries is not limited to times of active combat; instead violence continues in places and by people that should provide safety like in refugee camps and in the home and by protection officers including international aid workers, peacekeepers, civilian authorities, police and community and family members [20, 21]. Women differentially experience social, economic and health outcomes through becoming the primary provider of the family, poor mental health, reproductive health issues (e.g., unwanted pregnancy,

difficulty addressing menstruation needs, sexually transmitted infections) and increased caregiver responsibilities [20]. In addition to the direct health effects of violence, VAW is as a risk factor for future diseases and conditions for the survivor and those who are affected by it (e.g., children, family members) [16, 22]. This study focuses on two types of VAW: collective violence and interpersonal violence.

Exposure to trauma in conflict-affected settings

Research in conflict settings points to the impact of violence on physical, mental and social health [23]. In Sierra Leone, adult residents of Freetown who had experienced war revealed high exposure to conflict including exposure to crossfire (84%), aerial bombing (83%), destruction of homes (73%) and property (62%) [24]. Amongst refugees living in two Darfuri camps in eastern Chad, results from a survey found that people were directly exposed to an average of 2.48 different traumatic events and witnessed an average of 8.65 different traumatic events. In addition, almost all participants (98.3%) reported loss of at least one material item [25]. Internally displaced northern Ugandans reported, in a 2006 cross-sectional survey, high exposure to traumatic events: 75% witnessed or experienced the murder of a family member or friend; 64% witnessed the murder of a stranger(s); and 56% were beaten or tortured. More than half of the participants (58%) had experienced 8 or more different traumatic events [26]. In eastern DRC, where this study takes place, exposure to human rights violations is high. A 2010 cross-sectional survey in secure, war-affected parts of North and South Kivu Province and Ituri District, 39.7% and 23.6% of women and men, respectively, reported sexual violence and 30.5% of women reported intimate partner violence [4]. In conflict-settings throughout the world, local populations have reported similarly high levels of direct and indirect exposure to violence, loss of material goods and displacement [8, 26, 27].

Several studies document exposure to conflict-related violence as a risk factor for mental illness [26-28]. A dose response relationship between lifetime and past year exposure to different traumatic events and PTSD in men and women has been identified [26, 29]. In a study with Albanian Kosovar refugees, Eytan et al [30] documented a negative cumulative effect of exposure to conflict-related events on mental health. Those exposed to more events (e.g., forced separation, death of family members or friends, combat situations, witnessed murder or being close to death) had higher odds of PTSD. In a study with war affected individuals from five Balkan countries and those displaced to 3 western European countries, Priebe et al [31] found that the effects of traumatic war experiences continue, even years after the conflict. Post war contextual factors such as migration to a new country and legal status also contribute to poor mental health. It is important to note that not everyone exposed to traumatic events develops mental health problems. Other situational and contextual factors such as social isolation and spousal abuse may influence individual, family and community level outcomes in war-affected populations [32]. A review of factors affecting general psychological health in conflict-affected populations in low and middle-income countries reported that women experienced worsened mental health, likely due to social factors and domestic and sexual violence [8], a finding that is consistent even in non-conflict settings.

Family and Community Relationships in Conflict-Affected Countries

Developing, rebuilding and strengthening family and community relationships after conflict are an important concern for local communities [5, 6, 33-35]. The role of the family and community in responding to and coping with the multiple experiences and consequences of violence and daily stressors is less researched than individual outcomes. Summerfield emphasizes the social context as instrumental to the process of actively

engaging with and addressing the impact of war. “War-affected populations,” he explains, “are largely directing their attention not inwards, to their mental processes, but outwards, to their devastated social world... War is a collective experience and perhaps its primary impact on victims is through their witnessing the destruction of a social world embodying their history, identity and living values and roles” [36].

A review of literature on the multiple costs and consequences of disasters on individuals, families, communities and people remote from the disaster described how these events positively and negatively change the dynamics and structure of social relationships. Disasters may increase stress and family conflict, but it can also strengthen bonds between family members. In the aftermath of disaster, people may experience a reduction in or loss of social and community resources. At the same time, disaster-affected populations emphasize strengthening bonds, cooperation between community members and enhancing a sense of belonging as a means to overcome adversity [37]. In Beirut, Lebanon, family adaptation outcomes amongst war-affected populations differed according to perceived stress associated with war and non-war experiences. Families with lower perceived stress reported more positive interpersonal relationships, physical health, marital relations and fewer symptoms of depression [38]. A qualitative review of a family focused intervention with Bosnian refugees living in Chicago documented the multiple opportunities and difficulties that families experienced as a consequence of war, relocation and cultural adaptation. Refugees described hardships including changes in roles and obligations of family members, communication, family relationships and separation from family. The family unit and individual members had an instrumental role as a source of hope, problem solving, support and stability for refugees [39]. Congolese refugees living in Montreal, Canada that sought assistance from a community organization described exposure to

traumatic experiences as leading to physical health problems; changes in family structure associated with exposure to trauma and separation from family were considered true ruptures in their lives. Rousseau [40] summarized the separation from family as challenging the Congolese refugees' "ability to define themselves, their very identities, that seem to be undermined by the separation".

Several studies have focused on the specific effects of conflict-related sexual violence on family and community relationship and economic stability [2, 6, 41-46]. A study amongst women accessing services at Panzi Hospital or one of two rural NGO's in eastern DRC found that 29% of women reported abandonment by their husband after rape and 6% reported abandonment by their communities [47]. In a random sample of 2,620 participants in North and South Kivu province and Ituri district (2007) in DRC, one-third of respondents said that they would not accept a survivor back into their home [48]. There are many reasons for stigma and rejection by family and community after sexual violence including family members feeling humiliated at having a rape survivor in the household; thinking that the woman married or befriended her aggressor; fearing return of the aggressor; family and community members witnessing the assault; having reproductive health problems post-assault; and challenging the concept that women are bearers of culture and purity [7, 48-51]. Spouses of survivors describe their feelings of anger, helplessness, loss of male self-esteem and economic loss as challenging for resuming marital relationships [2, 5]. Women have also described how, even when one member of the family or some community members abandon her, other persons may continue to offer her support through helping with food, school fees, shelter, clothing and counseling. Some members of the community explained how, when one member of the community is raped, the whole community is raped illustrating how rape affects the entire community and not just the individual [5]. In a

qualitative study with Mozambican female survivors of sexual violence, women described the changing family and community relationships as the most important impact of the assault [7].

In addition to sexual violence, exposure to other types of trauma has altered family and community relationships and individual roles and responsibilities [2, 33]. Focus groups conducted with men and women in 3 towns of eastern DRC described changed family and community relationships due to violence. For example, death and displacement has resulted in increased female head of households impacting economic stability and family and community interaction. Difficulty in gaining employment and farming land resulted in loss of male identity as providers of the family. Changes to family and community support structures, lack of strong and organized leadership (traditional, political, religious) and displacement of families and communities negatively impacts recovery from conflict [6, 35]. There is a need for a more comprehensive understanding of the different conflict and non-conflict related factors that affect family and community relationships and opportunities to rebuild these social structures [33, 34, 37].

Intimate partner violence in conflict settings

The Centers for Disease Control defines intimate partner violence (IPV) to include physical, sexual or psychological harm by a current or former partner or spouse. IPV is rarely a one-time event and often includes escalation in types of violence and severity of violence [22]. A WHO-led systematic review of global IPV prevalence up to 2011 reported that 30.0% of ever-partnered women experienced physical and/or sexual IPV. The data show high prevalence (29.4%) even amongst young women (15-19 years) [52]. The impact of IPV is multi-level and includes poor health outcomes (e.g., reproductive health, PTSD, depression, injury, death, chronic pain, disability, hypertension), limited access to health care

and socio-economic costs [52-54]. Beyond the individual level, IPV impacts the health, security, stability and economic well being of families and communities [54-57]. The relationships between risk and protective factors and IPV in one setting may differ from those in another setting illustrating the need for local information on the causes and protective factors for IPV [58, 59]. Potential risk factors for IPV include poverty and the associated stress, economic inequality between spouses, alcohol consumption, having outside sexual partners, experience of childhood abuse or domestic violence, normative use of violence in conflict situations and attitudes supportive of IPV [22, 58, 59].

Recently, studies that have explored IPV prevalence and risk in populations affected by conflict and human rights violations reveal elevated IPV associated with trauma exposure and violence. A cross-sectional study in Liberia reported that male experience to a traumatic war-related event (e.g., direct exposure to war trauma, coercion, witnessing war related violence and taking part in conflict) in the past 10 years, PTSD, depression and higher income were associated with perpetrating intimate partner physical violence. Women were more likely to experience physical IPV if they were directly exposed to war-related trauma or crime, took part in the conflict, had PTSD or depression or had higher income than their male partner [60]. War-related factors including changing gender roles, increased substance abuse, stigma, reduced employment opportunities, trauma, stress and displacement, experience of human rights violations and political violence may add to existing risk for IPV [61-63]. Elevated IPV in conflict settings has been reported in Uganda [61, 64] and Lebanon [65] and amongst Burmese refugees living in Thailand [66] and men exposed to political violence [62, 67]. Yet in East Timor, a cross-sectional study that collected data on experience of IPV during the crisis and one-year post-crisis found no difference in the prevalence of

reported IPV [45], possibly indicating that not all conflict-settings have elevated IPV experiences associated with war trauma.

As in non-conflict settings, few women who experience IPV seek help; those that do often seek family support over institutional assistance [45, 68]. A recent report by the International Rescue Committee on IPV in Liberia, Sierra Leone and Côte d'Ivoire described women's experience of the impact of IPV to include increased fear, isolation from family and friends, reduced productivity and dependence on their male partner. In this context, it is necessary to have multi-level programs that address the health, economic and social factors that contribute to violence and safety [63]. Although the eastern Democratic Republic of Congo has experienced a long and violent war and nationwide about 71% of women report lifetime IPV and 49% report physical IPV in the past year [69], few studies have examined the experience of IPV in the household and opportunities to develop interventions to respond to this need.

Study context and population

Over the course of 16 years of fighting, rural villagers living in eastern DRC have experienced high levels of violence, displacement and loss of social structures [3, 4]. People have described witnessing the death of family members and friends, sexual violence, torture, loss of wealth, disruption to traditional family and social networks and on-going fear and instability [3, 4, 70]. Even prior to the start of the conflict, the DRC lacked a well-functioning government, economic infrastructure and education and health system [3, 71]. The Human Development Index (HDI), a composite measure encompassing health, education and income, ranked the DRC last, tied with Niger, amongst 187 countries in terms of human development [72]. Production of food in the DRC is limited as a result of livestock being stolen or killed during the conflict and poor soil quality due to over

exploitation and over population [3]. With the destruction of infrastructure and growing insecurity, trade on land and air is limited [3]. Local populations are left to make a living mining charcoal, collecting firewood, managing small plots of land, raising livestock and operating small businesses. Some of these professions leave the population open to further attack especially as women play a lead role in farming and livestock management.

The health system in the DRC is relatively decentralized with an emphasis on primary health care [73]. In practice, health facilities in eastern DRC are not always present, operational, equipped or staffed. NGO's and faith-based organizations have filled a large gap in the health system by providing care directly or by linking with the local health zone to supplement and increase services available to the population [73]. As a result, access to health services is limited in part due to state collapse, mismanagement, lack of infrastructure and amenities and poor health services prior to the conflict [74, 75]. During the conflict, health centers were looted or destroyed and many facilities were closed or lacked sufficient staff, medications and equipment. A 2010 population-based study conducted in secure and accessible villages of North and South Kivu Province and Ituri District captured information on access to resources and services: 54% (CI: 42.2-67.1%) reported use of an untreated water source, 67.1% (CI: 57.6-76.5%) had inadequate cooking fuel and 55.9% (CI: 46.5-65.2%) had inadequate shelter. The study defined adequate access to general health care as within 4 hours walking distance; 67.1% (CI: 59.3-75.0%) reported inadequate access [4].

Between 2000 and 2007, the International Rescue Committee conducted 5 mortality surveys in the DRC. The first two (2000, 2001) focused on the 5 eastern provinces, which endured high levels of conflict. The remaining surveys were conducted for national representation (2002, 2004, 2007). The most recent mortality study estimated a crude mortality rate of 2.4 deaths per 1000 population per year (CI: 2.3-2.6) in the eastern

provinces [76]. As with other conflict settings, the survey found preventable health-related problems to be the main causes of death including fever/malaria, diarrhea, respiratory infections, tuberculosis and neonatal deaths [76]. The 5 International Rescue Committee mortality studies estimate that between August 1998 and April 2007, there have been 5.4 million excess deaths, of which 4.6 million occurred in 5 provinces of eastern DRC [76]. These conditions show an inability of the health system in the DRC to provide services to the general population, much less conflict-affected populations living in eastern DRC. Many of the health-focused interventions in eastern DRC focus on providing services to a specific vulnerable group or targeted towards an outcome. Local Congolese organizations and village leaders have emphasized the need to understand and respond to the multiple effects of different types of trauma, and not limit the focus of interventions to individuals that have experienced specific acts of violence [5].

Conceptual framework

A majority of studies in conflict settings focus on individual experiences and outcomes of violence and displacement. Yet, individuals develop in and live in a social environment that includes the family and community. Communities that have experienced conflict describe the family and social impact of violence and daily stress as important [5-7] in addition to individual experiences and outcomes. Using Bronfenbrenner's social ecological model of human development as a conceptual framework, this study focuses on the family and social impact of violence amongst conflict-affected adult women living in rural eastern DRC. Bronfenbrenner first proposed an ecological model of development in the 1970's. This model emphasized two key concepts: (1) individuals are nested within a multi-level environment; and (2) these levels interact to produce outcomes [77]. Bronfenbrenner proposed a four-level framework of factors that affect the individual: (1) the

microsystem, which describes the immediate setting (e.g., family, home, peer groups) and interpersonal relationships; (2) the mesosystem includes links between two or more settings that relate to the individual; (3) the exosystem, which includes linkages and processes between two or more settings including societal structures; and (4) the macrosystem (i.e., the cultural, historical and political context) [77-79]. Bronfenbrenner's ecological model has been adapted for use with a range of situations including GBV [80]. The model accounts for the multi-level risks (conflict and non-conflict related) and outcomes associated with gender-based violence and how each of these factors interacts. This study applies the ecological framework to the study of conflict and non-conflict related trauma experiences. The study does not attempt to describe completely all factors in the conceptual framework. Instead, the framework provides a foundation to understand the multiple risks of conflict and non-conflict related trauma on family relationships and social interaction.

Dissertation Outline

This dissertation focuses on the family relationships and social interaction associated with conflict and non-conflict related traumatic experiences amongst adult women participating in the impact evaluation of PFP. The study takes place in Walungu Territory, South Kivu Province, eastern DRC – a region that has experienced high levels of conflict and its associated social, health and economic impact. Chapter 2 provides detailed information on the design of the parent study in which this dissertation research is embedded. A brief overview of the study sample, research methods and key variables for each of the three research aims is provided. Detailed information on methods for each research aim is provided in Chapters 3, 4 and 5. Chapter 3 focuses on the relationship between past exposure to conflict-related trauma on social interaction. Chapter 4 examines the relationship between conflict-related trauma, family rejection and mental health to

understand how family rejection influences mental health outcomes. Chapter 5 explores, more deeply, the role of family relationships in a post-conflict setting through a focus on IPV perpetration and victimization. The study explores, in detail, IPV perpetration and victimization, consequences, and community-driven solutions for IPV. The study includes both men and women who reported perpetrating or experiencing IPV, respectively, in their marital relationship. The concluding chapter summarizes and interprets the findings from the dissertation research and provides recommendations for future use of the data in programs and research.

Figure 1.1: Map of Democratic Republic of Congo [81]



Figure 1.2: Map of Eastern Democratic Republic of Congo [82]

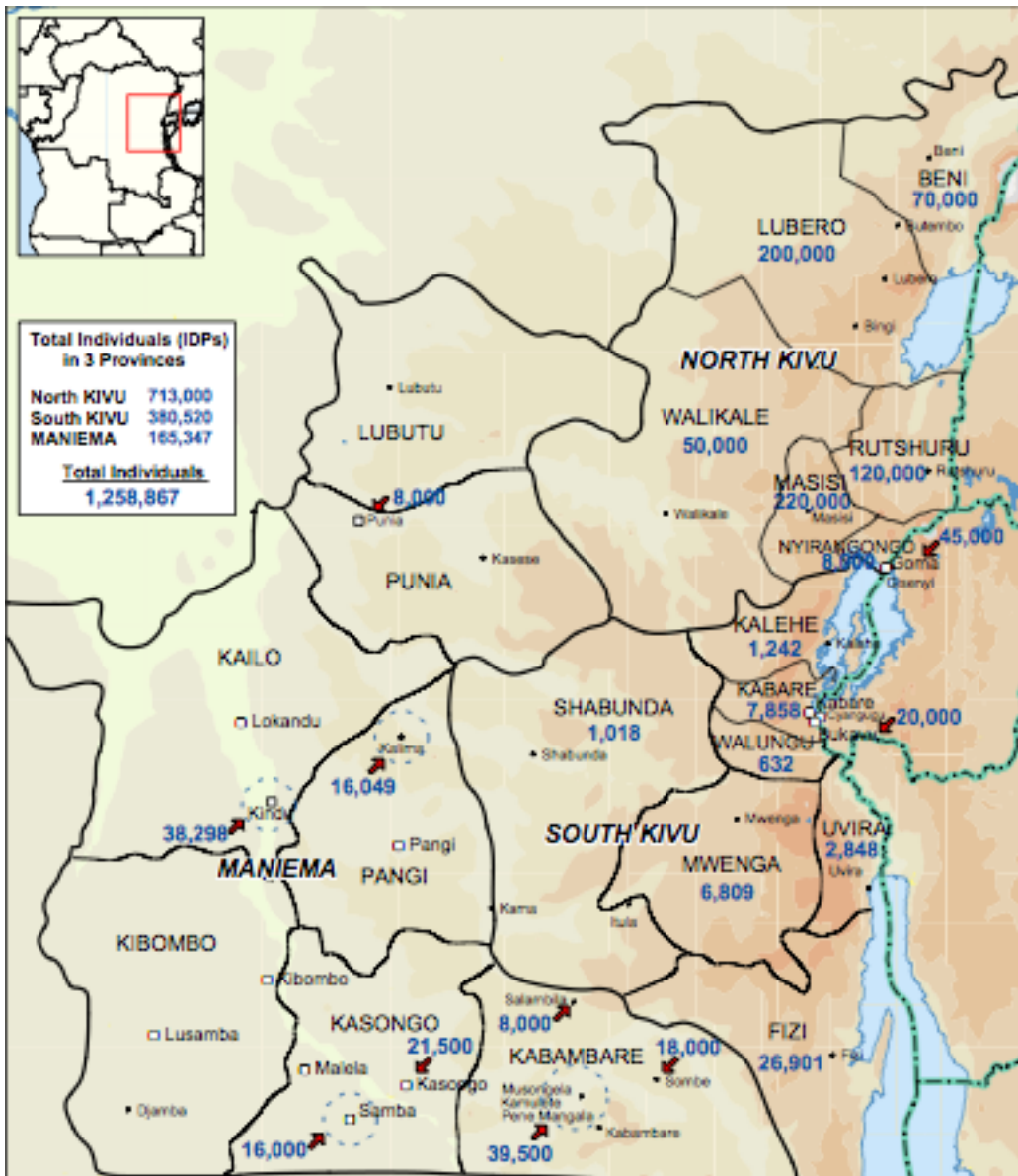
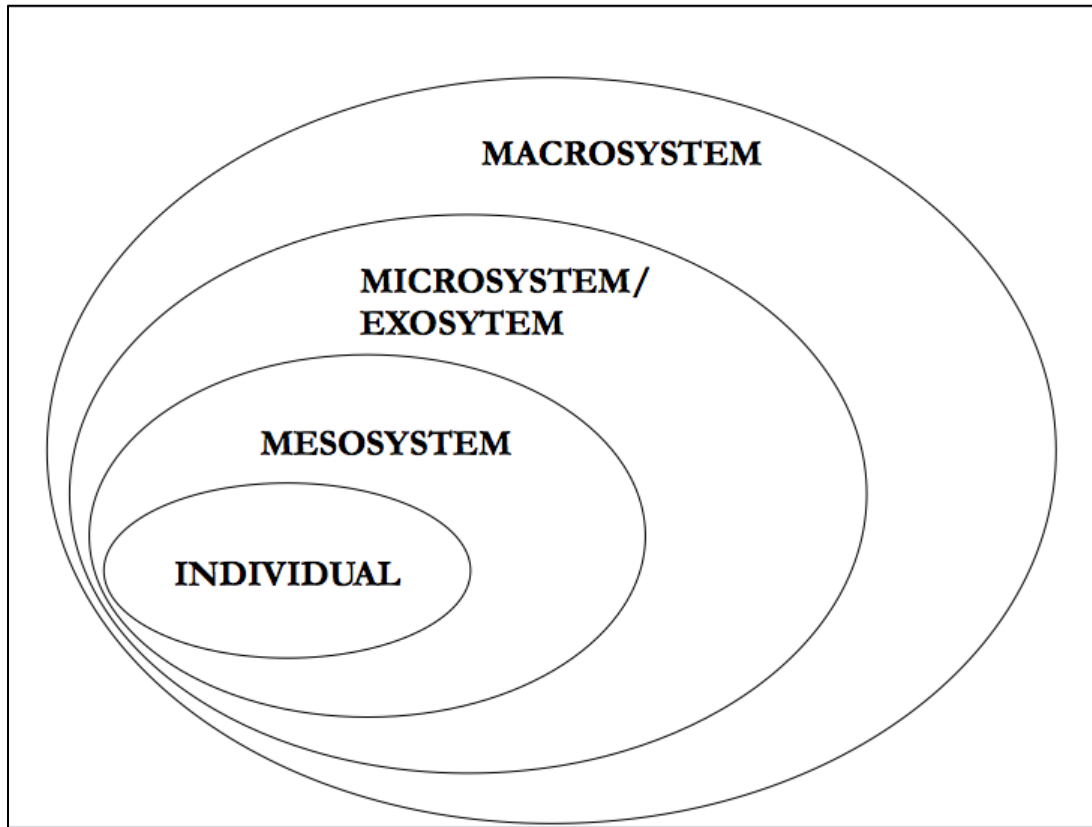


Figure 1.3: Betancourt and Khan's ecological model, adapted from Bronfenbrenner's ecological model for child development [78]



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Chapter 2: Methods

Mixed Methods approach

Mixed methods research “utilizes the strengths of two or more approaches by combining them in one study” [1]. Greene et al (as presented by Onwuegbuzie et al) gave five reasons for applying mixed methods; three apply to this study: “complementarity (i.e., seeking elaboration), development (i.e., using the findings from one method to help inform the other method); and expansion (i.e., seeking to expand the breadth and range of inquiry by using different methods for different inquiry components)” [1]. This mixed methods study applied a sequential, explanatory design [2] where information collected during the initial quantitative component informed the purposive sampling of male and female participants in the qualitative study. While a sequential explanatory design generally weights quantitative data more heavily than qualitative data, this study weighted results from each component of the study equally to expand the understanding of rural, Congolese adult women’s experience of violence and the associated multi-level outcomes.

This study employed mixed methods to address three related aims on the effects of violence and trauma on family relationships and community interaction. Each of the aims focused on a different aspect of violence and relationships; together they provided insight into the multiple types of trauma that rural Congolese women have experienced during prolonged conflict and how these related to mental health, family rejection and social interaction outcomes. The first aim provided information on how exposure to different and multiple conflict-related traumatic events affects social interaction, independent of mental health. The second aim of this study focused the relationship between conflict-related trauma and family rejection relate to poor mental health. The third aim explores, more deeply, the role of family relationships in a post-conflict setting through a focus on IPV

perpetration and victimization. The study explores, in detail, IPV perpetration and victimization, consequences, and community-driven solutions for IPV. Therefore, each aim of this study complemented the other aims. Taken together, these three studies complemented each other and expanded on prior research by providing insight into the multiple, varied factors and dynamics in the household and village that affect individual level outcomes. This multi-level view of risks and outcomes examined ways in which conflict and non-conflict related trauma increased risk for negative outcomes, and opportunities to protect against those risks and outcomes.

Study site

South Kivu Province is located in eastern DRC and bordered by Rwanda and Burundi. It is characterized with high levels of displacement, unemployment and looting. Eight territories are included in the Province (population 1.5 million) of which Walungu is one of the higher density territories. Three territories of South Kivu (Idjwi, Kabare, Walungu), or 9% of the Province land, is home to 50% of the population [3] Various military and rebel groups inhabit the forests surrounding Walungu Territory; they also use it as a base to mine minerals (gold, coltan, cassiterite) and loot and frighten local populations. The area has been affected by multiple conflicts over the past 16 years and even though the area is considered secure at this time, the long-term consequences of prolonged conflict are significant. Infrastructure including road development, education and health systems are in many areas non-existent and, where available, are often of poor quality because of limited capacity, absences of payment for workforce, and lack of materials essential for services.

Walungu Territory is divided into two chiefdoms: Kaziba and Ngweshe. This study was conducted in the Ngweshe chiefdom. The Ngweshe tribal chiefdom includes 16 counties: Burhale, Ciherano, Ikoma, Irongo, Izege, Kamanyola, Kamisimbi, Kaniola,

Karhongo, Lubona, Luciga, Lurhala, Mulamba, Mushinga, Tubimbi and Walungu. The chiefdom is home to about 700,000 people and is located between 40-80 km from Bukavu, the capital of South Kivu Province. The primary forms of employment in the chiefdom are agriculture and raising livestock [3]. A majority of the population residing in Walungu Territory are Shi people. The predominant languages spoken are Mashi and Swahili although other dialects are used as well.

Pigs for Peace, the parent study

In 2010 (December 26, 2010), an NIH/NIMHD-funded randomized, community trial was initiated in ten rural villages of Walungu Territory to evaluate the effectiveness of a livestock microfinance program, Pigs for Peace (PFP), on health, economic and community-level outcomes. This dissertation research was embedded in the impact evaluation of PFP (i.e., the parent study). PFP is a Congolese-US collaboration between Johns Hopkins University School of Nursing (PI: Dr. Nancy Glass) and Programme d'Appui aux Initiatives Economiques (PAIDEK). PAIDEK is a Congolese microfinance organization working throughout eastern DRC. Prior to initiating the parent study, a two-year, PFP demonstration project (2008-2010) was implemented in 22 villages (about 20 km outside of Bukavu) [4]. Therefore, this study built upon the existing relationships with local partners and villagers. Involvement and decision making was shared with local partners to ensure the quality and applicability of the study design, quantitative and qualitative questionnaires, methods of implementation of the intervention and interpretation of the study findings. This collaborative, participatory action model was critical to conducting sensitive and culturally acceptable research.

PFP is a livestock microfinance program where interested and committed individuals receive a 2 – 4 month old female pig after they have participated in a training program and

built a pigpen for their pig and compost to deposit waste from the pig to be used to fertilize their crops. The PFP model used pigs as a loan because animals are an important source of economic well-being in rural villages; pigs are traditionally raised in DRC, as there is no cultural taboo; both women and men can, culturally, be in charge of caring for the pig and making decisions about breeding and selling the pigs. Pigs reproduce frequently (2 times a year) and generally produce 6-12 piglets at each breeding; and pigs consume a wide range of foods (e.g., sweet potato, bananas, avocados, corn, etc.) that are locally available. Members of PFP were responsible for caring for the pig including providing adequate nutrition, health care and supervision with support from the trained Congolese PFP Research and Microfinance agents (i.e., PFP agents) and a veterinarian. PFP members were invited to group meetings and were visited at home on average twice a month by the PFP agents to assess progress and collaborate on finding solutions to any challenges (e.g. locating a male pig for breeding, answering questions about food rich in nutrients) with their pig. The PFP agents identified a village member who was participating in PFP and was respected by the community to provide ongoing support to the PFP members in their village as well as notifying the agent if there were any issues that need to be addressed immediately in the project. Once the pigs give birth, approximately 11-12 months after receiving the female pig loan, the PFP member repaid their pig loan to PFP project in the form of 2 female piglets, one pig to repay the loan and one pig to pay the interest on the loan. These repayment pigs were then provided to the delayed control group members in the same village.

Village selection

In 2011, ten villages of Walungu Territory were selected for participation in the PFP impact evaluation based on: 1) feasibility of delivering an intervention over a wide geographic area; 2) permission to work in the villages and commitment to the intervention

and study by traditional chiefs and administrators; and 3) findings from village-level assessments conducted by our team with a focus on administrative data and semi-structured interviews with key stakeholders (e.g. nurses, teachers, religious leaders, traditional chiefs, territory administrators and community group leaders) to understand village resources, development-related needs, security concerns and existence of other microfinance interventions in the area. The villages were targeted based on their economic need and experience of violence during the prolonged conflicts. PFP agents visited each of the villages to present the program and research to traditional and administrative leaders. Following their approval, village assessments were conducted in each of the 10 villages.

Study sample

Following completion of the village assessments, local village leaders and the PFP agents invited villagers to participatory meetings to introduce the PFP program and the associated research component and answer questions from village members. At the initial meeting, PFP agents explained the research component including the process by which eligible participants would be randomly assigned to intervention or delayed control groups. All eligible participants were told that participation in the research was voluntary, that each participant would be asked to provide verbal informed consent to confirm their understanding of the study prior to any data collection, and that participation required completion of 4 interviews (i.e. at baseline and approximately every 6 months after baseline) over an 18 month period. At the end of the initial meeting, PFP agents invited interested village members to return on the following day to enroll in the project and research study. The following day, interested and eligible individuals (men and women) attended a second village meeting where eligible PFP participants were randomly chosen. Individuals were eligible to participate in PFP if they were 16 years and older, expressed a commitment and

understanding of microfinance principles (e.g., repayment of loan), were permanent residents of the village and were a responsible individuals in the household (e.g., married 16 years old, parent, widow, orphan head of household). A household was defined as one family unit. Therefore, if multiple families, (e.g., siblings and their children) lived in the same enclosure, an adult male or female from each of the 2 families were eligible to participate. The multiple wives of a man in a polygamous relationship were also eligible to participate.

At the second village meeting, all eligible individuals received a coupon with their name and ID code on it. A duplicate coupon with the same information was folded and placed in a box in front of the villagers. Once all eligible individuals had received a coupon, a child from the village was chosen to blindly select coupons from the box. Within each village, the team planned to select and randomize 66 households to intervention and delayed control groups. . In 8 of the 10 villages, more than 66 eligible participants attended the second meeting, therefore, the team decided to form a second delayed control group, so as not to discourage interest and commitment by village members in the project. Members of the two delayed control groups participated in the training program and received their pigs between 12 to 18 months post-baseline when intervention group members reimbursed their loan.

Questionnaire development and data collection

The baseline questionnaire was developed jointly between Congolese-US partners with an emphasis on using existing, validated instruments and data from prior research in the DRC by this research team [4, 5]. The questionnaire included sections on socio-demographics, economic and food security, health care access, physical and mental health, reproductive health, exposure to conflict-related traumatic events, intimate partner violence, drug and alcohol use, household decision-making, and family and community relationships.

More detailed information on the sections of the questionnaire is included in subsequent Chapters.

PFP agents with support from trained interns completed all data collection using a tablet-administered study questionnaire. Prior to implementing the study questionnaire, translation and back-translation from English to French was conducted with the team as well as translation to local languages Swahili and Mashi. The questionnaire was then pilot-tested four different times with men and women in the PFP demonstration villages. The first two pilot tests of the questionnaire focused on content including comprehension, acceptability and translation. Six PFP agents conducted the pilot interview and maintained notes where the participant had difficulty understanding questions or were uncomfortable with a question. At the end of each interview, PFP agents asked the respondent to provide feedback on the interview procedures, content and acceptability of the questionnaire. The team also identified phrases in local languages (Swahili, Mashi) that corresponded with the mental health symptoms. The following day, the Johns Hopkins University and PAIDEK teams met to gather feedback from the pilot interview. Overall, participants in the pilot interview reported comfort with the questionnaire, although the amount of time spent on the interview was long. The team reduced the length of the questionnaire and corrected errors to translation. The second two pilot tests involved the use of the tablet to ensure acceptability by participants and make corrections to programming as needed. Participants in the second pilot test with the tablet reported feeling more comfortable with the tablet-based interview than paper-based interview.

Six full-time PFP agents and ten part-time interviewers, both male and female, completed 5 days of training that included human subject research training, safety and security of team members, use of tablets for data collection, data management and quality.

Each team member completed mock interviews within the team and pilot interviews in the PFP demonstration villages with debriefing with all team members. Experience during mock interviews and prior work by the research team in rural communities gave [4-6] evidence that rural villagers (men and women) felt comfortable being interviewed by either male or female team members. A second “booster” training was held in August 2012 with all team members prior to initiation of Phase two of fieldwork.

Baseline data collection took place after randomization, but prior to initiation of the intervention; i.e. prior to training of PFP village participants. To address logistical challenges of conducting research in areas with limited infrastructure and to reduce time between participation in the interview and distribution of pigs to intervention groups, baseline data collection took place in two phases. Phase I baseline data collection took place between May and June 2012 in 5 villages (Cagombe, Cize, Izege, Lurhala, Karherwa). Between August and September 2012, Phase II baseline data collection took place in the following five villages (Cahi, Irhaga, Kahembari, Kamisimbi, Karhagala). As expected, a few participants (e.g. participant hospitalized, participant had to leave village to participate in a marriage) were unable to participate in the interview during the two-month baseline data collection period in their village. As a result, the final baseline interviews were completed in November 2012.

The Johns Hopkins Medicine Institutional Review Board (IRB) approved this study. As there is no local IRB in South Kivu province, a committee of respected Congolese educators with faculty appointments or administrative roles at the Universite Catholique at Bukavu reviewed and approved this study, including the risks and benefits to participants. Pilot and study interviews were initiated only after receiving oral, voluntary informed consent. Study identification codes and names were recorded during the interview; all data recorded through the tablet-based program was backed-up and uploaded to a HIPAA

approved and password-protected server managed by the study team, and then names were centrally removed from the dataset and stored in a separate file. As interviews were conducted during the day when members would be earning their daily income, compensation for the approximately 90 minutes spent away from work (e.g., agriculture, market) was provided as per local rates, approximately 1.50 USD. All interviews took place in a private setting of the respondent's choice, most often in their home.

Brief overview of study sample for research aim one and key variables

Data collection for research aim 1 was incorporated and pilot tested in the parent study prior to baseline. The study sample included all female participants in the baseline data collection (N=701) to examine how experience of war-related trauma affects social interaction, after controlling for mental health (PTSD and depression), age and marital status. Social interaction was examined in two ways: (1) family/community members visiting women's homes and (2) women visiting family/community members in their home. Women reported the frequency of family/community members visiting their home in the past thirty days (never, rarely, sometimes, often). Participants also reported the frequency that they visited family/community members in their home in the past thirty days (never, rarely, sometimes, often). The exposure to trauma events section of the questionnaire was adapted from the Harvard Trauma Questionnaire (HTQ) [7]. Experience of war-related trauma was measured as exposure to 18 different types of traumatizing events in the past ten years (e.g., abduction, sexual violence, witnessed death of friends or family members, tortured). Analysis involved looking at trauma as a continuous variable and grouped by categories, following a model first used by Mollica et al [8] in a study with Cambodian refugees.

Shortened versions of the HTQ and Hopkins Symptom Checklist (HSCL) were used to collect information on frequency of experiencing post-traumatic symptoms (past 7 days)

and symptoms of depression (past month). Analysis of quantitative data was conducted using STATA/IC 11.2 (StataCorp). Descriptive analysis included mean and standard deviation for continuous variables and counts and percentages for categorical variables. Frequencies of covariates and dependent variables were calculated. For the first research question, bivariate and multivariate linear regression was performed with each of the continuous and grouped trauma categories. For the second research question, symptoms of PTSD and depression were included in the two multivariate linear regression models as continuous covariates.

Brief overview of study sample for research aim two and key variables

Data collection for research aim 2 was incorporated in baseline data collection for the parent study. The study sample included women, 16 years and older, who experienced at least one type of conflict-related trauma and responded to questions on family rejection (N=315). Questions on family rejection were developed through qualitative work with survivors of sexual violence and community members in Walungu Territory in 2010 [5]. Family rejection was defined broadly, as per results from the qualitative study, that indicated that women experience family rejection in multiple ways including being forced out of their home; neglect while living in the family home; lack of family interaction; loss of financial support from family; and lack of support for children (whether or not they were born as a result of the assault). Not all female participants responded to the family rejection question. For those participating in interviews between May and June 2012, only women reporting sexual assault were asked to additionally answer the module on family rejection. In July 2012, the family rejection module was revised to account for feedback from local communities who described multiple different types of trauma affecting relationships in the family. Therefore, among women who participated in the baseline survey between July and

November 2012, those who reported any (i.e. one or more) type of conflict-related trauma experience were asked to answer the module on family rejection.

Exposure to trauma was incorporated as a covariate in two ways: as a continuous variable (i.e., exposure to between 1-18 different events) and as categories of trauma following a model used by Mollica et al [8] in a study with Cambodian refugees. Measures of PTSD and depression were collected using validated instruments, the HTQ and the HSCL, respectively [7]. Data analysis involved bivariate logistic regression to examine the relationship between exposure to conflict-related trauma and family rejection (as the dependent variable). Multiple linear regressions were used to test the second hypothesis that the experience of family rejection would more strongly predict PTSD and depression outcomes than exposure to different conflict-related traumas.

Brief overview of research aim three

The third aim for this qualitative study was to explore, in-depth with rural residents, IPV perpetration and victimization; individual and family consequences of IPV perpetration and victimization; and identify community-driven solutions to barriers to IPV prevention and response in rural South Kivu province, DRC. IPV was a common experience by women in the parent study and examining how the perpetration and victimization of IPV influences health, economic and social interactions for families who have experienced prolonged conflict and multiple forms of trauma is important. A focus on IPV, coupled with a better understanding of family rejection and social interaction, provided key information to improve understanding of the multi-level factors and dynamics that affect health, economic and social outcomes in post-conflict settings and inform interventions that aim to address one or multiple needs of conflict-affected populations.

This component of the study was designed using grounded theory methods described first by Strauss and Glaser and later adapted by Charmaz [9, 10]. Grounded theory involves an iterative process of data collection and analysis. Participants in the study sample included adult men and women participating in the second delayed control group of the parent study and reported the experience or perpetration of IPV. Although the eligible participants in each village were decided from baseline data, the final sample size was determined based on when data reach saturation as indicated by the research team noting no new information was being provided during interviews. The qualitative study focused on three of the PFP villages (Cagombe, Izege, Kahembari) where reports of IPV were higher in the parent study amongst the second delayed control group. In total, 18 individuals (13 women, 5 men) participated in the qualitative component of the study. Participants provided in-depth information on situations that increase risk for IPV; rationale for the use of IPV; individual, family and community level outcomes related to IPV; and family and community-based opportunities for increasing safety of women. The daily debriefing with each PFP agent conducting the interviews and review of the interview transcripts helped guide this decision to revise questions as needed and noted saturation of data. In addition, debriefing with PFP agents helped provide an understanding of key themes and opportunities for follow-up questions in future interviews with men and women.

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Chapter 3: Social interaction in the aftermath of conflict-related trauma experiences amongst women in Walungu Territory, Democratic Republic of Congo (Paper 1)

Abstract

Background: In conflict-affected countries, local people are exposed to multiple and different conflict-related traumas in addition to economic instability and limited social services. In addition to the poor health and economic outcomes in individuals, exposure to conflict-related trauma may impact social interaction due to fear, stigma, poverty and loss of esteem. The aim of this study was to understand how past exposure to different and multiple conflict-related traumatic events affects current social interaction among adult women living in South Kivu Province, eastern Democratic Republic of Congo.

Method: Adult female participants from ten rural villages of Walungu Territory participated in baseline data collection of a livestock based microfinance program, Pigs for Peace. They provided information on past month social interaction, symptoms of PTSD and depression in the past month and exposure to conflict-related trauma in the past ten years (N=701). The two main outcomes were frequency of (1) family and community members visiting women's homes and (2) women visiting family/community members in their home. Bivariate and multivariable linear regression was used to understand relationships between multiple and grouped trauma experiences, PTSD, depression and social interaction.

Results: The majority of women (51.6%) reported rarely or never visiting family and community members or having family and community members visit the woman's home (54.9%). Social interaction outcomes were significantly associated with exposure to increased trauma and certain grouped trauma experiences in bivariate analysis. In the multivariate model, having increased symptoms of PTSD was significantly associated with having fewer visitors in woman's home and fewer visits to the homes of family and community members. Material deprivation was significantly associated with fewer visits in the woman's home. Exposure to certain conflict-related traumas, but not material deprivation, was significantly associated with fewer visits to the homes of family and community members.

Conclusion: Reduced social interaction in villages affected by conflict is related to exposure to multiple and different types of trauma experiences and PTSD. A better understanding of the social effects of conflict and post-conflict trauma on individuals and local communities is necessary as to rebuild and strengthen local communities.

Introduction

Armed conflict affects civilian populations directly (e.g., increasing mortality, morbidity, injury) and indirectly (e.g., through reduced health and social services, increased disease transmission) with the health and development consequences extending long beyond the duration of fighting [1-3]. Civilian populations in conflict settings report significant exposure to violent events (e.g., witnessing killings, beatings, torture), separation from family and community; loss of material wealth, and loss of basic needs (e.g., food, water, shelter, access to health care). Exposure to at least one conflict-related traumatic event ranges from 59% to 92% in cross-sectional studies with conflict-affected populations from Algeria, Cambodia, Sudan, Ethiopia and Palestine [4, 5]. In the eastern Democratic Republic of Congo (DRC), adult men and women reported exposure to physical violence (women: 17.2%; men: 34.5%), movement violations such as abduction or forced displacement (women: 7.8%, men: 12.0%), and property violations (women: 23.6%; men: 30.7%) over a 16-year period of war (1994-2010) [6].

Armed conflict differentially affects men and women with women bearing a larger burden of the indirect and long-term effects of conflict as compared to men likely resulting in differences in vulnerabilities to health, economic and social outcomes [7]. In addition to exposure to violence and displacement, women may have access to fewer resources (e.g. property, material, financial, and political) and health and social services while shouldering an increased responsibility for care of family members [8]. A large body of research on the relationship between exposure to trauma and mental health provides evidence for a consistent and often dose-response relationship between trauma exposure and symptoms related to post traumatic stress disorder (PTSD), depression and anxiety [9-12]. Certain types of conflict trauma (e.g., ill health without medical care, being close to death, forced isolation)

have been associated with symptoms of PTSD [11, 13-16]. However, it is also likely that exposure to different and multiple types of traumatic events results in reduced social interaction by survivors with families and communities in addition to influences on mental health status. In fact, communities in Eastern DRC emphasize the need to understand and facilitate social reintegration in communities that have experienced conflict-related violence and trauma and rebuild traditional community support structures [17]. Village leaders and members emphasized the widespread experience of trauma and near universal health, social and economic consequences [18, 19]. Community members explained that the effects of trauma are not limited to a direct experience of sexual assault or other form of violence. Rather, the prolonged conflict has resulted in widespread feelings of fault, fear of additional experiences of violent acts, loss of productivity, and loss of esteem and trust of others as a result of the stigma associated with a family member's trauma experiences [18]. In settings like the DRC where individual identity is framed around family and community relationships and communal well-being [20], it is important to understand the social impact of exposure to trauma in a conflict-affected setting.

As a result of conflict related violence and other trauma exposure, women may experience changes in their level of social interaction in both their families and communities. For example, sexual violence has been used as a weapon against women and girls in conflicts throughout the world including Côte d'Ivoire, Burma, Yugoslavia, Rwanda and the DRC [21-24] and often includes the use of brutal methods (e.g., gang rape, forcing family members to rape or hold the victim, mutilation of body) to increase the negative health, economic and social effects of the violence [21, 24, 25]. A cross-sectional study conducted in 2005 in 2 large camps for internally displaced persons in Uganda found that 28.6% of women accessing emergency reproductive health care, psychological support and/or surgical

services had survived sexual violence during the war [26]. A recent population-based survey in the accessible territories of North and South Kivu Province and Ituri District in DRC documented 39.7% (CI: 32.2-47.2%) of women reporting sexual violence, with 74.3% (CI: 66.2-82.5%) of these survivors reporting sexual violence associated with the conflict [6]. Due to the public nature (e.g. women raped in front of husbands and children in home, women raped in public places in villages) of conflict-related sexual violence, it remains difficult to hide from family members and others in the community, and therefore, can result in survivors being rejected by their family and community because of the public shame and stigma associated with sexual violence. Sexual violence-related stigma arises for a range of reasons including local customs, which do not permit women to have sexual relations outside of marriage even when sexual relation is forced; assumptions of her willingness to be assaulted or that she is on friendly terms with her attackers; health complications including fistula, STI, HIV (or fear of HIV) [18, 27-31]. Stigma and fear of stigma due to rape can increase feelings of shame and humiliation [29]; encourage women to hide the assault from family and friends [28]; limit disclosure to access needed services [32]; and reduce survivors social interactions with community members [18]. Women survivors of conflict-related sexual assault have described their experience of stigma as being as traumatizing as the rape [28].

While this study focuses on social interactions (defined for this study as making and receiving visits to/from family members, neighbors and others in the villages and surrounding areas) by women who have survived conflict related violence and trauma, a brief introduction to research on stigma may provide insight into how certain types of experiences influence social interaction. Erving Goffman (1963) defined stigma as an “attribute that was deeply discrediting” and involved a “relationship between an attribute

and stereotype” [33]. Link and Phelan [34] proposed a broader and more comprehensive definition of stigma that accounts for both the individual and social factors that produce and maintain stigma includes the interaction of five components: (1) identifying and labeling the differences between people; (2) distinguishing people by their undesirable characteristics (i.e., stereotyping); (3) separating labeled individuals from others; (4) discriminating against labeled individuals thereby ensuring their loss of status; and (5) exercising social, cultural, economic and political power over labeled individuals. Research supports the application of stigma to a number of health, economic and social issues including HIV [35] and mental illness [35, 36]; poor quality of life [37]; less income [38]; unemployment [34, 38]; reduced self-esteem [34]; limited access to needed care [39], and less family and community support [40].

The three forms of stigma that are examined most widely include experienced stigma (i.e., discrimination), belief that one will be discriminated against (i.e., perceived stigma) and negative beliefs, views and feelings due to membership in a stigmatized group (i.e., internalized stigma) [38, 41]. Each of these forms of stigma may occur independently or at the same time as other forms of stigma; influence social, health and economic outcomes; and may require different strategies to reduce their effect. In Cameroon, people living with HIV/AIDS (PLHA) reported being the subject of gossip and being verbally insulted, but they were not excluded from family or community activities (e.g., religious activities, social gatherings), as a result, feelings of shame, guilt and blame were common amongst PLHA [42]. Another study compared how labeling and beliefs about being devalued and discriminated against affects social interaction and coping mechanisms differed amongst individuals with a history of psychiatric illness who were in or recently completed treatment, individuals who had symptoms but had not been diagnosed with psychiatric illness, and

individuals without psychiatric illness. Patients with psychiatric illness reported fearing devaluation and discrimination in the community and therefore were more likely to rely on household members to assist with important tasks than reach out for support in the community. The fear of stigma, and not mental health, was associated having less community based support and increased social withdrawal [40]. Other studies have also identified that feeling like a stigmatized person and fearing discrimination, apart from experienced stigma, leads to negative outcomes [41]. These studies show the importance of each component of stigma in producing negative health, economic and social outcomes. These types of stigma may be relevant for women that have experienced multiple and different types of traumatic events during war.

Most research on stigma has focused on individual experience and outcomes. Stigma is also a social process developing from moral, structural and cultural processes that place value on certain characteristics and behaviors [35, 43]. The moral aspect of stigma directly places the causes of stigma in the social and individual worlds. This was illustrated in a study on HIV/AIDS, schizophrenia and moral standing in China. The authors showed how people felt obliged to uphold interpersonal and intrapersonal obligations in order to maintain their inclusion in their local, social world, and how fears of or actual moral contamination (e.g., association with a labeled person) can result in social death or social exclusion [35]. In the case of adult women who have endured on-going conflict and trauma, as in this study, the community may judge certain trauma exposures as immoral. For example, survivors of sexual violence are sometimes thought to have been willing participants in their rape, thus violating local customs that prohibit adultery and resulting in stigma and rejection by family and community members [18, 28]. Other trauma exposures such as the death of family members, abduction, or participation in combat may also result

in community moral judgment. Building on this prior research and local priorities, the overall goal of this study is to understand how past exposure to different and multiple conflict-related traumatic events (e.g., sexual assault, psychological trauma, combat) affects current social interactions amongst adult women living in rural Eastern DRC.

Methods

Overview and Setting of Study: This study explores the independent relationship between past exposures to different types of trauma on current social interaction amongst women living in Walungu Territory, located in South Kivu Province in eastern DRC. Specifically, we examine two research questions: (1) is there a direct relationship between past exposure to different and multiple conflict-related traumatic events and social interaction?; and (2) does the relationship between exposure to trauma and social interaction remain after accounting for current mental health outcomes (e.g. symptoms consistent with PTSD and depression)?

Residents of rural villages in South Kivu province have experienced high levels of violence, pillaging and displacement for more than 16 years. Where once the rural areas were places of wealth in terms of property, animals and agriculture, today many rural residents lack access to land, tools and quality seeds to work the land and animals to raise, breed and sell and have limited access to credit or other social service. Production of food in Eastern DRC is limited as a result of livestock being stolen or killed during the conflict and poor soil quality due to over exploitation and over population [44]. South Kivu province shares an international border with Rwanda and Burundi. Three territories of South Kivu (Idjwi, Kabare, Walungu), or 9% of the province land, is home to 50% of the population [44]. Various military and rebel groups inhabit the forests surrounding the territory; they have used it as a base to mine minerals (gold, coltan, cassiterite) and loot and frighten local populations. Walungu Territory is located between 40 and 80km from Bukavu, the capital of

South Kivu Province. This study takes place in the Ngweshe chiefdom of Walungu, which includes 16 counties and is home to about 700,000 people.

Study Intervention: The study is based on baseline data collected as part of an NIH/NIMHD funded randomized community trial of Pigs for Peace (PFP), a Congolese-led livestock microfinance program implemented in Walungu Territory, DRC. The PFP impact evaluation is a partnership between Programme d'Appui aux Initiatives Economiques (PAIDEK), a Congolese microfinance organization working in Eastern DRC, and Johns Hopkins University School of Nursing. PFP is designed to provide village-based livestock credit as a community led initiative to improve health and economic stability of families and improve relationships between family and village members. The project emphasizes multiple levels – individual, family and village well-being – to address the multiple social, health and economic effects of conflict and trauma on local communities. Pigs were selected for the livestock microfinance program because animals are an important source of economic well-being in rural villages, pigs are traditionally raised in DRC, as there is no cultural taboo; both men and women can, culturally, be in charge of caring for the pig and making decisions about breeding and selling; pigs reproduce frequently and generally produce 6-12 piglets at each breeding; and pigs consume a wide range of foods (e.g., sweet potato, bananas, avocados, etc.) that are locally available. The people who live in this region have commonly raise livestock (e.g. pigs, cows, chickens, goats) and cultivated the land. Members of PFP in targeted villages complete a village based training program by trained Congolese PFP Research and Microfinance agents (i.e., PFP agents) and then commit to building a pigpen and compost meeting project regulations and accepting a loan of a female piglet at 2-4 months of age, and raising the pig by meeting nutrition and health care needs of the pig with ongoing support of the skilled PFP agents. When the loan pig gives birth, the

PFP member repays their pig loan with one female piglet and then pays interest on the loan by providing a second piglet to the project. These offspring are then given to other PFP members of the village as loans. The participant and family own the remaining offspring and original loan pig, as their loan is paid in full [30].

Procedures: The impact evaluation of PFP includes ten villages of Walungu Territory (hereafter referred to as the parent study). The 10 villages were selected based on operational feasibility, local commitment from the village chief and administrators and village-level assessments. Village assessments were conducted after the local leadership expressed an interest and commitment to the project. The assessment included collection of administrative data (basic health statistics, population size, economic stability) and key stakeholder interviews to understand village resources, development-related needs, security concerns and existence of other microfinance interventions in the area. Following the assessment, two community meetings were held in each village to introduce the project, answer questions and explain the research component of the livestock microfinance intervention. PFP agents introduced the study team, purpose, project design and principles, selection procedure and answered questions raised by village members. Interested and eligible households participated in a lottery during the second meeting, where participants placed their name cards in a box and a child from the village randomly selected households for the project. Eligibility for the study included adults (men and women, 16 years and older) who were permanent residents of the village and responsible individuals in the household (e.g., orphan head of household, widow). Only one member per household could participate where a household was limited to include the immediate family. Therefore, the multiple wives of a man in a polygamous relationship or multiple generations of one family could participate only if the different members were responsible for their own families. Selected

households were alternatively placed in the intervention and delayed control groups. Due to high level of interest in PFP and a desire not to turn away those with a commitment and need for such a project, a second delayed control group was included in the project. Members in the intervention group received their pigs after they completed the baseline interview, participated in a training program and constructed their pigpen and compost. Approximately 12 to 18 months post-baseline, members of the delayed control groups will also participate in a training program and construct pigpens/compost before receiving their pig loan, which are the offspring of the intervention group loans. This current analysis of the relationship between exposure to conflict related trauma events and social interaction is limited to data collected from female participants during the baseline interview of the PFP project.

Questionnaire development and variables: The study questionnaire was developed collaboratively from the team's prior qualitative and quantitative work in the study area [30]. All measures (demographic, economic stability, trauma exposure, health, community involvement, etc.) were adapted and tested to ensure that they were comprehensive, clear and acceptable to local community members. The questionnaire was developed in English, translated to French, and then to Swahili and Mashi. A tablet-based questionnaire and database was developed to collect, store, protect and transfer data for the PFP project. The tablet-based questionnaire and database was developed considering the number of interviews, logistical challenges, durability and portability of the tablet, ease of use, and facility to safely transfer and store data. The questionnaire on the tablet was designed to connect, through WiFi, to a web-based application to safely transfer completed questionnaire when field teams return to the study office as well as provide easy access to download updates or revisions to the study questionnaire. To ensure the security of the data,

information was stored in an encrypted file on the tablet. The questionnaire, including use of the tablet, was pilot tested four times with different adult rural men and women, each time contributing to strengthening the questionnaire and implementation strategy. This study focuses on a subset of the baseline data from the parent study and includes the measures detailed below:

Demographic variables: Participants reported their current age category: 15-19 years, 20-24 years, 25-34 years, 35-44 years, 45-60 years, over 60 years. Age was included in the model as a continuous variable with values between 0-4 where the reference group was 15-19 years and persons over 60 years were coded as four. Current marital status was included as a dichotomous variable as divorced/widowed/separated/abandoned/never married compared to married individuals. Age and marital status were included as covariates in the model.

Social interaction: The two main outcomes of this study are (1) family/community members visiting woman's homes and (2) women visiting family/community members in their home. Women reported the frequency of family/community members visiting their home in the past thirty days (never, rarely, sometimes, often). Participants also reported the frequency that they visited family/community members in their home in the past thirty days (never, rarely, sometimes, often). Both variables were considered continuous outcomes where a value of zero (i.e., reference group) was 'never' and three was 'often'.

Exposure to trauma: The exposure to trauma events section of the questionnaire was adapted from the Harvard Trauma Questionnaire (HTQ) [45]. Participants were asked about their exposure to 18 different traumatic events (e.g., combat, forced isolation) over the past 10 years. Exposure to trauma was analyzed in two ways: as a continuous variable (0 – 18 different traumatic events) and categories of trauma. The 18 different trauma events were grouped for analysis following the categories used in a study with Cambodian refugees [46]

with some modifications to account for different trauma exposures. The categories are as follows: (a) material deprivation (three events: lack of food or water, lack of shelter, and ill health without access to medical care); (b) warlike conditions (one event: combat situation); (c) bodily injury (four events: torture or witnessed torture, serious injury, rape or sexual assault, other type of sexual humiliation); (d) coercion (six events: imprisonment, brainwashing, lost or kidnapped, being close to death, forced isolation, forced separation from family members); and (e) violence to others (four events: unnatural death of family member or friend, murder of family member or friend, murder of stranger, witness rape or sexual abuse).

Mental health: A shortened 16-item version of Section 4 of the HTQ [45] was used to understand experience of post-traumatic stress symptoms (Table 3.1). Respondents reported the frequency of experiencing each individual symptom within the last 7 days: none, a little, quite a bit or extremely. The depression component of the Hopkins Symptom Checklist (HSCL) was used for reporting the experience of symptoms that bothered or distressed the respondent in the past one month (Table 3.2) [45]. Both the HTQ and HSCL have been used widely to understand symptoms of depression and PTSD with populations affected by conflict [11, 47-49]. An average symptom score for symptoms of depression and for PTSD was calculated. If less than 25% of the individual symptoms for a given scale were missing for an individual, the symptom score was computed as the average of the available items. When more than 25% of the symptoms were missing for an individual for a given scale (0.3% for depression; 4.2% for PTSD), the symptom score was not computed. After accounting for the missing symptom data, the final sample for depression and PTSD included 699 participants and 672 participants, respectively, out of 701 total women that

were included in this analysis. PTSD and depression were included as continuous covariates in the model.

Data collection: Baseline data collection took place after randomization and prior to initiation of program activities (training and distribution of pig loan to intervention group). Due to logistical challenges and a desire to smoothly transition members from participation in the baseline interview to involvement in PFP training and building of pigpens, baseline data collection was conducted in two phases consisting of 5 villages in each phase. The majority of phase one baseline interviews were completed between May and June 2012 and phase two between July and August 2012. Due to unavailability of participants during the selected baseline data collection phases, the few remaining baseline questionnaires in the 10 villages were completed at a later time with the last completed by November 2012.

Trained PFP agents and interviewers (males and females) conducted interviews with PFP participants. Training for fieldwork took place in April 2012 with a two-day refresher training prior to initiating the second phase of fieldwork in August 2012. All interviews were conducted in Swahili or Mashi, depending on the preference of the respondent. Baseline questionnaires took 60-120 minutes to complete. At the end of each week conducting fieldwork, field teams returned to Bukavu to the study office where tablets were connected to WiFi and data was synced with the server. As an added measure of security, after backup and synchronization of the data with the server, data were erased from each tablet.

Data analysis: Data was analyzed using Stata/IC 11.2 (StataCorp). Frequencies of covariates and dependent variables were calculated. For both social interaction outcomes, bivariate linear regression was performed with each of the six types of trauma examined. For the first research question, multivariable linear regression was conducted including age and marital status as covariates. Marital status and age were included to account for non-trauma

factors that may affect frequency of interaction in the villages. Depression and PTSD were included as covariates in the models for the second research question. For each multivariable linear regression model, the coefficient, standard error, standardized coefficient (β), and adjusted R^2 are reported.

Research Ethics: Ethics review and approval for the Impact Evaluation of PFP was obtained through the Johns Hopkins University School of Medicine. As there is no local IRB in South Kivu province, a committee of respected Congolese educators with faculty appointments or administrative roles at the Universite Catholique at Bukavu reviewed and approved of this study, risks and benefits to participants. Interviews were conducted one-on-one in a private setting where the respondent felt comfortable. Interviewers took informed, voluntary, oral consent prior to starting the questionnaire. All participants were informed of risks and benefits to participation; they could refuse participation without losing the benefits of being a PFP member. Names and identification codes were recorded in the interview to assist with data management; names were removed from the database for analysis. Data was securely stored in a password-protected file on a server with access limited to select members of the research team.

Results

Seven hundred and sixty-two women were randomly selected for the parent study. During baseline interviews, 42 women were excluded, because on careful review, it was determined that they did not meet the study eligibility criteria. Exclusion was most frequently related to not being a permanent resident of the 10 villages selected for the study or another household member was already enrolled in the study. Fifteen women (2%), although previously agreeing to participate in the study interview, decided not to participate at the time of the baseline interview. Of the 705 remaining women, four were excluded due to

incomplete data for this analysis. Therefore, this study includes 701 females, aged 16 years and older, that participated in baseline data collection for the parent study in 10 rural villages of Walungu Territory.

Demographic and mental health data: Between 43 and 87 women participated in the study interview in each of the ten villages (Table 3.3). The majority of participants were between 25-34 years (29.7%) and 45-60 years (26.5%). Most of the participants were currently married (70.8%). The average symptom score (possible range: 1 – 4) for PTSD was 2.21 (CI: 2.16, 2.26) and for depression, 1.84 (CI: 1.80, 1.87).

Experience of traumatic events: Almost all women (92.0%) reported at least one traumatic event in the past 10 years; on average, each woman experienced 3.96 different events (Table 3.4). The majority of participants reported material deprivation (79.5%) in the past ten years including 62.9% who had ill health without access to medical care, 56.6% who lacked food or water and 23.7% who lacked shelter. Almost half of participants reported experiencing warlike conditions (48.6%) and coercion (47.2%) in the past ten years. About one-third of participants reported bodily injury (29.2%) including 7.9% who experienced rape or sexual assault. Amongst the 51 women who reported conflict-related rape and were willing to provide detailed information on their rape, all of the perpetrators were male. One-third of the 51 women reported being raped more than once; perpetrators included the Interahamwe, a Rwandan Hutu rebel group (35), current or former members of the military (10), community members (6), members of rebel groups (2) and other unknown men (5).

Outcome – Social interaction: Social interaction, as defined by women's report of (1) family/community members visiting the woman's home and (2) the women's visits to the homes of family/community members captured frequency of visits in the past one month. The average score (possible range: 0 – 3) of family/community members visiting a woman's

home in the past one month was 1.16 (CI: 1.08, 1.24). About eleven percent of participants reported having family/community members visit their home *often* in the past one month (Table 3.5). Results of bivariate linear regression showed that women who reported more traumatic events (b: -0.03; CI: -0.06, -0.01) and violence to others (e.g., murder of family member or friend, witness rape or sexual abuse; b: -0.21; CI: -0.38, 0.05) were more like to report fewer visits in their home by family/community members (Table 3.6).

Most participants reported that they visited family/community members in their homes never (30.5%) or rarely (21.1%). The average score (possible range: 0 – 3) of visiting family/community members in their homes in the past one month was 1.29 (CI: 1.21, 1.36). Less frequently visiting family/community members in their homes was associated with increasing experience of traumatic events (b: -0.05; CI:-0.07,-0.03), warlike conditions (b: -0.26; CI:-0.41,- 0.11), violence to others (b: -0.22; CI:-0.38,-0.06), coercion (b=-0.34; CI:-0.49,-0.19) and bodily injury (b: -0.27; CI:-0.43,-0.10) in bivariate linear regression. The correlation between women's report of visiting family/community in their homes and women's report of family/community members visiting her home was 0.48 suggesting that there may be differences in determinants of social interaction.

Multivariable analysis: The multivariable model presented in Table 3.7 examines the relationship between family/community members visiting the woman's home and experience of trauma controlling for PTSD, depression, current age and current marital status. In each of the 6 models, PTSD symptoms is a significant predictor of women having visitors in their home in the past month, although the strength of the relationship varied depending on the type or number of traumatic experiences included in the model. The only traumatic experience that remained significantly associated with the women's report of family/community members visiting her home was material deprivation (b:-0.25; CI:-0.45,-

0.04), although the relationship was not as strong as that between PTSD symptoms and family/community members visiting the woman's home (b:-0.39; CI:-0.55, 0.22). All other traumatic event categories did not have a significant, independent relationship with visits to her home after controlling for age, marital status, depression and PTSD.

Table 3.8 presents the results from the multivariable linear regression between women's report of visiting family/community members in their homes in the past month and experience of trauma in the past 10 years controlling for current PTSD, depression, age and marital status. Increasing exposure to traumatic events (b: -0.05; CI:-0.07,-0.02) and PTSD (b: -0.18; CI:-0.35,-0.01) had a significant negative association with women visiting family/community members in their home. Exposure to any of the following traumatic events: warlike conditions (b: -0.26; CI:-0.42,-0.10), violence to others (b: -0.19; CI:-0.36,-0.01), coercion (b: -0.29; CI:-0.45,-0.12) and bodily trauma (b: -0.20; CI:-0.39,-0.02) had a significant, negative relationship with women visiting family/community members in their home after controlling for mental health symptoms. The relationship between women visiting family/community members in their home and PTSD symptoms was stronger than exposure to trauma in all of the models except the number of different traumatic events experienced by the participant. Having symptoms of depression was not independently, significantly associated with social interaction defined as family/community visiting the woman's home and women visiting family/community members in their home in the past month.

Discussion

This study examined women's report of social interaction defined as the frequency of family/community members visiting the woman's home and women visiting family/community members home in the past month. The majority of women (51.6%)

reported rarely (21.06%) or never (30.52%) or never visiting family/community members and the majority of women reported rarely (15.06%) or never (39.89%) having family/community members visit the woman's home. An experience of material deprivation (defined as experiencing at least one of the following in the past 10 years: ill health without access to medical care, lack of food or water, and lack of shelter) was associated with women's report of fewer visits by family/community members to the woman's home in the past month. Material deprivation was not significantly related to women visiting the homes of family/community members in the past month. Instead, less frequent visits to the homes of family/community members was significantly associated with number of traumatic events, warlike conditions, violence to others, coercion and bodily injury. The results indicate that there are distinct and significant relationships between social interaction and experience of different types and number of traumatic experiences. In all the models, experiencing increased symptoms characteristic of PTSD was associated with women's report of less frequent visitors in her home and visiting family/community members in the past month.

Material deprivation was prevalent in the 10 villages with almost 80% of women reporting a lack of material needs being met in the past 10 years. In a low-resource setting, conflict can further reduce limited infrastructure and severely limit health, social and economic resources that promote development. Most women in this study did not have paid (cash or kind) employment (60.2%); the majority of individuals were occupied with subsistence farming. Several studies in eastern DRC reveal the devastating impact of conflict on the livelihood of Congolese people [44, 50]. The data on the socio-economic impact of the conflict illustrate the importance of multi-level interventions that address the community-wide effects of conflict. Women reported having less frequent visits from family and community members associated with increased material deprivation. Interestingly,

experience of other types of traumatic events, including the total number of traumatic events, was not related to the frequency of family and community members visiting the woman's home. This could indicate the effect of widespread loss on the community; members may not be able to provide material assistance to other families due to their own level of poverty and need.

In contrast to women reporting visitors to her home, different types of traumatic experiences related to visiting others, as women were less likely to report family/community members in their home in the last month when reporting increased experience of traumatic events, warlike conditions, violence to others, coercion trauma and bodily injury trauma. The divergent relationship between exposure to different types of traumatic events and frequency of visiting others versus being visited by family/community members may be that women with particular traumatic exposures choose to separate themselves from others in the family or village. Bosnian refugees living in Chicago that participated in a narrative study discussed how violence and migration negatively affected their social networks. Several participants in that study described choosing to remain isolated from others as a form of self-protection from, as stated by Miller et al [51], "the anxiety, intrusive imagery, and painful memories elicited during social interactions". This could indicate that a subset of women who have experienced certain types of trauma may act to preserve their health by avoiding social interaction.

Drawing from research on internalized and perceived stigma, another possible explanation for the association between reduced visits to the homes of family/community members and certain trauma experiences (warlike conditions, violence to others, coercion, bodily injury, increased total events) may be stigma or fear of stigma by family or community members. Women that have witnessed, experienced or been forced to participate in

traumatic and violence events may fear retribution, anger or discrimination within their families and communities. They may perceive less support, and therefore reach out to family and neighbors less frequently, even if village members continue to include them. For example, women survivors of sexual violence in rural eastern DRC have described how some members of the community assist them with clothing and food and others “point at them” and gossip [18, 28]. Exposure to other traumatic experiences (warlike conditions, coercion, violence to others, bodily trauma) may alter relationships in the village perhaps due to moral judgment [35] of the experience or fear of retribution. A better understanding of the factors that drive women who have experienced certain traumatic events to visit family and community members less frequently may help understand how conflict has had a wider impact on family and community relationships.

The consistent relationship between increased symptoms characteristic of PTSD and social interaction is not surprising. PTSD is characterized by three symptom categories: re-experiencing symptoms, avoidance symptoms and hyperarousal symptoms. Several studies have pointed to a relationship between social isolation, social support and family separation with PTSD [12, 51] that operates in one or both directions. In a study in Eastern DRC, Veling et al. [52] reported that individuals with PTSD had more difficulty engaging in daily work and social contact than individuals without PTSD. In this study, reporting symptoms consistent with PTSD was more strongly related to women visiting family/community members in their home than warlike conditions, violence to others and bodily injury trauma. PTSD symptoms were also more strongly related to family/community members visiting the woman’s home than material deprivation. This study shows that women with PTSD may interact with villagers less frequently even if they are participating in community-based

microfinance program. Over time, participation in such a program may positively affect these social interactions.

This study has several limitations. As a cross-sectional study, causality cannot be shown. Exposure to traumatic events represents a history of at least one traumatic exposure in the past 10 years, representing the period of conflict the community. Some of these experiences are likely to be in the recent past and others several years prior to interviews. With on-going violence, displacement, poverty, unemployment and lack of sustained social resources, it is possible that there are multiple links between type and number of stress exposures (conflict and non-conflict related), mental health and social interaction. The dependent variables in this study approximate the level of women's social interaction but do not provide insight into other places of interaction or the quality of the interaction. It is possible that most villagers socialize outside of their homes: in the market, on farms, in church or in other places. While this may be true for daily interactions, the home still represents a place where visitors are cherished in Congolese culture [20]. As both the measures of mental health symptoms and social interaction focus on recent experience, it is not possible to approximate directionality of the relationship between social interaction and mental health. Further insight into family dynamics and community acceptance could explain the relationship between trauma exposure, mental health and social interaction. This study also focused on the experience of women; men may interact differently in the community and be differentially affected by trauma exposure. In future, use of a validated measure of social interaction will help to clarify the directionality and strength of relationships.

Conclusion

Few studies have examined the social impact of trauma in the context of conflict and post-conflict situations. Most research on social outcomes in these settings is focused on

sub-groups that are perceived to be at greater risk for stigma and rejection including survivors of sexual violence. In previous work with local communities, villagers have explained that the trauma experience of one village resident affects the entire community [18]. This study provides support to Congolese village residents concerns about how the impact of conflict is widespread in rural communities; it includes and extends beyond the impact of sexual violence [19]. Future research should examine more closely the social effects of conflict and post-conflict trauma on individuals and communities. This type of data would align with priorities of local communities to address the community-wide effects of conflict in addition to specific individual needs. A closer examination of different types of social interactions and the factors that influence these interactions could provide insight into ways to rebuild and strengthen local communities. Exploring social interaction and stigma more closely could inform the design of interventions to better target barriers to success and work towards more sustainable development programs.

Table 3.1 Reduced list of 16 symptoms associated with PTSD from the HTQ

1. Recurrent thoughts or memories of the most hurtful or terrifying events
2. Feeling as though the event is happening again
3. Recurrent nightmares
4. Feeling detached or withdrawn from people
5. Unable to feel emotions
6. Easily startled
7. Difficulty concentrating
8. Trouble sleeping
9. Feeling on guard
10. Feeling irritable or having outbursts of anger
11. Avoiding activities that remind you of the traumatic or hurtful event
12. Inability to remember parts of the most hurtful or traumatic events
13. Less interest in daily activities
14. Feeling as if you don't have a future
15. Avoiding thoughts or feelings associated with the traumatic or hurtful events
16. Sudden emotional or physical reaction when reminded of the most hurtful or traumatic events

Table 3.2: List of 15 symptoms associated with Depression from the HSCL

1. Feeling low in energy, slowed down
2. Blaming yourself for things
3. Crying easily
4. Loss of sexual interest or pleasure
5. Poor appetite
6. Difficulty sleeping
7. Feeling hopeless about the future
8. Feeling blue (very sad)
9. Feeling lonely
10. Thought of ending your life
11. Feeling of being trapped or caught
12. Worry too much about things
13. Feeling no interest in things
14. Feeling everything is an effort
15. Feeling of worthlessness

Table 3.3: Descriptive Statistics amongst female participants in Pigs for Peace in Walungu Territory, South Kivu Province

	Frequency	Percent
Village (N=701)		
Karhagala	43	6.13
Kamisimbi	49	6.99
Cagombe	57	8.13
Cahi	66	9.42
Lurhala	74	10.56
Kahembari	75	10.70
Irhaga	81	11.55
Karherwa	84	11.98
Cize	85	12.13
Izege	87	12.41
Current Age Group (N=701)		
16 – 19 years	12	1.71
20 – 24 years	106	15.12
25 – 34 years	208	29.67
35 – 44 years	151	21.54
45 – 60 years	186	26.53
> 60 years	38	5.42
Current Marital Status (N=699)		
Married	495	70.82
Widowed	155	22.17
Separated/Divorced/Abandoned	42	6.01
Never married	7	1.00
Education (N=701)		
Never went to school	476	67.90
Started, but did not complete primary school	110	15.69
Completed primary school	104	14.84
More than primary school	11	1.57
Symptoms of PTSD (N=672)		
Mean score (95% confidence interval)	2.21	(2.16, 2.26)
Possible Range of average symptom score	1 - 4	
Symptoms of Depression (N=699)		
Mean score (95% confidence interval)	1.84	(1.80, 1.87)
Possible Range of average symptom score	1 – 4	

PTSD and Depression were scored according to the standards laid out in the instrument. 10 different symptoms were used to understand symptoms of PTSD and 15 symptoms for depression.

Table 3.4: Frequency of experiencing individual and grouped traumatic events in the past 10 years (N=701)

	Frequency	Percent
Average number of traumatic events	3.96	
Material deprivation trauma	557	79.46
Ill health without access to medical care	441	62.91
Lack of food or water	411	58.63
Lack of shelter	166	23.68
Warlike condition (combat trauma)	341	48.64
Violence to others	257	36.66
Unnatural death of family or friend	176	25.11
Murder of family or friend	147	20.97
Witness rape or sexual abuse	79	11.27
Murder of stranger	46	6.56
Coercion	331	47.22
Forced separation from family members	194	27.67
Being close to death	161	22.97
Brainwashing	114	16.26
Forced isolation	63	8.99
Imprisonment	50	7.13
Lost or kidnapped	47	6.70
Bodily injury	205	29.24
Tortured or witnessed torture	128	18.26
Serious injury	112	15.98
Rape or sexual assault	55	7.85
Other types of sexual humiliation	44	6.28

*Frequency for grouped traumatic events is defined as having experienced at least one of the events in the group.

Table 3.5: Frequency of visiting and being visited by village members

	Frequency	Percent
<i>Visiting you:</i> Frequency of village members visiting you and your family in the past one month (N=697)		
Often	76	10.90
Sometimes	238	34.15
Rarely	105	15.06
Never	278	39.89
<i>Average score</i>	1.16 (CI: 1.08, 1.24)	
<i>Visiting others:</i> Frequency of visiting village members in the past one month (N=698)		
Often	76	10.89
Sometimes	262	37.54
Rarely	147	21.06
Never	213	30.52
<i>Average score</i>	1.29 (1.21, 1.36)	

*The range of possible values for the average score of *visiting you* and *reaching out* is between 0 and 3.

Table 3.6: Bivariate linear regression of visiting or being visited by village members and experience of traumatic events in the past 10 years

	Frequency of family/community members visiting woman's home in the past 30 days			Frequency of women visiting family/community members in their homes in the past 30 days		
	B	Standard Error	β	B	Standard Error	β
Number of different traumatic events (0–18 events)	-0.03	0.011	-0.12**	-0.05	0.010	-0.18***
Material deprivation trauma	-0.19	0.100	-0.07	0.15	0.095	0.06
Warlike conditions trauma	0.03	0.705	0.01	-0.26	0.076	-0.13***
Violence to others trauma	-0.21	0.08	-0.09**	-0.22	0.08	-0.10**
Coercion trauma	-0.14	0.08	-0.07	-0.34	0.08	-0.17***
Bodily injury trauma	-0.05	0.09	-0.02	-0.27	0.08	-0.12***

*The reference group for dependent variables is never *visiting you* and never *reaching out*

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 3.7: Multivariate linear regression between frequency of family/community members visiting woman's home and experience of traumatic events in the past 10 years controlling for PTSD, depression, age, and being married (N = 667)

	B	Standard Error	β	Adjusted R²
MODEL 1				
No. of traumatic events (0–18)	-0.01	0.01	-0.05	0.057
Symptoms of PTSD	-0.35	0.09	-0.22***	
Symptoms of Depression	0.16	0.11	0.07	
Age in years	0.16	0.04	0.18***	
Marital status	0.20	0.10	0.08*	
MODEL 2:				
Material deprivation trauma	-0.25	0.10	-0.09*	0.063
Symptoms of PTSD	-0.39	0.08	-0.24***	
Symptoms of Depression	0.19	0.11	0.09	
Age in years	0.17	0.04	0.19***	
Marital status	0.22	0.10	0.09*	
MODEL 3:				
Warlike conditions trauma	0.10	0.08	0.05	0.058
Symptoms of PTSD	-0.41	0.08	-0.26***	
Symptoms of Depression	0.17	0.11	0.08	
Age in years	0.16	0.04	0.18***	
Marital status	0.22	0.10	0.09*	
MODEL 4:				
Violence to others trauma	-0.11	0.09	-0.05	0.064
Symptoms of PTSD	-0.36	0.09	-0.22***	
Symptoms of Depression	0.16	0.12	0.07	
Age in years	0.16	0.04	0.18***	
Marital status	0.21	0.10	0.09*	
MODEL 5:				
Coercion trauma	0.01	0.09	0.00	0.055
Symptoms of PTSD	-0.39	0.09	-0.25***	
Symptoms of Depression	0.17	0.12	0.07	
Age in years	0.16	0.04	0.18***	
Marital status	0.21	0.03	0.18***	
MODEL 6:				
Bodily injury trauma	0.13	0.10	0.05	0.058
Symptoms of PTSD	-0.43	0.09	-0.27***	
Symptoms of Depression	0.16	0.12	0.07	
Age in years	0.16	0.04	0.18***	
Marital status	0.22	0.10	0.08*	

*The covariates PTSD, Depression and age in years are entered as continuous variables. The reference group for marital status includes divorced, separated, widowed, abandoned and never married.

* p<0.05, ** p<0.01, *** p<0.001

Table 3.8: Multivariate linear regression between frequency of women visiting family/community members in their homes and experience of traumatic events in the past 10 years controlling for PTSD, depression, age, and being married (N = 667)

	B	Standard Error	β	R²
MODEL 1				
No. of traumatic events (0–18)	-0.05	0.01	-0.17***	0.055
Symptoms of PTSD	-0.18	0.09	-0.12*	
Symptoms of Depression	0.13	0.11	0.06	
Age in years	0.10	0.03	0.12**	
Marital status	-0.07	0.09	-0.03	
MODEL 2:				
Material deprivation trauma	0.14	0.10	0.05	0.035
Symptoms of PTSD	-0.33	0.08	-0.21***	
Symptoms of Depression	0.15	0.11	0.07	
Age in years	0.10	0.03	0.12**	
Marital status	-0.02	0.09	-0.01	
MODEL 3:				
Warlike conditions trauma	-0.26	0.08	-0.13***	0.047
Symptoms of PTSD	-0.26	0.08	-0.17***	
Symptoms of Depression	0.15	0.11	0.07	
Age in years	0.11	0.03	0.13**	
Marital status	-0.02	0.09	-0.01	
MODEL 4:				
Violence to others trauma	-0.19	0.09	-0.08*	0.039
Symptoms of PTSD	-0.27	0.08	-0.18**	
Symptoms of Depression	0.15	0.11	0.07	
Age in years	0.10	0.04	0.12**	
Marital status	-0.03	0.10	-0.01	
MODEL 5:				
Coercion trauma	-0.29	0.09	-0.14***	0.049
Symptoms of PTSD	-0.22	0.09	-0.14**	
Symptoms of Depression	0.11	0.11	0.06	
Age in years	0.11	0.04	0.13**	
Marital status	-0.03	0.10	-0.16	
MODEL 6:				
Bodily injury trauma	-0.20	0.10	-0.09*	0.039
Symptoms of PTSD	-0.26	0.09	-0.17**	
Symptoms of Depression	0.17	0.11	0.13	
Age in years	0.10	0.04	0.12**	
Marital status	-0.03	0.10	-0.01	

*The covariates PTSD, Depression and age in years are entered as continuous variables. The reference group for marital status includes divorced, separated, widowed, abandoned and never married.

* p<0.05, ** p<0.01, *** p<0.001

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Chapter 4: Risk for family rejection and associated mental health outcomes amongst conflict-affected adult women living in rural eastern Democratic Republic of Congo (Paper 2)

Abstract

Background: Civilian populations in eastern Democratic Republic of Congo have been exposed to high levels of conflict-related trauma including sexual violence. Stigma as a consequence of sexual violence includes family rejection, a complex outcome including economic, behavioral and physical components. Local populations describe multiple types of conflict-trauma as affecting family relationships. This study explores the relationship between conflict-related trauma, family rejection and mental health in adult women. The relationship between specific circumstances of sexual assault and family rejection is examined.

Method: Adult women participating in a livestock based microfinance program who experienced conflict-related trauma (N=315) were asked about their experience of family rejection and symptoms of depression and PTSD. Logistic and linear regression was used to investigate the relationship between trauma exposure, family rejection and mental health. Bivariate relationships between experiences of sexual assault (N=51) and family rejection were examined with Pearson's chi-square test.

Results: Rejection by family was significantly associated with experiencing more traumatic events, violence to others, bodily trauma and coercion. Increased symptoms of PTSD were significantly associated with family rejection and experience of warlike conditions. Family rejection was more strongly related to depression than the three significant trauma exposures: coercion, increased exposure to trauma and violence to others. Women who reported rape (N=51) were more likely to report family rejection if they were raped more than once, other people witnessed the assault, experienced rape with multiple perpetrators and had a child due to rape.

Conclusion: Exposure to multiple and different types of conflict-related trauma, including sexual violence, can negatively impact family relationships through family rejection. Family rejection, in addition to individual trauma exposures, may lead to poor mental health including depression and PTSD. Interventions should better understand and address the changes in family dynamics and exposure to different types of trauma in post-conflict environments.

Introduction

The eastern Democratic Republic of Congo (DRC) has endured on-going war and violence since 1996. The wars have placed a devastating toll on civilian populations, including high exposure to traumatic events, disruption of economic opportunities, destruction of infrastructure and basic health and social services resulting in elevated mortality and morbidity [1-3]. Data from a series of mortality studies indicates that 5.4 million excess deaths occurred between August 1998 and April 2007 of which 4.6 million occurred in the insecure eastern provinces, making the conflict in the DRC the deadliest crisis since World War II [4]. In three cross-sectional surveys amongst residents and displaced people in three towns of North Kivu province in eastern DRC, participants reported exposure to at least one violent incident within the family (50.4% - 99.1%), displacement (39.0% - 99.9%) and theft (57.4% - 87.7%) [5]. Women living in eastern DRC (North and South Kivu provinces, Ituri District) reported high exposure to physical violations in the past 16 years (1994-2010) including being beaten or shot (17.2%), movement violation such as capture or abduction (7.8%) and property violations including theft (23.6%) [6].

Globally, civilian populations are increasingly the targets for conflict-related violence and abuse [7]. Several studies document exposure to war-related violence as a risk factor for mental illness. Results of a cross-sectional study with adults living in Juba Town, Southern Sudan in 2007, showed high exposure to violent and traumatic events: 59.9% experienced unnatural death of family members or friends, 51.5% were in a combat situation, 35.9% were forcibly displaced, 35.1% were close to death and 6.7% reported rape or sexual abuse. Study participants that were older, female, lacked basic necessities (e.g. food and/or water, soap), lacked medical care when ill, were in a combat situation, experienced the murder of a family

member or friend, survived rape or sexual abuse, or experienced more than 6 different traumatic events were more likely to have poor mental health [8]. Other studies have also identified an association between cumulative exposure to war-related violence and mental illness [9-13]. Gender differences in mental illness have been documented in conflict settings with higher prevalence of anxiety, depression and PTSD among women [9, 10, 14]. In Northern Uganda, a study amongst adult IDP reported 54% of respondents had PTSD and 67% had symptoms of depression. In this study, women who were no longer married had approximately twice the odds of depression (2.4) and PTSD (1.8). Women that were raped or experienced sexual abuse were almost twice as likely (OR=1.7) to have PTSD [9]. Other studies have identified a similar relationship between sexual violence and reduced mental health [15]. However, it is important to note that exposure to war-related violence accounts for only a proportion of mental illness and not all individuals (women and men) exposed to war-related violence have poor mental health outcomes [16, 17].

Sexual violence in conflict settings: Sexual violence has taken place in conflicts throughout the world including Bangladesh, Burma, Columbia, Yugoslavia, East Timor and Rwanda [18-21]. Estimating the prevalence of sexual violence in conflict settings is difficult due, in part, to insecurity, stigma and limited access to health care services [19, 22-24]. A cross-sectional study conducted in 2005 in two large camps for IDP in Uganda found 28.6% of women accessing emergency reproductive health care, psychological support and surgical services had survived sexual violence during the war [25]. In North and South Kivu provinces and Ituri district, a cross-sectional study in 2010 estimated that 39.7% of women and 23.6% of men had ever experienced sexual violence [6]. These findings are consistent with other studies that have attempted to quantify conflict and non-conflict related sexual violence in eastern DRC [26, 27]. Women are vulnerable to conflict related sexual violence in their

homes, fields, markets and camps for displaced persons [28]. Studies have documented the occurrence of gang rape, rape in front of family members, sexual slavery, mutilation and brutality during rape, pillaging and forced involvement of family members in the assault [3, 21, 28]. As a result, sexual assault impacts multiple dimensions of well-being including physical, mental and social health [3, 25, 29].

The individual level consequences of sexual violence include poor health, stigma, isolation, rejection and fear of rejection. A study amongst women survivors of sexual violence accessing health services at Panzi Hospital (in Bukavu) or one of two rural NGO's in eastern DRC found that 29% of women reported abandonment by their husband and 6% reported abandonment by their communities after the assault [30]. Twelve percent (1,103) of 9,109 women accessing NGO services in South Kivu province reported being “expelled from their homes after experiencing sexual violence” [27]. In a random sample of 2,620 community participants in North and South Kivu province and Ituri district (2007) in DRC, one-third of respondents said that they would not accept a survivor of sexual violence back into their home [31]. There are many reasons for stigma and rejection including family and community beliefs that women were voluntary participants in the assault; the trauma and humiliation associated with public, witnessed rape; cultural beliefs that sex, whether or not voluntary, means that a woman is married to her partner/aggressor; fear of return of the aggressor; social (family and community) pressure to reject survivors; cultural beliefs that women should represent purity; and pregnancy due to rape [3, 23, 28, 32-34]. As a result, some women reported hiding their history of sexual violence from their spouse and/or family members [22, 33].

South Kivu province is located in eastern DRC and shares an international border with Rwanda and Burundi. High levels of displacement, unemployment and looting have

occurred throughout the province. Eight territories are included in South Kivu province (population: 1.5 million); one of these, Walungu, is a high-density territory [3]. Various military and rebel groups inhabit the forests surrounding Walungu Territory; they also use it as a base to mine minerals (gold, coltan, cassiterite) and loot and frighten local populations. In partnership with Foundation RamaLevina (FORAL), a Congolese NGO, we conducted in 2010 a qualitative study with female survivors of sexual assault, their male partners and knowledgeable community members in Walungu Territory. Participants described family rejection as complex and multi-faceted, for example forced removal from the family home, loss or limited financial support by family, children of the survivor (even those not borne from rape) being rejected by the family, lack of communication and affection, limited assistance or involvement in household activities, reduced or absence of sexual activity, and loss of property [33]. During discussions with community members, they described the difficulties that all villagers faced due to their exposure to different types of conflict-related trauma, such as, loss of economic stability and basic infrastructure and social services. Community members expressed a need to better understand and address the multiple risk factors and consequences of different types of trauma on family relationships and individual outcomes.

Moral Stigma: A brief introduction into moral stigma may provide an understanding of how family rejection is related to exposure to multiple types of trauma and mental health outcomes. Stigma is a process involving the use of labels and stereotypes, separation of individuals from a group and discrimination against labeled individuals. Stigma and the associated outcomes result from an interaction between individual behavior and characteristics and social and cultural norms, morals and beliefs [35]. Yang et al. [36, 37] propose a cultural understanding of stigma, where stigma is “embedded in the moral life of

sufferers”. Moral, in this context, is defined as that which is most important in the daily life and interaction of ordinary people. Thus, communities employ stigma as a means of protecting the larger group and preserving social and cultural norms, meanings and values [36, 38]. In situations where communities have been exposed to high levels of violence and trauma, moral stigma may represent an example of communities trying to recuperate and preserve their bonds, although at the expense of certain, vulnerable individuals. In the DRC, individuals are deeply embedded in their family and communities. People develop and define their identity as a part of a larger social whole, favoring well-being of the group over individual needs [39]. Stigma is a cause of health inequalities [40]; as a result, understanding the multiple risk factors for and outcomes associated with stigma [41] in a conflict-setting is critical in developing appropriate health and social programs.

In their description of how the family may be impacted by one member’s stigmatized position, Corrigan and Miller [42] explain that family members may be stigmatized because of their choice to continue to interact with the marginalized individual. This places great social pressure on families to reject stigmatized persons, even if the individual members express a desire to practice acceptance. In the DRC, male partners of survivors of sexual assault have described the difficulty they face in accepting their wife/female partner for reasons that include the family and peer pressure they face to remarry a woman who has not been raped [33]. The social pressure is powerful and important in a setting where family and community are essential to individual well being [39]. Thus family members bear a responsibility for and experience stigma due to an individual in the family being marked as different [36, 37]. Family acceptance can also act as a protective force for the survivor, resulting in reduced community-level stigma [43]. Experiences of family rejection in DRC may fall within the realm of moral stigma whereby individuals grow and live in a family and

social unit, and when the moral character of society and family are threatened it is considered dangerous to the character and cohesion of the group. As a result, decisions to reject family members may be related to experiences where individuals are held responsible or blamed for their trauma; for example, sexual violence. There may be other conflict-related traumatic exposures that similarly result in a stigmatizing experience within the family and community leading to negative health outcomes.

This analysis builds on the results from the qualitative work conducted in 2010 to explore the multiple trauma-related risk factors for rejection from family and how rejection relates to mental health outcomes in women. The aim for this study is to explore the relationship between conflict-related trauma, family relationships and mental health amongst female participants in a Congolese-led livestock microfinance program, Pigs for Peace (PFP), in rural South Kivu province. Consistent with prior research on family relationships, we hypothesized that (1) family rejection would be associated with a past experience of conflict-related traumas, including sexual assault; and (2) an experience of family rejection would more strongly predict poorer mental health outcomes than experiences of conflict-related trauma. Lastly, given the prevalence of sexual assault and the international and national focus on sexual assault in conflict settings, the relationship between specific circumstances of sexual assault and family rejection is examined more closely.

Methods

Study design: In 2011, an NIH/NIMHD-funded randomized community trial was initiated in ten rural villages of Walungu Territory, located between 40-80 km from Bukavu (the capital of South Kivu province), to evaluate the effectiveness of a livestock microfinance intervention, Pigs for Peace, on health, economic and community-level outcomes. Prior to selection of villages, introductory meetings were held between trained

Congolese PFP Research and Microfinance agents (i.e., PFP agents) and village traditional and administrative leaders to introduce the microfinance intervention and associated study. The 10 villages were selected for participation in PFP based on: 1) feasibility of delivering an intervention over a wide geographic area; 2) permission to work in the villages and commitment to the intervention and study by traditional chiefs and administrators; and 3) findings from village-level assessments conducted by our team with a focus on administrative data (e.g., population size, health status, economic data, security) and semi-structured interviews with key stakeholders (e.g. nurses, teachers, religious leaders, traditional chiefs, territory administrators and community group leaders) to understand village resources, development-related needs, security concerns and existence of other microfinance interventions in the area.

Livestock Microfinance Intervention: PFP is a Congolese-led, livestock microfinance program that provides a loan to interested and committed individuals in the form of a 2 to 4 month-old female pig. PFP is a collaborative project between Programme d'Appui aux Initiatives Economiques (PAIDEK), a Congolese microfinance organization working in eastern DRC, and Johns Hopkins University School of Nursing (JHUSON). PFP was initiated in 2008 in villages near Bukavu in the South Kivu province. The PFP model uses pigs as a loan because animals are an important source of economic well-being in rural villages, pigs are traditionally raised in DRC, as there is no cultural taboo; both women and men can, culturally, be in charge of caring for the pig and making decisions about breeding and selling; pigs reproduce frequently and generally produce 6-12 piglets at each breeding; and pigs consume a wide range of foods (e.g. sweet potato, bananas, avocados, corn, etc.) that are locally available. Community members enrolled in PFP, and those that were randomly selected for the intervention group participated in a training program, built a

pigpen and compost, and received their pig within 1 – 4 months after participating in baseline data collection. PFP participants randomized to the two delayed control groups will complete the training, build a pigpen and compost and receive their pig from the reimbursed loans of the intervention groups between 12 to 18 months post-baseline. Each member cares for their pig including providing adequate nutrition, health care and supervision with support from the trained Congolese PFP Microfinance and Research agents (i.e., PFP agents) and their trained village-based assistants. Support is provided by home visits and group member discussions related to challenges and successes. When the pig gives birth, members repay their pig loan in the form of two female piglets, which are then used to provide new pig loans in the same village to the delayed control group members. After repaying their loan, the remaining piglets and the original female pig is theirs to continue to breed or sell [44]. The PFP agents visit villages twice a month to gauge the progress of each intervention group member and to provide support to the local assistant.

Study Sample: Adults, aged 16 years and older, were eligible for the study if they expressed a commitment and understanding of microfinance principles (e.g. repayment of loans), were permanent residents of the village and were responsible individuals in the household (e.g., married 16 year old, 16 year old responsible for younger siblings because of death of parent, widow). Participation was limited to one member (male or female) of a household. In families where men were in polygamous relationships or 2 generations lived in the same enclosure, one different responsible member of each family unit could participate. Following outreach and community awareness led by PFP agents and village leaders, a participatory village meeting was held to discuss the microfinance intervention and study related activities (e.g. participating in 4 surveys over 18 months) and to answer questions from interested villagers. Eligible individuals interested in participation in the intervention

attended a second meeting the following day where each individual received a coupon with an ID code and their name on it. A folded copy of the coupon was placed in a box for a village lottery. Without looking at the contents of the box, a child from the village randomly picked coupons out of the box. Within each village, the team planned to select and randomize 66 households to intervention and delayed control groups. Due to high level of interest, a second delayed control group was formed in 8 of the 10 villages such that a minimum of 66 people in each village were enrolled in the project (intervention and delayed control groups) and the remaining individuals were placed in the second delayed control group.

Data collection: Baseline data collection took place after randomization, but prior to initiation of the intervention. To address logistical challenges of conducting research, in areas with limited infrastructure during seasons of heavy rain and other challenges, the team collected baseline data in two phases. In Phase I, baseline data was collected in 5 villages (Cagombe, Izege, Lurhala, Cize and Karherwa) between May and June 2012 and for Phase II, baseline data was collected in the remaining 5 villages (Cahi, Irhaga, Kahembari, Kamisimbi, Karhagala) between August and September 2012. As expected, a few participants in households in villages in both Phase I and Phase II were not available (e.g. participant hospitalized) during the baseline data collection periods, therefore, the final baseline interview was completed in November 2012.

Questionnaire development, pilot testing and implementation The PFP questionnaire was developed using existing, validated research instruments and data from prior research in the DRC by this research team [33, 44]. The questionnaire includes sections on socio-demographics, economic activity, physical and mental health, exposure to trauma and rejection from family. Trained team members using a tablet to administer the study

questionnaire. Prior to implementing the study questionnaire, translation and back-translation from English to French was conducted with the team as well as translation to local languages Swahili and Mashi. The questionnaire was then pilot tested four different times with men and women in PFP “demonstration villages”, before finalizing the questionnaire. (These demonstration villages are 22 communities located about mid-way between Bukavu (the capital of the province) and Walungu Territory; these communities were where the PFP project was first initiated and evaluated, leading to the current study.) The first two pilot tests of the questionnaire focused on content including comprehension, acceptability and translation. The second two pilot tests involved use of the tablet to ensure acceptability by participants and make corrections to programming as needed.

Six full-time PFP agents and ten part-time interviewers, both male and female, completed 5 days of training that included human subject research training, safety and security of team members, use of tablets for data collection, data management and quality. Each team member completed mock interviews within the team and pilot interviews in the PFP demonstration villages with debriefing with all team members. Experience during mock interviews and prior work by the research team in rural communities [33, 44, 45] gave evidence that rural villagers (men and women) felt comfortable being interviewed by either male or female team members. A second “booster” training was held in August 2012 with all team members prior to initiation of Phase two of fieldwork.

The Institutional Review Board (IRB) of the Johns Hopkins Medical Institute approved of this study. As there is no local IRB in South Kivu province, a committee of respected Congolese educators with faculty appointments or administrative roles at the Universite Catholique at Bukavu reviewed and approved of this study, including risks and benefits to participants. Pilot and study interviews were initiated only after receiving oral,

voluntary, informed consent. Study identification codes and names were recorded during the interview; all data recorded through the tablet-based program was backed-up and uploaded to a password-protected server managed by the study team, and then names were centrally removed from the dataset and stored in a separate file. As interviews were conducted during the day when members would be earning their daily income, compensation for the time spent away, approximately 90 minutes, from work (e.g. agriculture, market) was provided as per local rates, approximately 1.50 USD. All interviews took place in a private setting of the respondent's choice, most often their home.

Study Questionnaire: In the section below, detailed information is provided on the components of the study questionnaire utilized to answer the study aims. Age was included as a continuous covariate in the model. Participants reported their current age category: 15-19 years, 20-24 years, 25-34 years, 35-44 years, 45-60 years and over 60 years. Age was included in the model as a continuous variable with values between 0-4 where the reference group was 15-19 years and persons over 60 years were coded as four.

(a) *Exposure to trauma:* The exposure to trauma events section of the questionnaire was adapted from the Harvard Trauma Questionnaire (HTQ) [46]. Participants were asked about their exposure to 18 different events including sexual assault and forced separation from family members over the past 10 years, a time period when rural villagers experienced conflict-related violence. Exposure to trauma was examined in two ways: as a continuous variable (experience of 1 – 18 different traumatic events) and categories of traumatic events. In a study with Cambodian refugees, Mollica et al. [47] introduced categories of exposure to traumatic events. The categories of traumatic events examined in this study are based on that method, with some modifications to account for different variables. The categories include exposure to at least one event in the group: (1) material deprivation (three events: lack of

food or water, lack of shelter, and ill health without access to medical care); (2) warlike conditions (one event: combat situation); (3) bodily injury (four events: torture or witnessed torture, serious injury, rape or sexual assault, other type of sexual humiliation); (4) coercion (six events: imprisonment, brainwashing, lost or kidnapped, being close to death, forced isolation, forced separation from family members); and (5) violence to others (four events: unnatural death of family member or friend, murder of family member or friend, murder of stranger, witness rape or sexual abuse).

(b) *Sexual assault*: All female participants who reported any type of sexual assault or kidnapping in the past ten years (as reported in the *exposure to trauma* section) were asked when they were assaulted. As not all would have been raped (e.g., sexual humiliation, verbal abuse), only those reporting rape were asked a series of follow-up questions about the assault(s). Questions were developed based on experience working with survivors of assault in eastern DRC and prior studies that indicated women have been raped publicly, multiple times and in their homes [3, 29, 30, 33].

(c) *Family rejection*: Questions on family rejection were developed through qualitative work with survivors of sexual violence living in Walungu Territory in 2010 [33]. The prior qualitative study used one-on-one, in-depth interviews that focused on experience of family and community rejection after sexual violence including detailed descriptions of the different people that reject survivors and the reasons for and means of rejection. This section was reviewed and field-tested separately by PFP staff and a partner Congolese NGO, FORAL, in Walungu Territory to ensure comprehension and acceptability of sensitive questions. Afterwards the section was incorporated into the questionnaire for pilot testing.

Participants reported whether their spouse/male partner, parents or in-laws ever rejected them. Prior qualitative research indicated that survivors of sexual assault experience

rejection in different ways and by different people. For example, survivors described experiences of rejection that included being told to leave their home, no longer receiving financial support but continuing to live in the family home, lack of support for children and/or limited communication and emotional support [30, 33]. Therefore, for this study, family rejection was broadly defined to include financial, emotional or physical rejection. In the first iteration of the family rejection section (i.e., surveys implemented between May and June 2012), all those participants reporting sexual assault provided information on their experience of family rejection. In July 2012, this module on family rejection was revised and expanded to include all participants who reported conflict-related trauma (i.e. not limited to those reporting sexual assault only). This revision was done in response to participants noting that trauma-related factors, other than sexual assault, can be linked to family rejection. For example, villagers that did not have a history of sexual assault presented their difficulties with family and community relationships as important, but less examined in research and intervention.

(d) Mental health: A 16-item version of the HTQ was used to understand the experience of posttraumatic stress symptoms [46]. Symptoms of posttraumatic stress include three categories of symptoms: re-experiencing traumatic events, avoidance and numbing and psychological arousal. Respondents reported the frequency (not at all, a little bit, quite a bit, extremely) of experiencing each symptom in the past one week. The Hopkins Symptom Checklist (HSCL) was used to understand experience of depression-related symptoms in the past four weeks [46]. Participants reported the frequency (not at all, a little bit, somewhat, extremely) of experiencing each item on the 15-item checklist for depression-related symptoms. Both the HSCL and HTQ have been validated for use in other conflict settings and in East Africa [9, 10, 48]. An average individual symptom score was calculated for PTSD

and depression where the symptom frequency ‘not at all’ was scored as 1 and ‘extremely’ as 4. Therefore, the total symptom score for PTSD and depression was between 1-48 and 1-45 respectively. Where individual-level missing data on the frequency of experiencing symptoms was small for a syndrome (<25% missing data for total symptoms), the individual’s average symptom score was the average of the available items. Individuals that were missing more than 25% data within a syndrome were not included in the analysis.

Data analysis: Descriptive analysis included mean and standard deviation for continuous variables and counts and percentages for categorical variables. To test our first hypothesis that family rejection would be associated with a past experience of more violent conflict-related traumas, including sexual assault, bivariate logistic regression was used. Each category of trauma was tested as a predictor of ever being rejected by family (husband/male partner, parents, and/or in-laws). Multiple linear regression was used to test the second hypothesis that experience of family rejection would more strongly predict poorer mental health outcomes than experiences of conflict-related trauma. The two dependent variables, PTSD and depression, were continuous. For each dependent variable, six multivariable linear regression models were run to test the relative importance of exposure to the different types of trauma and family rejection in predicting mental health. Each model included a different trauma type (e.g., number of different trauma exposures, material deprivation, bodily injury). Age was included as a covariate in all multiple linear regression models.

In exploratory analyses amongst the subset of women that reported ever experiencing rape (N=51), descriptive statistics were conducted including whether they were rejected by family, number of times assaulted, whether the assault was witnessed and where it took place. Bivariate relationships between specific experiences of assault and family

rejection were examined using Pearson's chi-square test. All statistical analyses were formed using STATA version 11.2 (Stata Corporation, College Park, Texas, USA).

Results

Of the 354 women in the 10 villages that responded to questions on family rejection, 315 had experienced at least one traumatic event in the past ten years (89.0%). Owing to the previously described revisions to the family rejection section, the majority of participants (262) were from Phase two villages (Irhaga, Cahi, Kahembari, Kamisimbi, Karhagala). Most participants were between 45-60 years (29.5%) or 25-34 years (28.3%) (Table 4.1). Most women reported being married (69.4%) or widowed (22.9%). Average PTSD and depression scores were available for a total of 308 (97.8%) and 314 (99.7%) females, respectively, out of the 315 total women included in this analysis. The average post-traumatic stress symptom score was 2.22 (CI: 2.14, 2.30; N=230) and the mean depression score was 1.85 (CI: 1.80, 1.91; N=314).

The average number of different traumatic experiences was 4.64 (CI: 4.15, 5.14) per person (Table 4.2). In the past 10 years, most participants (87.9%) experienced at least one type of material deprivation trauma. Experience of warlike conditions was reported by 52.7% of participants. Almost half of the women (47.3%) had experienced coercion. Rape or sexual assault was reported by 15.6% of women; 10.2% reported experiencing other types of sexual humiliation. Of the 315 women that answered questions about family rejection, 60 (19.0%) reported being rejected by at least one family member (husband/male partner, parents, in-laws). About 14% reported ever being rejected by their husband/male partner and 8.6% by their parents and/or in-laws.

Association between trauma and family rejection: Women who experienced more types of traumatic events (OR: 1.09; CI: 1.03, 1.15), violence to others (OR: 1.97; CI: 1.12, 3.49),

coercion (OR: 2.24; CI: 1.25, 4.00), and bodily injury trauma (OR: 2.61; CI: 1.47, 4.64) were significantly more likely to be rejected by family members (Table 4.3) in bivariate logistic regression. Material deprivation trauma and warlike conditions were not significantly related to family rejection.

Association of trauma and family rejection with mental health: In all six multivariate linear regression models between trauma, family rejection and PTSD, family rejection was significantly associated with posttraumatic stress symptoms (Table 4.4). Family rejection was more strongly related to PTSD than experience of warlike conditions in the past 10 years (as evidenced by a larger β coefficient in Table 4.5). Material deprivation was not significantly related to posttraumatic stress symptoms. Family rejection was significantly related to having symptoms of depression in all six multiple linear regression models (Table 4.6). Family rejection showed a stronger association with depression related symptoms than the experience of increased number of different traumatic events, coercion and violence to others. Bodily injury and family rejection were both related to experience of depression related symptoms. Neither the experience of material deprivation nor warlike conditions were significantly related to symptoms of depression.

Experience of sexual assault: Fifty-one women reported rape (Table 4.7). Amongst this subset, 16 (31%) reported ever experiencing family rejection, consistent with previous studies in Eastern DRC, with most reporting rejection by their husband. About one-third of women reported that an armed combatant group sexually assaulted them more than once. The most recent sexual assault was frequently witnessed by others (52.9%), involved more than one perpetrator (60.8%), and took place in the forest (45.1%) or the woman's home (43.1%). More than four out of five women reported abduction by the perpetrator of sexual assault (84.3%). Bivariate analysis showed that several characteristics of rape were

significantly associated with family rejection (Table 4.8): raped more than once (52.9% vs. 23.5%), other people witnessing the assault (55.6% vs. 8.3%), having multiple perpetrators (i.e., gang rape) in the most recent assault (43.4% vs. 10%) and having a child due to the sexual assault (66.7% vs. 23.1%). The following variables were not significantly associated with family rejection: ever being abducted by the perpetrators of the assault and, in the most recent assault, being raped at home, having possessions stolen, and seeking medical care afterwards.

Discussion

This cross-sectional analysis of trauma-related predictors and mental health outcomes of experience of family rejection amongst conflict-affected adult women living in rural eastern DRC provides evidence of the importance of family relationships to mental health. Female participants reported high exposure to traumatic events including experience of material deprivation (87.9%), warlike conditions (52.7%) and coercion (47.3%). Almost one in five women reported an experience of family rejection (19.1%). While qualitative studies point to the importance of sexual assault in family rejection [27, 30, 33], community members in Walungu Territory presented the importance of all types of trauma experiences to changes in family and community relationships. This study quantified the importance of trauma exposures, by type, to family rejection and found that exposure to more events; violence to others (e.g., unnatural death of family or friend, murder of family or friend, witnessed rape or sexual abuse, murder of stranger); coercion (forced separation from family members, being close to death, brainwashing, forced isolation, lost or kidnapped, imprisonment) and bodily trauma (serious injury, torture or witnessed torture, rape or sexual assault, other types of sexual humiliation) were significantly associated with higher odds of family rejection. Family rejection was defined broadly to include the varied and multiple

aspects of rejection that may predict health outcomes. Because this definition is not limited to being forced out of the home, women who report rejection in this study may be harder to identify for interventions because they could be living with their family, but in less than ideal conditions [49].

A focused analysis of sexual assault and family rejection provided detailed information on situational factors that could result in family rejection. For example, women reporting that there were people, other than the perpetrators, that witnessed the assault (e.g., family, friends) or more than one perpetrator were more likely to have an experience of family rejection. Women who were raped multiple times by armed groups and who became pregnant as a result of the assault were also more likely to report rejection by family. These situational risk factors for family rejection are supported by qualitative research [3, 30, 33]. In the framework of moral stigma, it is not surprising that the more public experiences of rape (e.g., witnessed assault, gang rape, multiple rapes) were associated with rejection. These types of rape experiences are more difficult to hide from community and family members. In one qualitative study, women who had been raped multiple times reported that after the first rape, her husband was empathetic. But when she was assaulted a second time, he blamed her for the assault saying that she must have been looking for her attackers [33]. Similarly, with each of these types of trauma experiences (rape and other types of trauma), there is the possibility to blame the victim for her experience and to interpret it as a threat to the moral attitudes that guide social interaction and social reciprocity. A study with Mozambican female refugees provided detailed description of how social belonging and balance in the social realm is essential to individual health and identity [32]. As stated by Sideris [32], “loss of social belonging... (was) one of the worst outcomes of the war”. Family rejection, related to any type of trauma exposure, may be an act to preserve socio-cultural morals and protect

the community, although at the expense of the individual. It is not surprising that material deprivation did not have a significant association with family rejection. First, material deprivation was a widespread experience in the community with more than 4 out of 5 families reporting at least one traumatic experience in the past ten years. Secondly, material deprivation may not be associated with a cultural or moral judgment because it is widespread and does not risk an assumption of culpability.

Family rejection may have an important role in mental health outcomes. This study examined exposure to trauma in the past ten years, ever experiencing family rejection and current mental health. Family rejection was associated with increased symptoms of depression and PTSD regardless of the trauma exposure. This shows the importance of family relationships, in addition to individual trauma exposures, in producing individual outcomes. Other researchers have emphasized the importance of understanding the role of the social and material conditions that contribute to mental health outcomes apart from, or in addition to, exposure to conflict-related trauma [16, 50, 51]. Women who have experienced violence in war have referred to the social impact of the violence as overwhelming and debilitating, affecting their access to resources and support [32, 52]. Material deprivation was not significantly associated with increased symptoms of depression or PTSD. Because most of the population experienced some type of material deprivation, individuals may not experience the stigma and mental health outcomes associated with other types of trauma. While individual trauma experiences were generally more strongly related to PTSD, family rejection consistently predicted symptoms of depression. In a study focused on the mental health effects of political violence in Nepal, Kohrt similarly reports that conflict-related violence predicted PTSD but social factors more strongly predicted depression [53, 54].

Results from this study demonstrate the importance of family relationships to mental health outcomes in eastern DRC, and likely other conflict-affected countries [49, 55]. Individual experiences of trauma (conflict and non-conflict related) remain important. However, their long-term significance may be understood, in part, through how the trauma affects social relationships. Broadening the lens of interventions from addressing individual needs to include family and community relationships may present an opportunity to address the multi-level outcomes of conflict in an appropriate and culturally acceptable manner. Partnering with local Congolese organizations to understand, design and adapt interventions for rural communities is critical. For example, in DRC, local communities emphasize the importance of building on community resources to provide mediation to resolve family conflict. Support to enhance family mediation interventions [33] or adaptation of promising group psychotherapy approaches [56] to address family relationships may reduce some of the negative family outcomes associated with trauma. Survivors of trauma frequently describe the economic impact of conflict on individuals and families. Economic interventions that prioritize the needs of the family, perhaps through inclusion of awareness or counseling, may also reduce some of the negative outcomes of conflict while contributing towards improved family outcomes.

There are several limitations to this study. First, as a cross-sectional study, the results are indicative of important relationships in the family but cannot conclusively provide information on causality. Trauma measurement focused on an experience of trauma in the past 10 years and family rejection emphasized ever being rejected by family. Therefore, from this study, it is not possible to conclusively say that trauma preceded and resulted in family rejection. Longitudinal data on family rejection, trauma exposure and mental health would provide insight into causality and change over time and may examine whether family

rejection mediates all or part of the relationship between trauma and mental health. Secondly, the measure of family rejection was developed based on qualitative research in these communities, but did not involve the use of a validated scale which may more accurately measure the different manifestations of family rejection. Lastly, we were not able to parse out the family rejection by spouse from parents and in-laws to look at how each of these independently affects mental health outcomes.

Conclusion

The experience of multiple and different types of trauma in conflict-settings affects family relationships and may lead to rejection of survivors of trauma including those that have experienced sexual assault. Both exposure to conflict-related violence and family rejection had independent, significant relationships with poor mental health. Future studies should explore whether family rejection mediates the relationship between trauma and mental health outcomes. Further, exploration of how family rejection effects access to social services including health care and economic opportunity is important given that survivors in other studies have described the multi-dimensional aspects to family rejection. The study findings indicate that a relationship exists between exposure to multiple and different types of traumas on family relationships. The findings indicate a need for interventions to understand and address family dynamics and address trauma experience more broadly instead of exclusive services for one type of trauma at the expense of other trauma exposures associated with poor health outcomes.

Table 4.1: Descriptive Statistics amongst female participants in Pigs for Peace that have experienced at least one conflict-related trauma in the past 10 years; Walungu Territory, South Kivu Province

	Frequency	Percent
Village (N=315)		
Karhagala	33	10.48
Kamisimbi	46	14.60
Cagombe	2	0.63
Cahi	55	17.46
Lurhala	4	1.27
Kahembari	52	16.51
Irhaga	76	24.13
Karherwa	6	1.90
Cize	12	3.81
Izege	29	9.21
Current Age Group (N=315)		
15 – 19 years	6	1.90
20 – 24 years	46	14.60
25 – 34 years	89	28.25
35 – 44 years	71	22.54
45 – 60 years	93	29.52
> 60 years	10	3.17
Current Marital Status (N=314)		
Married	218	69.43
Widowed	72	22.93
Separated/Divorced/Abandoned	19	6.05
Never married	5	1.59
Education (N=315)		
Never went to school	216	68.57
Started, but did not complete primary school	46	14.60
Completed primary school	48	15.24
More than primary school	5	1.59
Symptoms of PTSD (N=308)		
Mean score (95% confidence interval)	2.22 (2.14, 2.30)	
Possible Range of average symptom score	(1 - 4)	
Symptoms of Depression (N=314)		
Mean score (95% confidence interval)	1.85 (1.80, 1.91)	
Possible Range of average symptom score	(1 - 4)	

PTSD and Depression were scored according to the standards laid out in the instrument. 16 different symptoms were used to understand symptoms of PTSD and 15 symptoms for depression.

Table 4.2: Frequency of experiencing individual and grouped traumatic events in the past 10 years amongst female participants that experienced at least one conflict-related traumatic event and provided information on past experience of family rejection (N=315)

	Frequency	Percent
Average number of traumatic events (range: 1 – 18)	4.64	(4.15, 5.14)
Material deprivation trauma	277	87.94
Ill health without access to medical care	224	71.11
Lack of food or water	212	67.30
Lack of shelter	78	24.76
Warlike condition (combat trauma)	166	52.70
Coercion	149	47.30
Forced separation from family members	99	31.43
Being close to death	76	24.13
Brainwashing	55	17.46
Forced isolation	47	14.92
Lost or kidnapped	38	12.06
Imprisonment	34	10.79
Violence to others	111	35.24
Unnatural death of family or friend	81	25.71
Murder of family or friend	70	22.22
Witness rape or sexual abuse	47	14.92
Murder of stranger	25	7.94
Bodily injury	105	33.33
Serious injury	69	21.90
Tortured or witnessed torture	61	19.37
Rape or sexual assault	49	15.56
Other types of sexual humiliation	32	10.16

Table 4.3: Frequency of experiencing family rejection amongst women that reported experience of at least one conflict-related traumatic event in the past 10 years

(N=315)

	Frequency	Percent
Ever experienced family rejection (husband, parents, in-laws)	60	19.05
Ever rejected by husband/male partner	44	13.97
Ever rejected by parents and/or in-laws	27	8.57

Table 4.4: Bivariate logistic regression between experience of at least one traumatic event in the past ten years and family rejection (N=315)

	Ever experienced family rejection		
	No. (%) that never experienced family rejection*	Odds Ratio	95% Confidence interval
Number of different traumatic events (1–18 events)		1.09	1.03, 1.15
Material deprivation trauma	54 (19.49%)	1.29	0.51, 3.24
Warlike conditions trauma	35 (21.08%)	1.33	0.75, 2.34
Violence to others trauma	29 (26.13%)	1.97	1.12, 3.49
Coercion trauma	38 (25.50%)	2.24	1.25, 4.00
Bodily injury trauma	31 (29.52%)	2.61	1.47, 4.64

*comparison of number and percent of participants rejected by family who experienced specific traumatic events compared to those who did not experience the traumatic event

Table 4.5: Multivariate linear regression of severity of PTSD symptoms and experience of at least one traumatic events in the past 10 years and family rejection (N=308)

	B	Standard Error	β	p-value	Adjusted R²
MODEL 1					
No. of different traumatic events (1–18 events)	0.07	0.01	0.43	0.000	0.276
Family rejection	0.39	0.09	0.22	0.000	
Age in years	0.09	0.03	0.15	0.003	
MODEL 2:					
Material deprivation trauma	0.14	0.12	0.06	0.243	0.101
Family rejection	0.51	0.10	0.28	0.000	
Age in years	0.09	0.03	0.15	0.005	
MODEL 3:					
Warlike conditions	0.30	0.08	0.21	0.000	0.141
Family rejection	0.49	0.10	0.27	0.000	
Age in years	0.09	0.03	0.15	0.005	
MODEL 4:					
Coercion	0.45	0.07	0.31	0.000	0.194
Family rejection	0.43	0.09	0.24	0.000	
Age in years	0.08	0.03	0.14	0.008	
MODEL 5:					
Violence to others	0.46	0.08	0.31	0.000	0.193
Family rejection	0.44	0.09	0.25	0.000	
Age in years	0.09	0.03	0.15	0.004	
MODEL 6:					
Bodily injury	0.63	0.07	0.42	0.000	0.269
Family rejection	0.37	0.09	0.21	0.000	
Age in years	0.09	0.03	0.14	0.004	

Table 4.6: Multivariate linear regression of severity of Depression symptoms and experience of at least one traumatic events in the past 10 years and family rejection (N=308)

	B	Standard Error	β	p-value	Adjusted R²
MODEL 1					
No. of different traumatic events (1–18 events)	0.02	0.01	0.22	0.000	0.214
Family rejection	0.44	0.07	0.34	0.000	
Age in years	0.07	0.02	0.17	0.001	
MODEL 2:					
Material deprivation trauma	0.09	0.08	0.06	0.254	0.171
Family rejection	0.49	0.07	0.38	0.000	
Age in years	0.07	0.02	0.17	0.001	
MODEL 3:					
Warlike conditions	0.06	0.05	0.06	0.226	0.171
Family rejection	0.48	0.07	0.37	0.000	
Age in years	0.08	0.02	0.17	0.001	
MODEL 4:					
Coercion	0.12	0.05	0.12	0.021	0.182
Family rejection	0.46	0.07	0.36	0.000	
Age in years	0.07	0.02	0.17	0.001	
MODEL 5:					
Violence to others	0.14	0.05	0.14	0.009	0.186
Family rejection	0.47	0.07	0.36	0.000	
Age in years	0.07	0.02	0.17	0.001	
MODEL 6:					
Bodily injury	0.34	0.05	0.32	0.000	0.266
Family rejection	0.41	0.06	0.32	0.000	
Age in years	0.07	0.02	0.16	0.001	

Table 4.7: Descriptive statistics on female participants who reported having ever been sexually assaulted

	Frequency	Percent
Number of women reporting sexually assault, ever (N=701)	51	7.27
Report being rejected by any family member (N=51)	16	31.37
Report being rejected by husband (N=33)	13	39.39
Report being rejected by parents (N=36)	4	11.11
Report being rejected by in-laws (N=29)	6	20.69
Report being rejected by children (N=47)	1	2.13
Number of times assaulted sexually		
One time	34	66.67
Two times	5	9.80
Three times	8	15.69
Four or more times	4	7.84
Most recent sexual assault was witnessed (N=51)	27	52.94
Witnessed by husband	4	7.84
Witnessed by parents	2	3.92
Witnessed by children	9	17.65
Witnessed by other family members	9	17.65
Witnessed by friends	7	13.73
Ever abducted by perpetrators of sexual assault (N=51)	43	84.31
Number of different perpetrators in most recent sexual assault		
One person	20	39.22
Two people	7	13.73
Three people	11	21.57
Four people	5	9.80
Five people	5	9.80
Six or more people	3	5.88
Place of most recent sexual assault		
Forest	23	45.10
Home	22	43.14
Other (in field, on route, market, etc.)	6	11.76
Family possessions were taken during most recent sexual assault (N=51)	38	74.51
Animals were taken	27	52.94
Money was taken	15	29.41
Business materials	13	25.49
House	1	1.96
Agricultural products	13	25.49
Other	17	33.33
Had a child from sexual assault (N=51)	12	23.53
Sought medical care after most recent sexual assault (N=51)	33	64.71
3 days or less	11	33.33
4 – 7 days after assault	5	15.15
More than one week, but less than 6 months after assault	12	36.36
Between 6 months to 1 year after assault	3	9.09
One year or more after the assault	2	6.06

Table 4.8: Experience of ever being rejected by a family member amongst women who were sexually assaulted

	No. and percent ever rejected by a family member (N=51)	Chi Square	P-value
Number of times raped			
Once	8 (23.53%)	4.41	0.036
More than once	9 (52.94%)		
Most recent sexual assault was witnessed		12.75	<.0001
Yes	15 (55.56%)		
No	2 (8.33%)		
Ever abducted by perpetrators of sexual assault		0.07	0.785
Yes	14 (32.56%)		
No	3 (37.50%)		
Number of perpetrators in most recent sexual assault		8.06	0.005
One	2 (10.0%)		
More than one	15 (48.39%)		
Location of most recent sexual assault		1.94	0.164
Home	10 (43.48%)		
Away from home (e.g., forest, field, market, etc.)	7 (25%)		
Possessions were stolen during most recent sexual assault		0.05	0.820
Yes	13 (34.21%)		
No	4 (30.77%)		
Had a child as a result of sexual assault		7.85	0.005
Yes	8 (66.67%)		
No	9 (23.08%)		
Sought medical care after most recent sexual assault		0.39	0.534
Yes	12 (36.36%)		
No	5 (27.78%)		

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Chapter 5: Intimate partner violence perpetration and victimization in post-conflict Democratic Republic of Congo: Risks, individual and family consequences, and community-based solutions (Paper 3)

Abstract:

Background: Intimate partner violence (IPV) is the most widespread form of violence against women. Intimate partner violence may be elevated in post-conflict settings where men and women have been exposed to conflict-related trauma. Rural villagers living in eastern Democratic Republic of Congo have endured more than 16 years of war. This study explores, in-depth, IPV perpetration and victimization; individual and family consequences of IPV perpetration and victimization; and community-driven solutions to IPV perpetration and response in rural eastern Democratic Republic of Congo.

Method: This study was conducted in three rural villages of South Kivu Province with adult male and female participants in an impact evaluation of a Congolese-led livestock based microfinance program. Women (13) and men (5) reporting IPV victimization or perpetration were purposively selected. One-on-one in-depth interviews were conducted in local languages and followed by debriefing with interviewers. Analysis was informed by grounded theory and included open and focused coding, writing of memos and organizing codes into categories to identify relationships within and between codes.

Results: Social and behavioral risk factors for IPV included consumption of alcohol, perceived non-fulfillment of the woman's marital duties, male obligation to correct women, distrust and financial stress. Individual and family consequences of IPV included poor physical and mental health, social isolation of the family, poor child development and behavioral outcomes. Participants described a community and cultural acceptance of IPV and community disdain for IPV. Participants described their strategies to reduce IPV and associated harm to include placating behaviors and men's use of perceived less harmful forms of IPV. Acceptance and desire for family based intervention and improved outcomes for children present an opportunity for interventions.

Conclusion: Common risk factors for IPV, like alcohol consumption and unemployment, may be elevated in post-conflict environments. Family and community-based solutions to IPV should be developed in partnership with local communities, address the multi-level outcomes of IPV perpetration or victimization and address social discrimination.

Introduction

Intimate partner violence (IPV) is the most pervasive form of violence against women globally [1]. The World Health Organization (WHO) defines IPV as “behavior within an intimate relationship that causes physical, sexual or psychological harm, including acts of physical aggression, sexual coercion, psychological abuse and controlling behaviors” [2]. The WHO multi-country study on IPV against women estimated a lifetime prevalence of physical and/or sexual IPV between 15-71% in 10 countries [3]. IPV is rarely a one-time event; instead, the use of violence is often indicative of a pattern of violence and abuse and involves the use of multiple forms (sexual, psychological, physical) of IPV with psychological abuse, including coercive control and fear is described as more difficult for women to endure than physical violence [1]. Data show that the impact of IPV on the survivor is both immediate and long lasting, with negative health, economic and social outcomes. The negative physical, mental and reproductive health effects of IPV include miscarriage, suicidal thoughts and attempts, depression, sexually transmitted diseases including HIV, vaginal bleeding, injury, death, disability, fatigue and pain [4-9]. IPV is associated with difficulty completing daily activities [4]. Infants and children whose mothers are IPV survivors are at increased risk for diarrheal diseases [10], respiratory tract infections [10] and under-five mortality [11]. IPV survivors and perpetrators report exposure to IPV in their childhood [12] indicating the long-term impact of exposure to IPV in childhood on adult outcomes [13].

Risk factors for IPV have been studied in different countries and multiple settings including urban, rural and conflict settings; the results confirm that risk for IPV vary across culture, geography and context. Risk factors in one setting may be protective in another, and men exposed to the same types of violence and abusive situations and messages do not all become violent [14, 15]. Heise adapted and proposed an integrated, ecological framework

[14] as a means to understand and explain the multi-level risk factors for IPV. The range of risk factors that have shown association with increased IPV perpetration or victimization include individual factors such as exposure to parental or caregiver violence, personal experience of violence, absent or rejecting father [12, 14, 16, 17]. Microsystem risk factors for IPV perpetration or victimization include male dominance in family decision-making, frequent marital conflict, polygamous partners, heavy alcohol consumption [1, 16-19]. Mesosystem risk factors include female isolation, poor peer association, lower educational achievement, socio-economic status or unemployment although violence occurs across economic strata and the underlying factor may be stress, crowding, frustration or a sense of inadequacy rather than unemployment itself [1, 20]. The association of masculinity with male toughness and honor, rigid gender roles and male and female acceptance of the use of violence against women are examples of macrosystem risk factors for IPV [1, 18, 19]. With more than one-and-a half billion people living in areas affected by conflict, fragility or large-scale violence [21], a better understanding of the multi-level factors that increase risk for and outcomes related to IPV in these settings is critical for post-conflict development interventions.

Social and cultural factors influence the experience of IPV [22, 23]. Where institutional facilities exist (e.g., health care centers, police, legal), women may not be aware of or may choose not to access services due to cultural acceptability of the service, lack of non-judgmental service provision, fear of stigma and fear of partner retribution [24, 25]. For example, African refugees living in a refugee camp in north-west Kenya participated described preference for community-driven solutions through marital counseling by different family and community members rather than separation or divorce. Their last option for assistance with IPV was reported as agencies working in the camp settings and

Kenyan police [25]. In a study with Nigerian and Ghanaian immigrants to Australia, women who experienced IPV described how, in their home country, their extended family members mediated problems and conflicts in the relationships including IPV. Displacement to Australia had severed access to these family-based mediations resulting in IPV survivors reporting that they ‘suffered in silence’ rather than seek institutional based services [26]. Similarly, preference for traditional family and community-based solutions to IPV have been expressed by Ethiopian refugees [27], low-income mothers attending health clinics in Mumbai [28] and Cambodian immigrant women living in the US [29]. A better understanding of traditional, culturally acceptable family and community based support structures to respond to IPV is essential for the development of effective and acceptable prevention and response interventions [30, 31].

IPV in conflict-affected populations may be related to traumatic events experienced by the perpetrator and survivor, displacement of families, disruption to traditional support systems and economic instability. In a cross-sectional study with male and female guardians of 2nd-grade students from communities exposed to conflict-related violence in northern Uganda, increased IPV was associated with women’s exposure to conflict-related events, increased female re-experiencing symptoms related to the trauma of the events and male partner drinking behavior. Overall, 86% of women reported at least one type of IPV (physical, psychological, sexual) in the past one year with 43% being afraid of their male partner [32]. A recent nationwide, household survey conducted in Liberia nearly ten years after war examined the lasting impact of war experiences on use of physical IPV in relationships and mental health outcomes. Nationwide, 37.7% reported severe physical IPV (e.g. beatings, strangulation, use of weapon) during their lifetime. Male perpetrators and female survivors of severe physical IPV were more likely to have had direct exposure

traumatic events during the conflict (e.g. witnessed violence, experience violence) and taken part in the conflict, perpetrated violence against another. Women who reported more security, better family relations and increased age were less likely to report experience of severe physical violence [33]. A recent report by the International Rescue Committee (IRC) on IPV in Liberia, Sierra Leone and Cote d'Ivoire discussed how war-related violence is associated with women's increased fear of partner, isolation and reduced productivity [34]. Studies with Lebanese women [35], South African men who have experienced human rights violations [36], Eritreans living in refugee camps [37], and men who have experienced political violence [38, 39] also describe an association between exposure to traumatic events and increased IPV perpetration or victimization.

Research aims: The study will explore with rural men and women who have experience conflict-related trauma: 1) IPV perpetration and victimization; 2) individual and family consequences of IPV perpetration and victimization; and 3) community-driven solutions to IPV prevention and response in rural villages.

Methods

The qualitative study was conducted with adult male and female participants in the NIH/NIMHD funded impact evaluation of the livestock microfinance intervention, Pigs for Peace (PFP). PFP is a microfinance intervention implemented in a action research partnership between Programme d'Appui aux Initiatives Economiques (PAIDEK) based in Bukavu, DRC and Johns Hopkins University School of Nursing. The parent study is testing the effectiveness of a livestock microfinance program on health, economic and social outcomes with over 800 families in 10 rural villages.

PFP Microfinance Intervention: PFP provides loans to consenting adult male and female head of households randomized to the intervention group in the 10 study rural villages. The loan is in the form of a 2 to 4 month-old female pig. Each intervention participant complete a training program on the microfinance model, construction of a pigpen and compost, as well as caring for the pig. PFP Congolese research and microfinance agents (i.e., PFP agents) and their trained village-based assistants complete the training and provide on-going support through regular home visits and group meetings with intervention participants. When the pig gives birth, participants in the intervention group repay their loan in the form of two female piglets, which are then provided by PFP as new pig loans in the same village to the delayed control group members. After repaying their loan, the remaining piglets and the original female pig are owned by the intervention group and they can decide how to proceed [40].

Village Selection and Study Recruitment: The 10 villages for the impact evaluation were selected for participation in PFP based on: 1) feasibility of delivering an intervention over a wide geographic area; 2) permission to work in the villages and commitment to the intervention and study by traditional chiefs and administrators; and 3) findings from a village-level assessment conducted by our team with a focus on administrative data and semi-structured interviews with key stakeholders to understand village resources, development-related needs, security concerns and existence of other microfinance interventions in the area. After PFP agents introduced the project and study to local leaders, received their consent and conducted awareness meetings in each of the ten villages, interested and eligible rural village residents (i.e., responsible adults 16 years and older that were committed to the microfinance principles and were permanent residents of the village), were randomly assigned to intervention or delayed control groups. Participation was limited to one member (male or female) head of household.

Qualitative Study participants: Male and female participants randomized to the delayed control group in 3 (Cagombe, Izege, Kahembari) of 10 parent study villages were purposively selected for this qualitative study based on female report of IPV victimization and male report of IPV perpetration on the baseline questionnaires. The targeting of three villages was needed because of the large geographic area of the 10 villages and the in-depth nature of the interview. Further, the three villages ensured that the sample was large enough to provide variation in experiences and reach saturation related to study aims [41, 42]. An iterative process including debriefing post-interview, revising questions and assess if new information is being gained from in-depth interviews resulted in the final study sample. At the time of implementation of this qualitative study, participants in the delayed control group had not yet participated in PFP training or received their pig loan.

Data collection procedures: The interview guide was developed, translated to French and local languages (Swahili, Mashi) and implemented in partnership with skilled Congolese team members working with the parent study. The interview guide included questions on IPV perpetration and victimization; individual and family consequences of IPV perpetration and victimization; and community-driven solutions to IPV prevention and response in rural villages. For individuals that reported a personal experience of IPV in the in-depth, qualitative interview, follow-up questions were asked about their personal experience of IPV, individual and family consequences of IPV, and mechanisms of ensuring safety or reducing incidence of violence. Five PFP Research and Microfinance agents (i.e., PFP agents) were trained over a 2-day period on research aims, the interview guide, qualitative research methods and documentation. They practiced introducing the study, obtaining consent and conducting interviews. Four pilot qualitative interviews were conducted with members (3

women, 1 man) of the PFP demonstration project in villages not associated with the parent study.

Fieldwork for the study was conducted over a three-day period in February 2013. The study was introduced as focused on understanding experiences of IPV within the village and opportunities to address this issue in rural villages of South Kivu province. To ensure discretion, the study was conducted when PFP agents were in the villages to provide their regular follow-up visits for the parent study. Interviews were conducted in Swahili or Mashi and PFP agents recorded responses to each question in French. The interview transcripts were translated from French to English for team analysis. Debriefing after each interview was used to understand key themes, opportunities for follow-up questions in future interviews, challenges and whether the data was progressing towards saturation.

Research ethics: The Institutional Review Board (IRB) of the Johns Hopkins Medical Institute approved of the parent study. As there is no local IRB in South Kivu province, a committee of respected educators at the Universite Catholique at Bukavu reviewed and approved of the parent study, risks and benefits to the participants. Interviews were initiated after individuals provided oral, voluntary, informed consent. The parent research team selected eligible male and female participants for this qualitative study from the parent study. For the interview, to ensure confidentiality of data, only identification codes for the participants from the parent study were recorded on the transcripts. As interviews were conducted during times when members would be earning their daily income, compensation for the time spent away from work was provided as per local rates, approximately 2.00 USD. All interviews took place in a private setting of the respondent's choice, most often their home.

Data analysis: Analysis of this study was informed by grounded theory methods that were first developed by Glaser and Strauss and adapted by Charmaz [43]. Grounded theory involves an iterative process of data collection and analysis. Initial analyses are used to inform future areas of inquiry to help fill gaps in understanding and further develop a theory [43]. There were some adaptations of grounded theory to fit the study focus and logistical needs. For example, the individuals were selected for the study based on reports from quantitative data – as a result, the sample of eligible individuals was limited to men and women in three villages who reported either IPV perpetration or victimization. Debriefing was held separately with each interviewer at the end of each fieldwork day instead of after each interview. This facilitated the PFP agent the flexibility to plan interviews in different villages and helped ensure confidentiality because debriefing by the team was done in a separate site, away from the participating villages. Initial open coding involved a careful reading of each transcript. Categories of common themes related to IPV perpetration and victimization, individual and family consequences of IPV perpetration and victimization and community-driven solutions to IPV prevention and response were developed. Memos described the depth of and variation between focused codes. Focused codes were grouped according to research aim to identify relationships within and between categories and by reported IPV victimization or perpetration. Notes from debriefing, which included the PFP agent perspective on key themes from each interview and overall understanding of the data, facilitated interpretation.

Results

Thirteen women survivors of IPV and 5 male perpetrators of IPV participated in this study. Study findings are presented according to three themes identified from the analysis: (1) social and behavioral circumstances that increase risk for IPV; (2) Social, health and economic

consequences of IPV on women and their families; and (3) Individual, family and community resources to protect women and their families.

Social and behavioral circumstances that increase risk for IPV: Both married men and women described the use of physical and emotional violence and controlling behavior as common in relationships, and sometimes necessary for discipline of the wife but also problematic in marital relationships. Men and women described the wife's marital duties to include having sexual intercourse with her husband regardless the wife's circumstance (illness, pregnancy, fatigue) or desire. Further, women reported having sexual relations with their husband when not desired to maintain a peaceful relationship, avoid the husband's use of physical violence to force sex, reduce possibility of or justification for male infidelity or accusation of the wife's infidelity; and fear of negative judgment of the wife if her husband informed his or her family that she was refusing sex.

Male and female participants described similar social and behavioral factors related to IPV perpetration. These included, husband's consumption of alcohol; female disobedience and disrespect to husband; husband's role and obligation to correct women and maintain status as authority and head of household; distrust or infidelity in the relationship; and financial stress and unemployment. Almost all participants described alcohol as a "cause" of IPV directly through use of physical and sexual IPV and indirectly through increased marital conflict related to male alcohol consumption. Wives expressed feeling both humiliated due to concern of what their husband's may have said to community members about his wife and family in his drunken state and fearful of his return home because of the potential for violence. For example, one female participant explained that, while drinking alcohol, men "can speak about anything without remembering including his wife's body and household secrets" (Kahembari village, female participant).

There were a variety of female behaviors that were considered disobedient by husbands justifying their use of violence. These behaviors included arriving home late in the day, not preparing food at the time the husband is ready to eat, leaving the house without permission from the husband, not cleaning the house properly as determined by the husband, refusal to work, correcting or being rude to her spouse, and not completing household duties as assigned by the husband. Both male and female participants described the use of IPV and controlling behaviors in a relationship as a necessary means to improve female behavior to respect to her marital responsibilities, “men who hit their wives have reasons for doing it and they are not wrong. It could help her change, because a woman who is beaten will change her behavior” (Izege village, male participant). One man explained that IPV is a necessary result of situations when his wife does not complete her household duties or when she speaks in a manner that is perceived as disrespectful to his position in the household. He explained that her actions and language affected his self-confidence and challenged his authority, “it destroys me. She doesn’t respect my dignity. A woman has to respect her husband” (Cagombe village, male participant). He further noted that the use of IPV restored his place as head of the family and his self-confidence. Women in the study also stated that IPV could occur without reason or cause. One participant explained that her husband’s temper flared without explanation, “it starts from nothing. If I don’t sweep the house, it is not arranged well or the food is not ready” (Izege village, female participant). Women noted that IPV seemed unpredictable with rapid escalation to a violent and potentially severe outcome.

Participants discussed issues of trust in the relationship related to fidelity as a reason for IPV. Wives are expected to ask their husband’s permission before leaving the house and to limit their social interaction, especially with men in the community. Female participants

reported their concern about their husband's fidelity in the relationship. Women also noted that if a husband was not happy with his wife, he might marry another women, as polygamy is accepted in the community. Female participants suggested that husbands insulted and abused their wives in public to demonstrate to the community that the wife was not capable of meeting her household and social obligations as a wife and therefore justified his marriage of second wife. Financial stress and male unemployment also led to increased tension and marital conflict. One woman explained that unemployed men were "always turbulent" (Kahembari village, female participant).

Health, economic and social consequences of IPV on women and their families: All male and female participants described the negative impact of IPV perpetration and victimization on health, economic and family and social relationships. Several female participants noted that psychological IPV (e.g. insults, humiliation, threats of violence), at home and in public, as IPV with a lasting negative mental health and social outcomes. Women reported multiple physical and mental health symptoms such as increased fatigue, persistent fear of their husband, bad thoughts about themselves and others, weakness, injury, miscarriage, hospitalization, hunger and other health complications due to IPV experience. Women noted impact of living in fear on her ability to care for her family, For example, one participant described trembling with fear each time she saw her husband due to his violent behavior towards her. She described how this negatively affected her strength to care for her children, farm to bring food into the home and complete her household duties, such as cleaning and washing. Further, participants noted that IPV in their relationship limited their ability to plan for a better future together often resulting in extreme poverty, household instability and neglect of children, such as not sending children to school. One participant

explained, “when a man is violent towards his wife, it is difficult for things to advance for the family because there is no peace” (Cagombe village, male participant).

Women and men participants discussed how children in abusive homes suffered from a lack of proper parental guidance, and the lack of safety and stability in the home. Children living in violent households were described as malnourished, poorly educated, lacking parental guidance and love, living with high stress, fear and illness. Parents, both husband and wife, worried about their children misbehaving and adopting their father’s violent behavior; as a result, mothers advised their children to respect their father but not to imitate his behavior. Women and men described strategies they used to reduce or protect their children from the IPV, such as limiting IPV to the parent’s bedroom; nevertheless, children could hear the sound and witness the result of violence on their mother. Parents described children in violent homes as “lacking in education and good health; the affection of their parents; and role models of adult behavior all of which are important for creating a good future for children” (Cagombe village, male participant). This lack of parental guidance exposed the children to a range of negative behaviors in the community and increased their risk for becoming involved in activities that increase their risk for violence. One woman described a violent household as “empty”. She explained that the children, especially girls, from violent homes experience stigma by others in the community, for example, “they are not taken for marriage because people are scared of the house (that they come from)” (Izege village, female participant). Mothers are often labeled in the family and community as irresponsible due to their child’s misbehavior, thus illustrating how the impact of violence extends beyond the survivor to include family members and social relationships. While most men and women in the study described IPV as leading to negative outcomes for the entire family, many also felt that men were entitled to be violent, due to their gender and position

as head of the household. One man explained that the use of IPV was necessary to maintain gender roles in the household, “if a man doesn’t use violence against his wife, there is a risk that the woman will become the head of the household in place of her husband” (Kahembari village, male participant).

Most participants described family and community members who tried to support and assist families, for example community members assisted the family with basic needs (e.g., food, clothing) and counseled the couple to try and end the violence. However, they also described family and community members who would gossip about the IPV with others in the community and isolated the family from social interactions by not visiting the family or inviting the family to social events, when the IPV did not stop. This social isolation affected all members of the household. One woman explained that IPV can “result in lack of respect for the whole family...there are people who stop visiting these families. The man is considered useless for society and people neglect him because he cannot help the community” (Izege village, female participant). Households with on-going IPV even after family and community intervention were held as models of poor behavior in the community. The impact of IPV on social interaction was a serious concern for both men and women in the study. In rural village communities in the DRC, family and social relationships are essential to individual and family well being. Although study participants were not asked to describe situations of severe violence, some explained that any type of IPV occurring outside the home or in front of family or community members (including insulting the woman when she was not present) as having a negative impact on the family, often worse than if the IPV was a “secret” in the household. IPV occurring in places where family and community members could witness the violence was associated with more severe violence because of the public humiliation and potential for social isolation due to the violence. One woman

explained that IPV most often takes place in the house, but may occur in public settings when a man thinks that his wife has not changed her behavior. As a result, well-educated men were considered those that protected the “secret” of IPV by “calling his wife far from the children or neighbors before correcting her” (Kahembari village, female participant).

Individual, family and community resources to protect women and their families: Participants described different strategies that can be used within the household to reduce the incidence and severity of IPV. Many of the individual strategies to reduce IPV involved the woman’s use of placating behaviors including changing her own behavior or ignoring concerns about her own and/or family well-being to keep her husband calm. When asked about solutions to IPV, one man explained, “a woman must stop doing the things that make her husband become violent and do all that she can to ensure that her husband is relaxed. If the wife knows that she has provoked her husband, than she should apologize” (Izege village, male participant). Both men and women explained that women should ensure that they abide by their husband’s needs (e.g., serving food at the correct time, cleaning and caring for him), remain calm and quiet, demonstrate submission and only leave the house with his permission in order to reduce IPV perpetration and victimization. One woman explained, that to keep a man calm, a woman has to treat her husband like a child, “she cannot speak in just any manner to her husband. The husband is like a child and we have to care for him at every moment, otherwise his temper will flare” (Izege village, female participant). Another participant stressed that women should “place water in their mouths” as a way of describing the need to remain quiet when their husband’s were angry and abusive. To physically protect themselves and their children, some women would leave or send their children out of the house when their husband was violent. Male participants described limiting themselves to psychological IPV and controlling behaviors (e.g., limiting access to money, isolating his

wife) in order to reduce the need to use physical violence. One man, who stated that his use of IPV was linked with alcohol consumption, explained that he would go to bed, without talking to anyone, after drinking. Another left the house each time he felt upset so as not to abuse his wife. The strategies men and women in the study described to prevent or reduce the severity of IPV do not address the underlying factors associated with IPV in many global settings, such as gender inequality. Participants noted that communication between the couple about household decisions and problem solving as essential to reducing IPV including applying the advice that they received from family and community members to improve their lives

Participants identified resources within the family and community that can be used to prevent and respond to IPV. For example, men and women participants looked to the husband's parents, his siblings and the couple's marital advisors to provide advice on overcoming conflict in the relationship and planning for their future. If the advice and support of these close advisors did not prevent or reduce the IPV, community and other family members (e.g., wife's family, religious leaders, traditional chief, respected members of the community and friends) could be asked for advice and support. The support was described as the family and community members trying to understand the source of the couple's problems while simultaneously explaining that IPV created instability and insecurity for family members and could destroy the household. They provided advice individually or to the couple on how to prioritize the family, rediscover their love, communicate and focus on the needs of the children and the family. Women were often advised to be patient and to better meet their husbands needs. One woman explained the limits of counseling as men must "apply the good advice that they have received...otherwise the violent spirit will always remain with him" (Cagombe village, female participant). A man who participated in

counseling with his wife by family member and subsequently tried to reduce his use of IPV against his wife described his struggle to control his temper, “when I see my wife make a mistake, I scold her strongly and then I calm down. I cannot keep it in my heart; I only calm down after I have spoken” (Cagombe village, male participant). Women reported being able to stay with their in-laws or parents home for safety and assistance. Returning to the parental home was not preferred by women as she risked losing her children or returning to a home where her husband has remarried. In couples where IPV remained unresolved, women and men could seek a separation or men could seek a second wife. Most women feared this solution; they wanted the violence, not their marriage, to end.

While family and community resources may exist, accessing them can be challenging because IPV is considered a household problem and a family secret. Both men and women were reluctant to share their IPV perpetration or victimization with others for fear of exacerbating the problem or social judgment. By sharing their family problems with community members, men and women also noted that not all the advice is helpful and sharing information on IPV results in the subject of gossip, experiencing isolation and discrimination in the community. Some men and women identified community resources in the form of counseling by traditional chiefs, respected community members and close friends as a traditional intervention to resolve marital problems including IPV. They explained that these community resources had deteriorated due to male alcohol consumption, lack of strong local leadership, and lack of trust within families and between community members. One woman described this loss of community resources, “the community should advise the man, but here, curiously, the community doesn’t do anything. They are only there to aggravate the situation and drink” (Kahembari village, female participant). In addition to lacking community support to resolve use of IPV, interaction

with certain community members may negatively impact the household relationship. Participants expressed concern about male drinking patterns in the village and advice from friends that support or maintain the violence in the relationships. Such advice included encouraging the man to use IPV to control his wife, to separate from his wife or to marry another woman all of which are likely to escalate IPV in the household.

Most women participants did not believe that IPV could be prevented in their household or community. One woman explained that the social humiliation she felt and experienced as a result of IPV caused her to “hate” her husband, but she felt she was without an alternative to leave the relationship. She stated, “the slave cannot leave her place” (Izege village, female participant). Another woman explained that an individual wife/woman could not prevent or respond to IPV alone, she needs assistance, “we cannot react alone. We women are sometimes scared of things; we need others to help us” (Izege village, female participant).

Women participants described the need for interventions in their community to teach men to be responsible husbands and fathers, resolve problems through dialogue and take part in activities that were helpful to the family (e.g, reduce alcohol consumption). Participants thought that interventions should mobilize communities to respond to IPV and to engage families and communities to provide advice and counseling to overcome violence. Economic interventions were suggested as necessary for improvement of the family and reduction in household stress that is associated with IPV. Women did suggest that female employment outside the home could improve her position in the household, although research has also demonstrated that an increase in status in the household can increase conflict in the relationship, as a husband can become concerned about the changing roles and responsibilities of the wife in the household [44]. Few women thought legal punishment

(e.g. imprisonment) for the abusive partner was a desirable or an available outcome, because of the impact this had on the family including potential loss of economic resources, lack of a father figure for children and social isolation due to judgment associated with male imprisonment. Yet, two men described fear of imprisonment as a reason for their preference for controlling behaviors and psychological IPV over physical IPV.

Discussion

Research on IPV in conflict-affected countries and with populations that have experienced human rights violations have shown an association between experience of trauma and IPV perpetration or victimization. Changes in family and social structure, gender roles and lack of economic opportunity [27] may be exacerbated in post-conflict settings and contribute to risk for IPV. This study, conducted among adult men and women who had perpetrated or experienced IPV in rural eastern DRC, described the social and behavioral factors; multiple health, economic and social outcomes; and solutions and barriers to community-driven solutions to IPV. Frequently reported risk behaviors for IPV in the study participants and other studies include alcohol consumption, polygamy, unemployment of men and women, economic instability in household, male desire to maintain his position as head of the family, disrespect of male spouse towards wife and perceived non-completion of household duties by wives [12, 32, 44, 45]. Amongst conflict-affected populations, elevated alcohol consumption [46, 47] and economic instability (male unemployment, lack of female economic opportunities) have been documented as elements of the post-conflict environment and linked with IPV [48]. These behavioral and economic factors may contribute to the elevated risk for IPV amongst populations that have experienced conflict-related trauma and human rights violations.

Participants reported perpetration of and victimization by a partner using multiple types of IPV, including forced sex, occurring with physical force or psychological manipulation (e.g. threats of violence or fear by wife if she refuses that the husband will find another wife). However, women and men in the study, as in many global settings, noted that wives must accept sex with their husband regardless of their own needs, because sexual intercourse is her duty in marriage. As reported elsewhere [1], women in this study considered psychological abuse to have long-term negative outcomes because it was detrimental to their self-confidence thereby affecting their ability to be a good parent, to work effectively and to interact with others. Further, psychological abuse may occur in front of family and community members and with or without the presence of the woman. As a result, women feared judgment and discrimination by family and community members including that others would consider them to be not be good wives, would mock or avoid them and counsel their husband to find another partner.

Women who experience IPV in other settings have reported fear of judgment, isolation and discrimination as limiting their access to community-based and institutional support services [26]. Traditionally, IPV in DRC, as in many other settings, should be kept a family secret with men and women seeking assistance only from close family members, community leaders or friends, if they seek assistance at all. Awareness of IPV in a household by the larger family and community may lead to social isolation of all family members, husband, wife and children. Social isolation due to IPV includes exclusion from communal activities and decision-making, discrimination against and avoidance of members of the household and lack of support in times of need.

Both men and women described the negative mental, physical and reproductive health effects of IPV. Participants described households with IPV as unable to progress or

have stability in their lives. A cross-sectional study in Sri Lanka with children exposed to war reported that family violence (e.g. child abuse, child witnessed IPV) was more strongly related to child PTSD outcomes than exposure to conflict related to the war [49]. In addition to child health outcomes reported in this study and elsewhere [10, 50], parents in abusive relationships in this study expressed concern over their children's development and behavior. Male and female participants made an effort to hide IPV from their children by trying to limit IPV to their bedroom or times when children were sleeping, but as a strategy, this is rarely effective, as children often hear or witness the IPV even if the parents do not believe they are aware. Research has demonstrated that children can experience negative health and social effects of IPV regardless of whether they directly witness the IPV or not [11, 51].

Participants described individual, family and community-based efforts to prevent and respond to IPV. The majority of female and men participants described women's use of placating behaviors (i.e., strategies to change the male partners violent behavior without challenging his sense of control) [52] including remaining quiet, serving food at the time their partner wanted, demonstrating submission and not resisting the husband's demand for sex. Women participants suggested that the wife should ignore her own concerns for safety and well-being, with the hopes that the husband will use less harmful types of IPV. Participants thought that these placating strategies may prevent and reduce IPV in the short-term although other studies show that placating behavior may not affect abuse [52]. None of these placating strategies respond to the underlying social norms that allow and maintain IPV in the household and community. Some men described a preference psychological IPV and controlling behaviors to the use of physical IPV as a means to protect their wife from negative health outcomes and reduce the possibility of her seeking legal recourse. These

strategies included limiting women's social contact and access to financial resources, manipulation, the use of insults and public humiliation. Some of these strategies may isolate women further from her family and community based support both by the male partner limiting her contact with friends and family outside of the house and the woman limiting her social interaction through fear of stigma associated with public humiliation and loss of self-confidence.

Research shows a possible evolution from the use of private strategies to reduce violence (including placating and resistance behaviors) to accessing informal and formal support structures as the severity of violence increases [52, 53]. Decisions to seek help and places where survivors of IPV seek support vary including by the availability and type of social support (formal and informal), non-judgmental service provision, severity of violence, coping strategies, cultural factors and economic dependency [25, 52-54]. Women in this study described community and family based social support that included reaching out to the husband's and their own family members, marital advisors, respected community leaders (religious leaders, local chief) and close friends. Decisions to reach out were informed by severity of violence, perceived ability to influence spouse behavior, concern with social stigma and discrimination from the individual providing support and the community and confidentiality.

Although participants in this study and in other research have expressed social and individual-level tolerance of IPV [50], men and women described IPV as disturbing individual and family stability and ultimately community development. This response may present an opportunity to strengthen family and community-based response to IPV through bringing community members together to identify the social norms that are harmful to girls and women and strategies to support men and women in healthy relationships and assist

those couples who are experiencing IPV. Interventions that focus only on women's empowerment without addressing her male partner may create gender imbalances and, unintentionally, increase risk for IPV [55]. Male and female participants in this study described a family-focused intervention including men and women as important to reducing risk for and outcomes related to IPV.

Participants in this study described family and community based 'counseling' and/or "mediation" as part of a traditional response to prevent and reduce IPV. Counseling and/or mediation focused on resolving problems through dialogue and prioritizing the family and child outcomes [56]. Most women described a need for men to be educated on their responsibilities towards their family, develop effective communication skills with the wife about household decisions, and engage the community to respond to prevent and resolve IPV. In other settings, two interventions that have been evaluated for effectiveness in addressing IPV and HIV included men and women through a combined microfinance and gender education intervention, IMAGES [57-59], and a gender education focused program called Stepping Stones [60]. Both reported reduced IPV rates related to their gender-based education component [61]. Shifts in gender norms and incidence of IPV are possible when interventions are carefully designed with community involvement and include key stakeholders including perpetrators and survivors of IPV [62, 63]. The inclusion of both women and men in the design and implementation of interventions may ensure lasting changes to underlying risk factors for IPV, consequences as well as provide strategies for prevention and response [64].

This study has several limitations. Although elevated levels of IPV have been reported in populations that have experienced war-related trauma, human rights violations and displacement, this study did not specifically ask participants about how their experiences

during the prolonged conflict effected their health outcomes, including IPV, and access to support services. In other studies, conflict-affected Congolese have described deterioration of family and community structures due to war [56, 65]. In this study, some participants described the loss of traditional community support systems as due to increased alcohol consumption, distrust between community members and lack of strong local leadership although this did explain the cause of the loss of support. It is possible that conflict and the outcomes of conflict have negatively affected traditional, community-based support systems for IPV prevention and response. This study focused on IPV perpetrators and survivors. Future research and formative work towards intervention development should include local leaders (e.g., religious leaders, traditional chief, administrators, health care professionals, etc.) and community members for a more comprehensive understanding of family and community-based support systems for IPV, messages to change IPV norms and provide counseling and education to couples.

Conclusion

Implementing culturally acceptable, community-based solutions to IPV is an opportunity in post-conflict environments where communities are already working towards strengthening relationships and rebuilding traditional structures. Both survivors and perpetrators of IPV expressed the negative health, economic and social impact of IPV on individuals and their families. Cultural and social acceptance of IPV, simultaneous disdain for IPV and women's requests for assistance indicate that communities need support in improving on family and community-based systems. Women and men described the use of placating behaviors in the household as a strategy employed by women to reduce violence. Men perceived psychological IPV and controlling strategies as less harmful means of asserting their power although women described these strategies as more damaging and

long-lasting. Family focused interventions may present an opportunity to reduce IPV in rural eastern DRC where both men and women were disturbed by the negative health and social impact of violence on children. In addition to education and counseling programs, integrating services with strategies to address other post-conflict contextual factors that increase risk for IPV such as elevated substance use, changing gender roles, trauma and economic instability should be explored. Interventions should be developed and implemented in a participatory manner, including input of a range of community members (men and women) including IPV perpetrators and survivors, and address the individual, family and community risks and outcomes of IPV.

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Chapter 6: Summary of Findings and Recommendation

Introduction

This research focuses on family relationships and social interaction in the aftermath of more than 16 years of conflict, resulting in high levels of conflict-related trauma, economic instability and limited access to social and health services in rural eastern Democratic Republic of Congo (DRC). Findings from this study and other conflict-settings point to the need for a broader, more holistic understanding of the impact of conflict on rural communities [1-3]. The overall goal of this research was to understand the effects of multiple and different types of trauma during a period of conflict on family relationships and social interaction in rural Walungu Territory, South Kivu province, eastern DRC. The study was designed in response to requests from rural villagers to conduct research and implement interventions that considered, more holistically, the impact of conflict and the resulting trauma on individuals, their families and traditional community support systems. Participants in this study were adult female and male residents (16 years and older) of 10 rural villages; and participants in the parent study funded by NIH/NIMHD, which examined the effectiveness of a Congolese-led livestock microfinance program, Pigs for Peace, on health, economic and community outcomes.

Paper one examined how past exposure to multiple and different conflict-related traumatic events affects current social interaction amongst female participants living in the 10 rural villages. Paper two examined the relationship between exposure to multiple and different conflict-related trauma events, experiences of family rejection, and symptoms consistent with PTSD and depression among female participants in the 10 rural villages. Paper three used qualitative methods to explore current experiences of intimate partner

violence (IPV) victimization and perpetration among a traumatized sample of male and female adults in the parent study. The qualitative interviews further examined social and behavior risk factors; individual and family health, social and economic outcomes; and family and community-based solutions for IPV.

Overall conclusions

Rural households live with on-going economic insecurity, threats of renewed conflict and violence and limited access to or availability of social and health services. In this setting, women reported experience of multiple and different types of conflict-related trauma in the past ten years and limited social interaction with others in their villages. Material deprivation was related to women's report of having fewer visitors in their home. This may indicate that amongst this economically insecure population, family and community members do not visit women who are less able to provide them with economic assistance on visit, such as food and housing. Further, women that experienced conflict-related trauma (e.g. increased number of events, coercion, warlike conditions, bodily trauma, violence to others) but not material deprivation were less likely to visit other family and community members in their home. Women may, (1) undertake protective measures to guard their well being by limiting their social interaction; or (2) perceive or experience stigma in the community associated with trauma exposure and therefore limit their social interaction. Women with symptoms consistent with PTSD were less likely to report social interaction, a finding that is supported with data from other studies [4].

Family rejection of women is a complex but important concept that may cause negative health, economic and social outcomes [2, 5-7]. To date, most research on family rejection in conflict settings has focused on family rejection due to conflict-related sexual violence [2, 6-8]. This study provided evidence for experiences of family rejection related to

exposure to multiple and different types of conflict-related trauma, such as violence to others, coercion, and bodily injury trauma. Almost one out five women (19%, N=354) in this study who experienced at least one conflict-related traumatic event reported rejection by her family after the event. This finding supports descriptions of the impact of conflict-related trauma on family relationships (isolation, loss of family support) by women who have experienced multiple and different types of trauma during conflict [3, 9-11]. Further analysis revealed that sexual assault of a woman witnessed by others in the family and/or community, and/or results in a child and/or involves multiple assaults or gang rape is more likely to be associated with family rejection. Taken together, these findings indicate that traumatic events that occur in public settings and/or are difficult to hide from others because they result in an injury or pregnancy, for example, are more likely to result in family rejection. However, conflict-related trauma experiences that are less visible (e.g., conflict-related sexual violence occurring in the home not in public) or are widespread (e.g., material deprivation) are less likely to result in family rejection. The importance of family rejection, in addition to exposure to conflict-related trauma, on individual health outcomes was revealed in the consistent relationship between experience of family rejection and having symptoms consistent with PTSD and depression.

These findings contribute to a growing body of literature on the importance of family relationships and social interaction, in addition to individual exposure to conflict-related trauma, to individual health in a post-conflict environment [3, 9, 10, 12-14]. The findings show that family rejection and social interaction are important concepts in rural South Kivu Province, enhance the understanding of conflict-related trauma impacts individual outcomes, family relationships and social interaction, demonstrate a relationship

between family rejection and social interaction on mental health outcomes, and show that sexual violence is not the only risk factor for family rejection.

Family relationships in this post-conflict setting were examined more deeply through an in-depth focus on IPV amongst married men and women. This study focused on describing how a non-conflict related traumatic experience, specifically IPV, impacts health, economic and social outcomes. The study provided in-depth information on another aspect of the family-level experience of living in a post-conflict environment. Married male and female participants in the study were interviewed to describe the impact of prolonged conflict and trauma on intimate relationships. Male perpetrators and female survivors of IPV, respectively, discussed the role of IPV in determining individual and family health, economic and social outcomes. Participants described social and behavioral risk factors for IPV including alcohol consumption by the male partner, distrust in the relationship, wife not performing her roles/responsibilities as appropriate according to the husband, the husband's responsibility to discipline poor performance or behavior by his wife and financial stress in the household. Married men and women considered the negative family impact of IPV including inability to prosper and the poor developmental and behavioral outcomes for children in the household when they witness the violence as a serious problem not only in their household but also in the larger community. Fear of stigma and social isolation from family and community members due to IPV was coupled with a desire for family and community-led counseling to respond to IPV. Findings from this study indicate that communities may want and need an individual, family and community focused intervention to address the multiple risks and outcomes associated with IPV. For example, couples counseling and awareness programs on individual responsibility and acceptable conflict resolution strategies coupled with economic interventions may help reduce IPV perpetration.

Recommendations

The findings from this study contribute to a growing body of research on the importance of community and family relationships in the aftermath of conflict, trauma, economic instability and limited health and social service infrastructure. Below, key research and programmatic implications are explained.

1. Understand and address, through integrated interventions, the impact of different types of conflict-related trauma on health and social outcomes

Most research on the health effects of exposure to conflict-related trauma has focused on individual level exposures and outcomes. For example, studies with conflict-affected populations have shown that exposure to multiple conflict-related traumatic events is associated with poor mental health [14-16]. Sexual violence, one type of conflict-related traumatic event, occurs in different conflict settings [17, 18] and can result in poor physical and mental health outcomes [19-21]. Research in conflict-affected areas of eastern DRC has largely focused on the impact of sexual violence on women's health [6, 7, 22]. The prevalence of sexual violence in conflict and its association with poor health outcomes has led to the formation of several important initiatives to prevent and respond to sexual violence in conflict countries.

In eastern DRC and other post-conflict countries, the social consequences of exposure to conflict-related trauma are important but not well understood [23]. This study contributes to evidence for individual-level consequences of conflict-related trauma experiences (e.g., mental health, family rejection). It also contributes to a growing body of evidence on the impact of exposure to multiple and different conflict-related traumas on

family relationships and social interaction, in addition to sexual violence [2, 3, 9, 10, 24]. Conflict-affected individuals, including local leaders and women that have experienced multiple traumas, describe the social and family impact of trauma as important and perhaps worse than health outcomes [2, 9]. The findings from this study illustrate that sexual violence is one risk factor, amongst other conflict-related trauma exposures, for rejection from family. Multiple conflict-related trauma exposures, and not just bodily trauma including sexual violence, were related to limited social interaction. Therefore, interventions that exclusively address the impact of sexual violence on family rejection and social interaction may neglect the needs of other individuals who have experienced conflict-related trauma and are similarly vulnerable to family rejection and the associated poor health outcomes. These findings support the implementation of integrated interventions in a post-conflict setting that targets both survivors of sexual violence and individuals who have experienced multiple or different types of conflict-related trauma. Implementation of integrated interventions would facilitate a more complete understanding of the impact of conflict and life in rural villages post-conflict [9, 23, 25]. Further, implementation of integrated interventions may address community level concerns, as expressed in this setting by local leaders, about the almost exclusive focus of interventions on survivors of sexual violence [2] at the expense of the needs of other rural villagers who have experienced conflict-related trauma and economic instability [26].

2. Describe and address the risk for and outcomes related to multiple types of violent exposures (conflict-related trauma, IPV) in post-conflict settings

Civilian populations living in conflict-affected countries often experience high levels of violence, displacement and human rights violations. In addition to other risk factors for IPV,

recent research on IPV with conflict-affected individuals illustrates increased male and female exposure to conflict-related trauma is associated with elevated IPV [27-32]. This study provides a deeper examination of family relationships, through an in-depth exploration of the risk for and outcomes related to IPV, in a post-conflict setting. Results show that women experience multiple forms of IPV (sexual, physical, psychological). Risk for IPV was associated with social and behavioral factors including gender and cultural norms, male alcohol consumption and financial stress in the household. For example, increased substance use amongst conflict-affected populations is associated with changing social norms and networks, displacement, post-migration stressors and employment restrictions amongst conflict-affected populations [33, 34]. Gender roles and responsibilities may be altered, even long after the end of conflict, in the aftermath of displacement, separation of families or exposure to violence. Women may have increased decision making roles and provide financial support to the family; men may be unable to financially provide for their families [11, 35]. Some of these known risk factors for IPV [36] may be introduced or exacerbated in post-conflict environments.

Participants in this study described IPV as leading to poor health, economic and social outcomes for the survivor, her family and the community. For example, both male perpetrators and female survivors described the impact of witnessing IPV or living in a household with IPV as leading to poor developmental, behavioral and social outcomes for children. In post-conflict settings local populations have described the social isolation, reduced family support and fear of stigma associated with conflict-related trauma as significant and predominant outcomes [9, 11]. This study provides evidence for the ways in which family and social relationships are affected by IPV in a post-conflict environment. Globally, IPV is associated with poor mental, physical and reproductive health outcomes and

economic costs [37-39]. Recent global research in post-conflict settings on the health impact of IPV [40], elevated prevalence of IPV and multiple risk factors for IPV suggests the importance of post-conflict environment IPV to public health interventions and research. These studies provide support for broadening the intervention and research lens from a predominant focus on the health, economic and social impact of conflict-related trauma on rural villagers to also include other types of violent experiences such as IPV. There is a need for research on the mechanisms responsible for relationships between multiple and different types of conflict-related trauma and how the post-conflict environment contributes to social and behavioral risk factors for IPV. Further clarity is required on the individual and family-level health, economic and outcomes of IPV including the impact of IPV on children. Interventions in post-conflict settings that exclusively address conflict-related trauma without consideration to on-going violent experiences in the family may not have the expected affect on health, economic and social outcomes amongst women and their families.

3. Engage local communities in a partnership in intervention and research

In the DRC, interventions and research have predominantly focused on addressing conflict-related sexual violence. Yet, there are data that show that other conflict and non-conflict related health, economic and social problems are important [11, 20, 41] but remain unaddressed [26] likely reducing the effectiveness and sustainability of interventions [42]. This study developed from discussions with community members who expressed frustration at intervention approaches to address post-conflict needs [2] and a review of existing research [3, 5, 8, 9, 11]. Studies in the DRC document widespread poverty, exposure to conflict and non-conflict related trauma, and poor health, economic and social outcomes for most rural villagers [3, 11, 20]. Local community members explained that a focus on sexual

violence alone neglected the widespread effect of trauma and economic instability on rural populations. They described rural villagers as having experienced multiple and different forms of conflict and non-conflict related trauma. Community members described the importance of understanding family relationships and social interaction to better characterize individual experience in a post-conflict environment. The findings from this study on the importance of family relationships and social interaction provide support to valuing local sources of knowledge in the development of research questions and intervention strategies.

There are different models of working with communities to understand, design, develop and manage interventions and research. This study builds off an existing US-Congolese participatory action research model [42]; study findings reveal the success of the partnership. Formative research conducted with rural villagers to understand priorities for future research and local concerns about post-conflict health and social outcomes proved essential to developing both quantitative and qualitative research questions, defining key terms, developing study instruments and contextualizing the interpretation of results.

There is a limited understanding of the dynamics of the post-conflict environment and the ways in which conflict and non-conflict related trauma experiences and economic instability interact to produce individual, family and social outcomes. Through working closely with local communities and organizations, research to describe the post-conflict environment; understand the mechanisms that explain the relationship between conflict and non-conflict trauma experiences and the associated health, economic and social outcomes; and identify and prioritize intervention strategies may be strengthened. Program planners that partner with local communities and organizations to conduct formative research, design interventions, and implement, monitor and evaluate programs may be more culturally appropriate and acceptable.

4. Use of a socio-ecological model to describe the post-conflict environment and identify intervention strategies in the post-conflict setting

To date, a large body of research on health in conflict-affected and post-conflict countries focuses on individual exposure and outcomes. This research has striking findings including the prevalence of sexual violence [20, 43] and elevated symptoms of poor mental health amongst women [14, 44]. In non-Western settings, family and social relationships help define individual identity and well being [9, 45, 46]. There is a growing body of research arguing for a broader examination of challenges in a post-conflict environment including the importance of the social and family environment to health post-violence [2, 8, 47]. The findings from this study show that women experienced multiple and different types of trauma, including sexual violence, and that these experiences were associated with family rejection and social interaction. Qualitative data provided detailed information on the dynamics of family relationships and IPV in a post-conflict, economically unstable, rural setting. Studies with other conflict-affected populations reveal the importance of a stable family unit and access to traditional family and community support structures to well being [9, 48-50].

Bronfenbrenner's socio-ecological framework [51] may provide a foundation for intervention and research that examine the challenges of the post-conflict environment including the social and family environment. The model is based on two central elements: (1) individuals are nested in a multi-level ecological environment and (2) these levels interact to produce outcomes. Use of a socio-ecological model to understand the embedded and interactive relationship between individuals and their environment in a post-conflict setting may facilitate the development of improved interventions and better research. For

interventions, a socio-ecological model can provide insight into how characteristics of the individual, family and social environment leads to different health, economic and social outcomes. For research, a better understanding of the challenges of the post-conflict environment including the family and social environment is needed. Longitudinal data that explore the linkages between individual, family and community risk factors for post-conflict health outcomes is important.

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Appendix I: Qualitative Interview Guides and Debriefing Questions

The following are the English male and female interview guides and debriefing questions for the qualitative research aim three.

Research Aim: To describe, in-depth, IPV perpetration and victimization; individual and family consequences of IPV perpetration and victimization; and identify community-driven solutions to barriers to IPV prevention and response in rural South Kivu province.

Questionnaire for Female Participants

ID: _____

Name of village: _____

Interviewer Name: _____

Date of interview: _____

Time started interview: _____

Time finished interview: _____

Q. Please describe the responsibilities and interactions a woman from this village would have with her husband, children and other members of family?

Probe for

- the responsibilities that she has to her husband, children, other family members
- the opportunities for interaction/communication with husband and others
- the time spent together with husband and others
- the activities that the wife and husband do together

Q. Please describe the responsibilities and interactions a man from this village would have with his wife, his children and other members of his family?

Probe for

- the responsibilities that he has to his wife, his children, other family members
- the opportunities for interaction/communication with wife and others
- the time spent together with wife and others
- the activities that the wife and husband do together

Q. Please describe how a husband and wife in this village discuss problems or issues in their relationship or family.

Probe for:

- What times of days are they together to talk and make decisions?
- What kinds of topics or decisions (children, health, money, problems in the family) do they discuss?

- How are problems typically solved by husbands and wives? For example, does the husband make decisions about problems without his wives input or support?

Q. I have heard that in some families living in villages, a man may use physical violence (e.g., hit, slap, punch, kick, choke) against his wife. Can you tell me more about husbands and physical violence against their wives:

Probe for

- different types of physical violence husband use against his wife
- what are reasons a husband may give for using physical violence against his wife
- where are the places (in home, in the market, outside the home) that a husband may use physical violence against his wife

Q. I have heard that in some families living in villages, men say things to humiliate or control their wives. Can you tell me more about husbands that do this with their wife:

Probe for:

- different types or ways that he may humiliate, insult or control her contact with friends or family
- what are reasons that a husband may give for doing this
- where are the places (in home, in the market, outside the home) that a husband may do this

Q. I have heard that in some families living in villages, a husband may force his wife to have sexual relations or to perform sexual acts even when she does not want to. Can you tell me more about this?

Probe for:

- reasons that he may give for doing this
- ways she can protect herself

Q. For a wife whose husband is violent (e.g. physically, sexually, emotional), please describe the different ways that she can protect herself when he is violent

Probe for

- Things she might do in the house to protect herself
- People who may help her, places she may go or stay to be safe while her husband calms down
- Things she can say to him to make him stop the violence

Q. For a wife whose husband is violent (physical, emotional, sexual), please describe the strategies she uses to increase her and her children's safety in the home and in public?

Probe for:

- Ways she may calm her husband to protect self and children
- Situations she may avoid or respond to differently to protect self and children
- Is there someone she can call for help (like a neighbor)

Q. Please describe the problems a wife might have if her husband is violent to her.

Probe for health of the wife, ability to work, stigma, and relationships in the family or community.

Q. Please describe how violence (physical, emotional, sexual) against a wife might affect the husband and children or other members of the family

Probe for the different ways violence may affect husband and children

Q. Please describe how violence (physical, emotional, sexual) against a wife might affect the community.

Q. For a wife whose husband is violent (physical, emotional, sexual), please describe the ways people in the family or community can help her be safe (e.g. talk to the husband, offer for the wife to stay with a neighbor, refuse to sell him alcohol).

Probe for ways that they help women now and things that they could do that they are not doing

Q. Please tell me about what your village thinks about violence (physical, emotional, sexual) between a husband and wife.

Probe for norms in the community about violence and whether leaders in this community (chief, health care professionals, religious leaders, others) ever talked about violence against women? Please describe to me what they said and how the community reacted.

*****The following questions focus on physical, sexual or emotional violence that the participant has experienced. If she says that she has not experienced any kind of physical, sexual or emotional violence, then skip the remainder of the questionnaire*****

I would like to remind you that the information you share with us is confidential. Your name and your information will not be shared with anyone including your spouse.

Q. Please describe to me the different ways that your husband has been violent (physical, emotional, sexual) with you.

Probe for:

- Different types of violence (physical, emotional, sexual)
- Places that this has occurred
- Whether anyone (family, children, friends, etc) has witnessed it
- Frequency of violence

Q. You mentioned that your husband has been violent (physical, emotional, sexual). Can you please describe to me a situation when he did this and if you were able to protect yourself?

- If she was able to protect herself, what she did to protect herself? Did it change the situation? How?
- If she was not able to protect herself, is there anything that would have been helpful to her in that situation?

Q. Please describe how these different experiences of violence (physical, sexual, and/or emotional) affect you?

Probe for physical, emotional, health effects and how it affects the family

Q. Please tell me all the different situations, which may result in your husband being violent (physical, emotional, and/or sexual)

Probe for situations that may make him upset: money, children, not listening to his decision, work, alcohol, etc.

Q. Please describe to me ways you protect the safety of yourself and your children and other family members before your husband becomes violent (physical, emotional, sexual).

Probe for are there certain topics that she avoids discussing, whether she limits interaction at certain times, whether she has changed her communication, etc.

Q. Please describe to me the things that you do to protect the safety of yourself and your children and other family members at times when your husband is violent (physical, emotional, sexual).

Probe for whether she seeks help from individuals in the household or outside the household, things that she may do in the house to protect herself

Q. Please describe ways that people in this community can help protect a wife from violence (physical, emotional, sexual) by a husband. Probe for whether certain types of services are needed and who can provide them, are there things that can be done with men. For example, education, men's discussion groups, women's discussion groups, health services, changing community perceptions, etc.

Q. Is there anything else you want to share with me about this topic?

Questionnaire for Male Participants

ID: _____

Name of village: _____

Interviewer Name: _____

Date of interview: _____

Time started interview: _____

Time finished interview: _____

Q. Please describe the responsibilities and interactions a man from this village would have with his family, his wife and his children?

Probe for

- the responsibilities that he has to his wife, his children, other family members
- the opportunities for interaction/communication with wife and others
- the time spent together with wife and others
- the activities that the wife and husband do together

Q. Please describe the responsibilities and interactions a woman from this village would have with her husband, her children and other members of her family.

Probe for

- the responsibilities that she has to her husband, her children, other family members
- the opportunities for interaction/communication with husband and others,
- the time spent together with husband and others,
- the activities that the wife and husband do together

Q. Please describe how a wife and husband in this village discuss problems or issues in their relationship or family.

Probe for:

- What times of days are they together to talk and make decisions?
- What kinds of decisions (children, health, money, problems in the family) do they discuss?
- How are problems typically solved by husbands and wives? For example, does the husband make decisions about problems without his wife's input or support?

Q. I have heard that in many families living in this village, a man may use physical violence (e.g., hit, slap, punch, kick, choke) with his wife. Please tell me more about how men may use violence against his wives.

Probe for

- different types of physical violence husband uses against his wife;
- what are reasons a husband may give for using physical violence against his wife;
- where are the places (in home, in the market, outside the home) that a husband may use physical violence against his wife.

Q. I have heard that in some families living in villages, men may say things to humiliate or control their wives. Can you tell me more about how husbands may do this with their wives:

Probe for:

- different types or ways that he may humiliate, insult or control her contact with friends or family
- what are reasons that a husband may give for doing this
- where are the places (in home, in the market, outside the home) that a husband may do this

Q. I have heard that in some families living in villages, a man may force their his wife to have sexual relations or to perform sexual acts even when she does not want to. Can you tell me more about this?

Probe for:

- reasons that he may give for doing this
- ways she can protect herself

Q. Please describe the different reasons or situations that may provoke a man to be violent (physical, emotional, sexual).

Q. For a wife whose husband is violent (e.g. physically, sexually, emotionally), please describe the different ways that she can protect herself when he is violent?

Probe for

- Things she might do in the house to protect herself
- People who may help her, places she may go or stay to be safe while her husband calms down
- Things she can say to him stop the violence

Q. For a husband who uses violence (physical, emotional, sexual), please describe the different things that he might do to limit the frequency of violence, the occurrence of violence, the type of violence, etc.

Q. Please describe the problems a wife might have if her husband is violent.

Probe for health of the wife, ability to work, stigma, and relationships in the family or community.

Q. Please describe how violence against a wife might affect the husband and children or other members of the family

Probe for the different ways violence may affect husband and children

Q. Please describe how violence against a wife might affect the community.

Q. For a wife whose husband is violent, please describe the ways people in the family or community help her be safe (e.g., talk to the husband, offer for the wife to stay with a neighbor, refuse to sell him alcohol)

Probe for ways that they help women now and things that they could do that they are not doing

Q. Please tell me about what your village thinks about violence (physical, emotional, sexual) between a husband and wife.

Probe for norms in the community about violence and whether leaders in this community (chief, health care professionals, religious leaders, others) ever talked about violence against women? Please describe to me what they said and how the community reacted.

*****The following questions focus on violence (physical, emotional, sexual) that the participant has committed. If he says that he has not committed violence (physical, emotional, sexual), then skip the remainder of the questionnaire*****

I would like to remind you that the information you share with us is confidential. Your name and your information will not be shared with anyone including your spouse.

Q. Please describe to me the different ways that you have been violent with your wife.

Probe for:

- Different types of violence
- Places that this has occurred
- Whether anyone (family, children, friends, etc) has witnessed it
- Frequency of violence

Q. You mentioned that you have been violent (physical, emotional, sexual) with your wife. Can you please describe to me a situation when you did this? Can you describe something else that you could have done other than use violence?

Q. Please describe how the violence (physical, emotional, sexual) affects you.

Probe for physical, emotional, health effects and how it affects the family

Q. Please describe how the violence (physical, emotional, sexual) affects your wife.

Q. Please tell me all the different situations, which may result in you being violent (physical, emotional, sexual).

Probe for situations that may make him upset: money, children, not listening to his decision, work, alcohol, etc.

Q. Please describe to me the things that your wife can do to protect the safety of herself and her children before you are upset.

Probe for are there certain topics that she avoids discussing, whether she limits interaction at certain times, whether she has changed her communication, etc.

Q. Please describe to me the things that your wife can do to protect the safety of herself and her children when you are upset.

Probe for are there certain topics that she avoids discussing, whether she limits interaction at certain times, whether she has changed her communication, etc.

Q. Can you tell me about a time that you were upset and were going to use violence (physical, emotional, sexual) but did not? What did you do to change the situation?

Q. Has anyone every tried to talk to you about the times you have used violence (physical, emotional, sexual) against your wife? Please describe to me what they said and your reaction.

Q. Please describe ways that people in your family or this community can help protect women from violence (physical, emotional, sexual). Probe for whether certain types of services are needed and who can provide them, are there things that can be done with men. For example, education, men's discussion groups, women's discussion groups, health services, changing community perceptions, etc.

Q. Is there anything else you want to share with me about this topic?

Debriefing Questions for Interviewers

1. General Impression
2. Place of interview
3. Age of respondent
4. How did you introduce the study?
5. What are the responsibilities of a man and woman in the family?
6. What did she tell you about violence (sexual, emotional or physical) in the community?
7. How does violence affect the woman, her children and her husband?
8. What are the strategies that can be used to improve the security and those of the children in the house and in public?
9. What do you think you did your best to make the respondent feel comfortable and at ease to talk?
10. Did the respondent have any difficulties with questions or certain responses?
11. What difficulties did you face in asking questions, etc during the interview?
12. What was the most interesting or new thing that you learned from the interview?
13. If you could go back and ask another question, what would it be?
14. Any interruptions to the interview?
15. Did you ask any other questions?

Curriculum Vitae

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- 2011 Katie Memorial Foundation Leadership Award
- 2011 Health Systems Program Award for Doctoral Student Research, JHSPH
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- 2010 Global Health Field Research Award, Johns Hopkins Center for Global Health
- 2003 Delta Omega Honorary Society in Public Health

PUBLICATIONS

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