

Predictors of Interpersonal Violence in the Household in Humanitarian Settings: A Systematic Review

Beth L. Rubenstein^{1,2}, Lily Zhi Ning Lu¹, Matthew MacFarlane¹, and Lindsay Stark¹

Abstract

Interpersonal violence against women and children has increasingly been recognized as a public health priority in humanitarian emergencies. However, because the household is generally considered a private sphere, violence between family members remains neglected. A systematic literature review was conducted to identify predictors of household violence in humanitarian emergencies. PubMed, Web of Science, and Scopus were searched from January 1, 1998, to February 16, 2016. A predictor was defined as any individual, household, or community-level exposure that increases or decreases the risk associated with physical, sexual, or emotional interpersonal violence between two or more people living together. All studies reporting on quantitative research were eligible for inclusion. Results were analyzed using qualitative synthesis. Preferred Reporting Items for Systematic Reviews and Meta-Analyses guidelines were followed as applicable. The search strategy resulted in 2,587 original records, of which 33 studies met inclusion criteria. Thirty-two of the 33 studies used a cross-sectional design. This was the first known systematic review of predictors of household violence in humanitarian settings. The household framework drew attention to several factors that are associated with violence against both women and children, including conflict exposure, alcohol and drug use, income/economic status, mental health/coping strategies, and limited social support. There is a need for longitudinal research and experimental designs that can better establish temporality between exposures and household violence outcomes, control for confounding, and inform practice. In the interim, programmers and policy makers should try to leverage the predictors identified by this review for integrated violence prevention and response strategies, with the important caveat that ongoing evaluation of such strategies is needed.

Keywords

domestic violence, children exposed to domestic violence, predicting domestic violence, child abuse, war

In the past decade, women's and children's exposure to interpersonal violence have been increasingly recognized as public health priorities in humanitarian emergencies (Department for International Development [DFID], 2013; Girls Not Brides, 2016; Inter-Agency Standing Committee, 2015; Marsh, Purdin, & Navani, 2006). This focus is underscored by research demonstrating harmful effects of intimate partner violence (IPV) on women's physical and mental health throughout the life course, including injury, sexually transmitted infections, chronic stress, and control over reproductive choices (Campbell, 2002; García-Moreno et al., 2015; Matzopoulos, Bowman, Butchart, & Mercy, 2008). For children, experiencing violence either directly or indirectly (i.e., witnessing violence) impedes proper physical, emotional, and social development (Chai et al., 2016; Felitti et al., 1998; Gilbert et al., 2009; Reza et al., 2009). While the forms and effects of violence differ substantially for boys, girls, men, and women, in the aggregate, violence negatively impacts gender equity and economic growth at a population level (Krug, Mercy, Dahlberg, & Zwi,

2002; Pinheiro, 2006). Several recent reviews documenting the startling prevalence of interpersonal violence in humanitarian settings have bolstered international agencies' commitment to reduce violence and its associated consequences (Stark & Ager, 2011; Stark & Landis, 2016; Vu et al., 2014).

Despite momentum, evidence guiding violence prevention and response interventions in humanitarian emergencies lags behind the call to action. This gap can be attributed to several factors. First, many violence researchers have gravitated to

¹Department of Population and Family Health, Mailman School of Public Health, Columbia University, New York, NY, USA

²Department of Epidemiology, Mailman School of Public Health, Columbia University, New York, NY, USA

Corresponding Author:

Lindsay Stark, Department of Population and Family Health, Mailman School of Public Health, Columbia University, New York, NY 10032, USA.
Email: ls2302@cumc.columbia.edu

certain high-profile forms of violence, such as rape and sexual abuse by armed groups (Amowitz et al., 2002; Baaz & Stern, 2009). While these forms of violence are undoubtedly serious, the most dangerous environment for women and children in humanitarian settings is often within their own households (Catani, 2010; Parcesepe, Stark, Roberts, & Boothby, 2016; Stark, Warner, Lehmann, Boothby, & Ager, 2013). Yet because the household is generally considered a private sphere, violence between family members remains unmeasured and unexplored (Erikson & Rastogi, 2015; García-Moreno et al., 2015; Kohli et al., 2015).

Second, to the extent that household violence in humanitarian emergencies has received attention, efforts have been fragmented across the gender-based violence and child protection sectors. In reality, violence against women and violence against children often coexist within households, suggesting some drivers of violence against women and children may be interrelated (Guedes, Bott, Garcia-Moreno, & Colombini, 2016). For example, children who witness violence in the household are more likely to grow up to be perpetrators of intimate partner violence (IPV) themselves (Catani, 2010; United Nations Children's Fund, 2016). Childhood exposure to IPV against the mother is also associated with females experiencing IPV as an adult (World Health Organization & Pan American Health Organization, 2012). Furthermore, one literature review found significant interconnection between men's abuse of women and physical and sexual abuse of the children in the household, with an overlap between domestic violence and child physical abuse occurring 45–70% of the time (Holt, Buckley, & Whelan, 2008). Still, it is rare for humanitarian interventions to consider violence against women and children in tandem.

Thus, there is a need to synthesize what is known about household violence in humanitarian emergencies across sectors to lay the groundwork for a more holistic approach to violence prevention and response in these settings. Predictors of household violence in other settings have been analyzed extensively and led to widespread recognition of the strength to which certain variables influence violence, including financial stressors, psychopathology, social norms, and prior experiences of abuse (Capaldi, Knoble, Shortt, & Kim, 2012; Ellsberg et al., 2015; Kitzmann, Gaylord, Holt, & Kenny, 2003; Stith, Smith, Penn, Ward, & Tritt, 2004). Yet, to our knowledge, a review of predictors of household violence in humanitarian emergencies has never been conducted. Given the unique circumstances in humanitarian emergencies that likely exacerbate household violence, including displacement, traumatic stress, limited resources, and breakdown of social and community infrastructure, a systematic review of predictors of household violence in emergencies is merited (Catani, 2010; Horn, Puffer, Roesch, & Lehmann, 2014; Kohli et al., 2015). This article attempts to identify and examine the predictors of household violence in humanitarian emergencies that have been evaluated in peer-reviewed scientific literature. An emphasis is placed on modifiable variables which can be directly leveraged through interventions and are associated with both violence against women and violence against children.

Method

Search Protocol and Study Selection

The systematic review was conducted and reported in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines, as applicable. PRISMA was designed to streamline and improve the reporting of systematic reviews and provides a 27-item checklist, as well as more detailed instructions on how to determine eligibility criteria, select studies, and analyze results (Liberati et al., 2009).

Inclusion and exclusion criteria for the review were described in a study protocol that was finalized prior to conducting the search (see Figure 1). To be included, studies had to be original quantitative research, written in English and published in a peer-reviewed journal between January 1, 1998, and February 16, 2016. Studies also had to be conducted in an area affected by a humanitarian emergency or with populations displaced by a humanitarian emergency. Humanitarian emergencies were defined following the Sphere Standards' definition of disaster: "a serious disruption of the functioning of a community or a society involving widespread human, material, economic or environmental losses and impacts that exceeds the ability of the affected community or society to cope using its own resources" (Red Cross & Red Crescent, 2012). Settings that met this definition were cross-checked using annual reports from the United Nations High Commissioner for Refugees, the Office for the Coordination of Humanitarian Affairs, and the United Nations Security Council's Department for Peacekeeping Operations.

Outcomes of interest were physical, sexual, or emotional interpersonal violence between two or more people living in the same home. Violence between intimate partners or nuclear family members was also classified as household violence, even if the subjects' residence was not reported. A predictor was defined as any individual, household, or community-level exposure positively or negatively associated with household violence. Predictors therefore encompassed both "risk" and "protective" factors.

Studies were excluded if they did not have a comparison group or did not report adjusted statistical associations between potential predictors and violence. However, as long as there was a comparison group, studies were not excluded based on design (e.g., cross-sectional studies were eligible if they involved subjects with a range of exposures and violence outcomes).

Based on database recommendations from an information specialist, the final search was conducted in PubMed, Web of Science, and Scopus. The concepts that guided the search included "household or domestic violence," "violence against women," "violence against children," and "humanitarian setting." Search terms were tailored to each database and a comprehensive list of search terms used for each database is available from the corresponding author upon request. The final search was conducted in February 2016.

Systematic Review Protocol

Research question

- What are the risk factors associated with change in interpersonal household violence in humanitarian emergencies (increase or decrease)?

Format

- PRISMA statement for reporting systematic reviews (Liberati et al., 2009).

Eligibility criteria

- Original, peer-reviewed quantitative research;
- Studies published between January 1, 1998, and February 16, 2016;
- Articles in English language.
- Design must include a comparison group (includes cross-sectional studies involving subjects with a range of exposures and violence outcomes);
- Research must be conducted in an area affected by a humanitarian emergency or with populations displaced by a humanitarian emergency;
 - Humanitarian emergency will be defined according to the Sphere Standards' definition of disaster: "a serious disruption of the functioning of a community or a society involving widespread human, material, economic or environmental losses and impacts that exceeds the ability of the affected community or society to cope using its own resources" (Red Cross & Red Crescent, 2012);
 - All settings that are considered humanitarian emergencies will be cross-checked using annual operating reports from the United Nations High Commissioner for Refugees, the Office for the Coordination of Humanitarian Affairs and the United Nations Security Council's Department for Peacekeeping Operations;
- Exposure may include variables at any level (i.e., individual, family, community or structural factors);
- Outcome may include physical, sexual or emotional interpersonal violence between two or more people living in the same home. Outcome may also include violence between intimate partners or nuclear family members, even if the subjects' residence is not reported.
- Definitions and measurement methods for outcome variables must be reported.
- Findings must report adjusted statistical association (or lack thereof) between the risk factor and violence outcome.

Criteria for assessment of quality and risk of bias

A scoring system was developed to evaluate the quality of studies, with the components adapted from a previous systematic review of risk factors for violence (Shamu, Abrahams, Temmerman, Musekiwa, & Zarowsky, 2011).

Quality items
Use of population-based sampling methods
Adequate sample size (N≥500)
Adequate response rate (≥80%)
Use of an established instrument for measuring violence
Clearly stated definitions for risk factors
Study design accounts for temporality between risk factors and violence
Analysis captures different levels of violence severity

Databases

- PubMed
- Web of Science
- Scopus

Reviewers

- Beth Rubenstein
- Lily Lu
- Matthew MacFarlane
- Saeed Rahman

Figure 1. Systematic review protocol.

After duplicates were removed, all citations were evaluated for inclusion according to their title and abstract. Two of the four reviewers independently evaluated each record. Disagreements between reviewers were resolved by the first author. Next, the full text of each remaining article was independently evaluated by two of the four reviewers to determine final eligibility. Disagreements between reviewers at this stage were resolved by consensus. Screening was conducted within Covidence, an online record management system for systematic reviews (Veritas Health Innovation, 2017).

Analysis

All selected studies were categorized according to characteristics such as publication year, geographic region, country, violence outcome, population, and quality score. The number of studies in each category was tabulated.

Due to heterogeneity of the literature, analysis was restricted to qualitative synthesis rather than meta-analysis. For each predictor, interpretation focused on the number and percentage of analyses with significant findings. All predictors reported in the selected studies were tabulated accordingly. In some cases,

several overlapping predictor constructs were grouped together to facilitate the detection of trends (e.g., income and economic status). Exact definitions and thresholds for predictor constructs like poverty and mental health varied across studies and contexts. In addition, all predictors were divided into three categories: modifiable predictors, conflict-related predictors, and cycle of violence predictors. Modifiable predictors were defined as variables that could plausibly be affected by an intervention and were only considered if they were included in at least five analyses across all selected studies.

Outcome measures also varied across studies and contexts. Findings were disaggregated by studies with violence against women outcomes and violence against children outcomes as well as by victimization outcomes and perpetration outcomes. There were not enough studies to facilitate further disaggregation by violence type and severity. Of note, some studies reported multiple analyses (e.g., separate models for different outcomes and/or populations). In these cases, findings from each analysis contributed separately to the calculations.

Predictors that were evaluated in one or more analyses with statistically significant findings for both violence against women outcomes and violence against children outcomes were extracted for discussion, with special attention given to modifiable predictors that met this criterion.

Quality Assessment

Criteria developed to evaluate study quality in another systematic review of violence predictors were adapted and applied to the selected studies (Shamu, Abrahams, Temmerman, Musekiwa, & Zarowsky, 2011). The following criteria were used: (1) use of population-based sampling methods, (2) adequate sample size (≥ 500 participants), (3) adequate response rate (reported and $\geq 80\%$), (4) use of an established instrument for measuring violence, (5) clearly stated definitions for predictors, (6) study design accounts for temporality between predictors and violence, and (7) analysis captures different levels of violence severity (e.g., linear regression, multinomial regression). Each item was scored on a binary scale, with 1 indicating a study met the criteria and 0 otherwise. The total for each study was summed to yield a cumulative quality score ranging from 0 (*no criteria met*) to 7 (*all criteria met*).

Results

Study Selection

The search strategy resulted in 2,587 original records after duplicates were removed. Thirty-three studies met inclusion criteria and were selected for qualitative synthesis (see Figure 2). A common reason for exclusion was that the outcome measured was not household violence. Much of the literature about household violence in humanitarian emergencies characterizes the effects of violence exposure and does not analyze predictors. Many studies also did not specify the relationship between the perpetrator and the victim so it was not possible to disaggregate household violence from other violence types.

Analysis

Table 1 summarizes the studies reviewed. Physical violence was the most common outcome evaluated ($n = 30$ studies), followed by emotional violence ($n = 22$ studies), sexual violence ($n = 21$ studies), witnessing IPV ($n = 5$ studies), and economic violence and neglect ($n = 4$ studies). The study populations were diverse, though adults and victims were much more commonly sampled ($n = 29$ studies each), compared to perpetrators ($n = 10$ studies) and children ($n = 7$ studies). Other groups surveyed include men ($n = 11$ studies), refugees ($n = 7$ studies), internally displaced persons ($n = 5$ studies), combatants ($n = 2$ studies), and pregnant women ($n = 4$ studies).

In terms of geography, the largest number of studies came from sub-Saharan Africa ($n = 13$ studies), the Asia-Pacific region ($n = 9$ studies), and the Middle East ($n = 8$ studies). In addition, several countries served as the setting for more than one study, including the Occupied Palestinian Territories and Uganda ($n = 4$ studies each), Pakistan and Sri Lanka ($n = 3$ studies each), and Colombia, Cote d'Ivoire, Lebanon, and Nigeria ($n = 2$ studies each).

For those predictors that could be modified by a hypothetical intervention, four variables were significant in multiple analyses spanning violence against women and violence against children studies. These variables were: alcohol and drug use, income/economic status, mental health/coping strategies, limited social support (see Table 2). Alcohol and drug use were operationalized to focus on alcohol use exclusively, but in a few contexts, tobacco, khat and/or other drugs were also evaluated. Frequency or abuse was generally assessed based on reports by the users or their spouses, though in some settings where alcohol use was rare due to religious and cultural factors, it was assessed as a binary ever-use measure (Feseha & Gerbaba, 2012). Measures of income and economic status varied substantially across studies. Mental health was defined in potential perpetrators as antisocial personality disorder, PTSD and/or depression and, in children, the construct of "coping strategies" was defined as psychological adjustment, measured by the Strengths and Difficulties Questionnaire (Fulu, Jewkes, Roselli, & Garcia-Moreno, 2013; Saile, Ertl, Neuner, & Catani, 2014; Saile, Neuner, Ertl, & Catani, 2013; Sriskandarajah, Neuner, & Catani, 2015). Social support was defined as self-perceived support from family, friends and significant others and neighborhood help resources, such as the presence of formal and informal social services (Haj-Yahia & Clark, 2013; Kapadia, Saleem, & Karim, 2010; Khamis, 2000).

In addition, exposure to conflict and political violence and exposure to nonconflict-related adverse experiences were associated with violence against women and children in the majority of analyses where these factors were included. Political violence was defined locally and adverse experiences were usually defined according to Adverse Childhood Experience (ACE) scores, which includes events such as physical, sexual, and emotional abuse; substance misuse in the household; and household mental illness (Anda et al., 2006).

Given the focus on predictors of violence victimization in the identified literature, most of the predictor findings relate

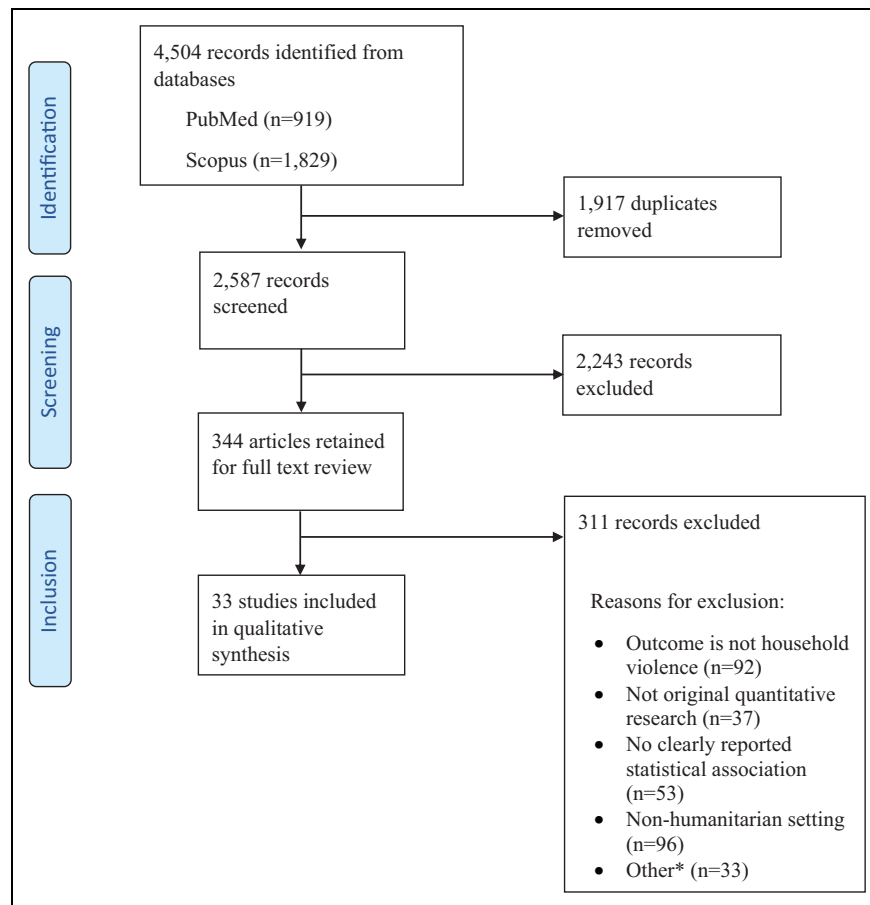


Figure 2. Flow of the study selection process.

*No comparison group; No definitions and methods of measuring violence; Reviews; Full-text unavailable; Duplicate; Not within defined timeframe.

primarily to victimization. Victimization and perpetration studies were not disaggregated in Table 2 due to the small number of studies in each predictor category and thus the difficulty in detecting separate trends for victimization, compared with perpetration. Still, among the variables highlighted here (alcohol and drug use, income/economic status, mental health/coping strategies, limited social support, exposure to conflict, and exposure to adverse events), some associations were detected with both victimization and perpetration for all variables except social support. The association between social support and violence perpetration was not evaluated in any identified studies. Similarly, because most selected studies focused on violence against women and did not measure violence against children, disaggregated data on predictors of violence against children were sparse.

Quality Assessment

Among the selected studies, the mean quality score was 3.73 of the 7. The highest score was 6 and it went to two studies based on the same data set from the Occupied Palestinian Territories and authored by the same people (Clark et al., 2010; Haj-Yahia & Clark, 2013). Seven studies scored 5 (21%), eight studies scored 4 (24%), and 14 studies scored

3 (42%). Of the remaining two studies, one study scored 2 and one study scored 0 (see Table 1).

While the majority of studies (88%) met the quality criterion “providing definitions for predictors,” only three studies (9%) met the criterion demonstrating “temporality between predictors and violence.” The low number of analyses meeting the temporality criterion was driven by the fact that 32 of 33 studies used a cross-sectional design. Two cross-sectional studies did manage to address temporality by asking respondents about two different recall periods, one period for the exposure and a subsequent period for the outcome (Falb, Annan, et al., 2013; Falb, McCormick, Hemenway, Anfinson, & Silverman, 2013). The final study which scored a point for temporality was a randomized controlled trial (Hossain et al., 2014). The remaining quality criteria were fulfilled by 39–67% of studies (see Table 3).

Discussion

This systematic review of household violence in humanitarian settings highlighted several predictors common to both violence against women (VAW) and violence against children (VAC): conflict exposure, alcohol and drug use, income and economic status, mental health/coping strategies, and limited

Table 1. Selected Studies.

Study	Setting	Sample	Analysis	Output	Outcome(s)					Quality Criteria					Quality Score		
					Physical Violence	Sexual Violence	Emotional Violence	Economic Violence/Neglect	Witnessing IPV	Population-Based Sampling	Sample Size ≥500	Response Rate ≥80%	Established Violence Instrument	Definitions for risk factors		Temporality	Levels of Violence Severity
Assaf and Chaban (2013)	Palestine	n = 814 single, never-married women ages 18–45 years	Multivariate logistic regression	Adjusted odds ratios	X		X				X	X	X	X			5
Bhatta (2014)	Nepal (Kathmandu district)	n = 2,466 male heads of household	Multivariate logistic regression	Adjusted odds ratios	X	X	X				X	X		X			4
Catani et al. (2008)	Sri Lanka	n = 296 children ages 9–15 years	Multivariate linear regression	Standardized β coefficients	X	X	X		X				X	X		X	3
Catani et al. (2009)	Afghanistan (Kabul)	n = 287 children ages 7–15 years	Multivariate linear regression	Standardized β coefficients	X		X		X				X	X		X	3
Clark et al. (2010)	Palestine	n = 3,510 presently married women, aged 15–64	Multinomial regression	Adjusted odds ratios	X	X	X		X		X	X	X	X		X	6
Ezeanochie, Olagbui, Ade, Kubejinje, and Okonofua (2011)	Nigeria (Niger Delta region)	n = 305 HIV-positive women receiving antenatal care	Multivariate logistic regression	Adjusted odds ratios	X	X	X					X	X	X			3
Falb, Annan et al. (2013)	Côte d'Ivoire	n = 966 partnered women	Generalized estimating equations	Adjusted odds ratios	X		X	X			X	X		X	X		4
Falb, McCormick, et al. (2013)	Myanmar (Karen refugees)	n = 861 partnered women	Generalized estimating equations	Adjusted odds ratios	X	X	X				X	X		X	X		5
Feseha and Gerbaba (2012)	Ethiopia (Eritrean refugees)	n = 422 partnered women	Multivariate logistic regression	Adjusted odds ratios	X						X	X	X				3
Fleming et al. (2015)	Democratic Republic of the Congo (DRC) (eastern region)	n = 539 ever-partnered men, ages 18–59 years	Multivariate logistic regression	Adjusted odds ratios	X						X	X	X	X			4
Fonseka, Minnis, Gomez, and Dalal (2015)	Sri Lanka	n = 1,252 ever-partnered men, ages 18–49 years	Multivariate logistic regression	Adjusted odds ratios	X	X	X		X		X	X		X			3
Greta Friedemann-Sánchez and Lovatón (2012)	Colombia	n = 24,930 ever-partnered women	Bivariate probit logistic regression	Probability based on the probit link	X		X				X	X		X		X	4
Fulu, Jewkes, Roselli, and Garcia-Moreno (2013)	Papua New Guinea (Bougainville)	n = 864 men, ages 18–49	Multinomial logistic regression models	Adjusted relative risk ratios	X	X	X		X		X	X		X		X	5

(continued)

Table 1. (continued)

Study	Setting	Sample	Analysis	Output	Outcome(s)					Quality Criteria					Quality Score			
					Physical Violence	Sexual Violence	Emotional Violence	Economic		Witnessing IPV	Population-Based Sampling	Sample Size ≥ 500	Response Rate $\geq 80\%$	Established Violence Instrument		Definitions for risk factors	Temporality	Levels of Violence Severity
								Violence/ Neglect										
Haj-Yahia and Clark (2013)	Palestine	$n = 3,500$ ever-married women	Multivariate multinomial logistic regression	Adjusted odds ratios	X	X	X				X	X	X	X	X	6		
Hammoury, Khawaja, Mahfoud, Afifi, and Madi (2009)	Lebanon (Palestinian refugees)	$n = 349$ pregnant women	Multivariate logistic regression	Adjusted odds ratios	X	X	X					X	X			3		
Hossain et al. (2014)	Cote d'Ivoire	$n = 300$ men and their female partners	Individual-level binary logistic regression + ratio of expected means	Adjusted risk ratios	X	X						X		X	X	3		
Ilyasu, Abubakar, Babashani, and Galadanci (2011)	Nigeria (northern region)	$n = 289$ HIV-positive women	Multivariate logistic regression	Adjusted odds ratios	X	X	X					X	X			3		
Kapadia, Saleem, and Karim (2010)	Pakistan	$n = 500$ married women, ages 18–49 years	Multivariate logistic regression	Adjusted odds ratios		X							X	X		3		
Karmaliani et al. (2008)	Pakistan	$n = 1,324$ pregnant women	Ordered logistic regression model	Adjusted odds ratios	X	X	X					X	X	X	X	5		
Khamis (2000)	Palestine	$n = 1,000$ children, aged 12–16	Hierarchical multiple regression	Standardized β coefficients			X					X	X	X	X	5		
Khawaja and Hammoury (2008)	Lebanon (Palestinian refugees)	$n = 349$ pregnant women	Multivariate logistic regression	Adjusted odds ratios		X						X	X	X		3		
Kidman, Palermo and Bertrand (2015)	DRC	$n = 2,855$ ever-married women	Multivariate logistic regression	Adjusted odds ratios	X	X					X	X	X	X		5		
Kinyanda et al. (2016)	Uganda (eastern region)	$n = 1,110$ ever-partnered men and women	Multivariate logistic regression	Adjusted odds ratios	X	X	X					X	X	X		4		
Piedad Urdinola and Ospino (2015)	Colombia	$n = 12,113$ –14,105, depending on the analysis	Two-stage instrumental variable logistic regression	Probability based on the logit link	X										X	3		
Saile, Neuner, Ertl, and Catani (2013)	Uganda	$n = 235$ guardian couples	Multiple linear regression	Standardized β coefficients	X	X	X			X		X	X	X	X	4		
Saile, Ertl, Neuner, and Catani (2014)	Uganda	$n = 283$ children, 365 female guardians, and 301 male guardians	Multiple linear regression	Standardized β coefficients	X	X	X					X	X	X	X	4		
Sesar, Živić-Becirević, and Sesar (2008)	Bosnia and Herzegovina	$n = 458$ third grade (level) high school students	Multivariate hierarchical regression	R and R^2	X	X	X	X				X	X	X	X	3		

(continued)

Table 1. (continued)

Study	Setting	Sample	Analysis	Output	Outcome(s)					Quality Criteria					Levels of Violence Severity	Quality Score
					Physical Violence	Sexual Violence	Emotional Violence	Economic Violence/Neglect	Witnessing IPV	Population-Based Sampling	Sample Size ≥ 500	Response Rate $\geq 80\%$	Established Violence Instrument	Definitions for risk factors		
Srisandarajah, Neuner, and Catani (2015)	Sri Lanka	$n = 359$ children, 108 mother-child dyads, 80 father-child dyads, and 69 mother-father-child triads	Multivariate linear regression	Standardized β coefficients and Spearman's ρ	X	X	X			X			X		X	3
Sultan Ali, Nawaz Ali, Khan Khuwaja, and Nanji (2014)	Pakistan	$n = 379$ mothers of 6- to 12-year-old children	Multivariate logistic regression	Adjusted odds ratios	X											0
Tappis, Biermann, Glass, Tileva, and Doocy (2012)	Syria (Iraqi refugees)	$n = 486$ married women of reproductive age	Multivariate logistic regression	Adjusted odds ratios	X		X				X		X			2
Tumwesigye, Kyomuhendo, Greenfield, and Wanyenze (2012)	Uganda	$n = 1,743$ partnered women aged 15-49	Multivariate logistic regression	Adjusted odds ratios	X						X	X	X	X		5
Vinck and Pham (2013)	Liberia	$n = 4,289$ ever-partnered men and women	Stepwise multivariate logistic regression	Adjusted odds ratios	X						X	X	X	X		4
Wako et al. (2015)	Rwanda (Congolese refugees)	$n = 110$ ever-partnered Congolese women, 15-49 years of age	Multivariate logistic regression	Adjusted odds ratios	X	X					X		X	X		3

Note. $n = 33$ studies.

Table 2. Number and Percentage of Analyses by Key Predictors.

Predictor	All Studies (<i>n</i> = 33 Studies)			VAW Studies (<i>n</i> = 26 Studies)			VAC Studies (<i>n</i> = 7 Studies)		
	Number of Studies	Number of Analyses	% Statistically Significant Analyses (<i>p</i> < .05)	Number of Studies	Number of Analyses	% Statistically Significant Analyses (<i>p</i> < .05)	Number of Studies	Number of Analyses	% Statistically Significant Analyses (<i>p</i> < .05)
Modifiable predictors^a									
Alcohol and drugs	8	23	57	5	16	44	3	7	86
Decision-making power	7	19	68	7	19	68	0	—	—
Desired pregnancy/age at first childbirth	5	5	80	5	5	80	0	—	—
Education	21	41	34	19	39	36	2	2	0
Employment	7	16	25	7	16	25	0	—	—
Income/economic status	14	33	42	10	23	52	4	10	20
Number of children/household size	12	21	43	10	19	47	2	2	0
Mental health/coping strategies	4	23	26	2	14	29	2	9	22
Social norms around violence	3	8	63	3	8	63	0	—	—
Limited social support	3	8	38	2	7	29	1	1	100
Conflict-related predictors									
Combatant status	1	4	50	1	4	50	0	—	—
Conflict/political violence	13	45	53	9	33	58	4	12	42
Migration (any reason)	1	2	100	1	2	100	0	—	—
Refugee status/camp	3	6	17	2	5	0	1	1	100
Cycle of violence predictors									
ACE score, stressful life events	5	20	85	3	13	100	2	7	57
Participation in violence outside the home	2	5	40	2	5	40	0	—	—
Previous IPV or childhood exposure	9	27	52	5	18	44	4	9	67

Note. ACE = adverse childhood experience; IPV = intimate partner violence; VAW = violence against women; VAC = violence against children.

^aEvaluated in at least five analyses across all studies.

social support. This finding confirmed the intersection of predictors across VAW and VAC and the potential for integrated interventions. The number of studies that met inclusion criteria was higher than expected and indicates growing recognition of household violence, especially in recent years when the majority of studies were published. Learning from this review can be applied to improve violence prevention and response programming and offer recommendations for further research.

The four modifiable predictors which the literature suggests are significantly associated with both women's and children's household violence outcomes have all been documented as predictors of violence outside the humanitarian sphere (Capaldi et al., 2012; Herrenkohl, Sousa, Tajima, Herrenkohl, &

Moylan, 2008; Stith et al., 2004). The fact that these variables were significant across multiple humanitarian settings emphasizes that some predictors of household violence transcend borders, although the prevalence, distribution, and operationalization of each predictor remains population-specific.

These population-specific differences may partially explain some of the non-significant findings for the same predictors in different settings. For example, among refugees with limited income-generating opportunities, income/economic status might contribute to a higher proportion of violence cases than in a setting where refugees are able to work and/or receive financial assistance. Also, the threshold for what constitutes low income is contextually dependent. By a similar token,

Table 3. Percentage of Studies Meeting Each Quality Assessment Criteria.

Criteria	% of Studies
Use of population-based sampling methods	52
Sample size ≥ 500	55
Response rate reported and $\geq 80\%$	67
Established instrument for measuring violence	64
Definitions for predictors provided	88
Temporality between predictors and violence	9
Analysis captures different levels of violence severity	39

Note. $n = 33$ studies.

coping strategies that mitigate violence in one setting may be different from coping strategies that mitigate violence somewhere else. The findings from this review therefore draw attention to certain predictor categories but do not dictate how these categories should be prioritized or parameterized. Such decisions should happen locally and involve input from community members, practitioners, policy makers, and researchers. Women's voices should be foregrounded.

In addition, the modifiable predictors that this review did not highlight as significantly associated with VAW and VAC in humanitarian emergencies have been associated with VAW and VAC in at least some nonemergency settings. These include decision-making power, desired pregnancy/age at first childbirth, education, employment, number of children/household size, and social norms. Often, the evidence from these other settings is not restricted to cross-sectional studies (Capaldi et al., 2012; Herrenkohl et al., 2008; Stith et al., 2009, 2004). Although it is possible that the humanitarian context serves to interrupt key elements of causal mechanisms which exist in more stable environments, more plausible explanations for the null findings include the small number of studies on violence against children and weaknesses in study design and analysis. For example, for 4 of the 10 modifiable predictors reported in Table 2, all relevant studies focused exclusively on violence against women.

Finally, regarding non-modifiable predictors, the findings reiterated household violence as situated within a wider cycle of violence and trauma. Given the ubiquity of these adversities, household violence prevention and response should be a routine element of humanitarian programming. The specific non-modifiable predictors identified as significant in this review (exposure to conflict and political violence and exposure to nonconflict-related adverse experiences) suggest that programmers should consider measuring these variables and targeting programs accordingly. The relationship between household violence and exposure to conflict and political violence also supports the hypothesis that conflict causes an increase in the prevalence of household violence, though longitudinal data that track household violence starting from before the outbreak of conflict are needed to confirm this theory. Of note, although the impact of exposure to natural disaster on household violence was only evaluated in one selected study (the remaining studies were conducted in conflict-affected settings), given the stress

associated with natural disasters, it is probable that household violence is also exacerbated following natural disasters (Catani, Jacob, Schauer, Kohila, & Neuner, 2008).

The literature reviewed is limited by several methodological features. First, nearly all studies used a cross-sectional design, meaning the relationship between a predictor and household violence may be clouded by reverse causation. For example, in a cross-sectional study, it is not possible to determine whether household violence causes a decrease in decision-making power or whether low decision-making power causes household violence. Although this problem is partially ameliorated by the technique used by Falb, Annan, et al. (2013) and Falb, McCormick, Hemenway, Anfinson, and Silverman (2013) which asked respondents to report exposures that predated the outcome, such an approach is subject to recall bias. Cross-sectional designs are also vulnerable to residual confounding, even after adjustment. The quantity and quality of confounders adjusted for varied widely across studies, meaning the risk of residual confounding also varied widely across studies.

Second, most studies dichotomized the outcome of violence. Factors which drive more frequent and severe forms of violence may not have been captured by dichotomous outcome analyses. Third, the literature was characterized by heterogeneity in definitions of violence and predictors, as well as heterogeneity in the variables included in the statistical models. This heterogeneity reflects a lack of common definitions, approaches, and understanding of household violence in humanitarian contexts. For example, some studies grouped physical, sexual, and emotional violence together, while other studies analyzed them separately. Some studies evaluated predictors for victimization; other studies evaluated predictors for perpetration. The relationship between the perpetrator and the "victim" was often unspecified. Comparisons across studies therefore may reflect differences in methods, rather than true differences across populations.

The review itself also had limitations. The literature reviewed does not use standardized methods or measures, and therefore categorization of predictors and outcomes was reductionist. For this reason, many researchers caution against synthesis of such a heterogeneous group of studies (Higgins & Green, 2008). In addition, by focusing on statistical significance to interpret predictors, findings are an artefact of sample size. Statistical significance also fails to capture other relevant measures of association, including effect magnitude and directionality. Some studies also contributed a disproportionate number of analyses and therefore contributed disproportionately to the summary of significance. Furthermore, although the quality criteria were adapted from another review, the tools for assessing quality in cross-sectional studies are undeveloped compared to similar tools for randomized controlled trials (Shamu et al., 2011). As a result, there is no consensus on what elements should contribute to quality assessment. Finally, the search did not capture gray literature or publications in languages other than English and therefore likely missed some relevant studies.

By synthesizing what is and is not known about predictors of household violence in humanitarian settings, directions for

future research can be distilled. Most prominently, this review revealed a need for longitudinal research and experimental designs that can better establish temporality between predictors and household violence outcomes, control for confounding and inform practice, compared to the existing cross-sectional evidence base. In addition, longitudinal research could distinguish between general predictors and mediators on the pathway to household violence. Mental health, for instance, may be better characterized as a mediator of the relationship between conflict exposure and household violence. Analysis of the modifiers of the relationship between predictors and household violence is also needed, including community-level factors such as natural disasters versus conflict settings and camps versus non-camps and individual factors such as age and gender.

Furthermore, common themes across the literature on violence against women and violence against children suggest that interventions targeted at women may have spillover effects on children and vice versa, but more work is needed to establish a theory of change that encompasses both outcomes. This will require more research on predictors of violence against children in humanitarian settings, an area which is lacking compared to the research on predictors of violence against women in humanitarian settings. Research focused on households where violence against women and violence against children co-occur is also needed.

More immediately, findings can begin to be incorporated into program design and evaluation. Some violence interventions in humanitarian settings do already address a few of the predictors associated with VAW and VAC in this review. For example, a recent landscaping review of strategies to prevent household violence in humanitarian settings highlighted several programs that have successfully leveraged economic strengthening mechanisms (e.g., cash transfers) to reduce violence exposure (Asghar, Rubenstein, & Stark, 2017; Hidrobo, Peterman, & Heise, 2016; Ismayilova & Sanson, 2016). The landscaping review also highlighted several programs that have reduced violence by cultivating social support networks for adolescent girls (among other program elements) (Erulkar & Tamrat, 2014; Sarnquist et al., 2014; Sinclair et al., 2013). Programs that address alcohol and drug use or mental health/coping strategies as a form of primary prevention of household violence in humanitarian settings were not identified, nor were violence prevention or response programs in which exposure to conflict or nonconflict-related violence were used for targeting purposes. These areas are ripe for programmatic experimentation.

Conclusions

This was the first known systematic review of predictors of household violence in humanitarian settings. The household violence framework drew attention to several predictors that are common to violence against both women and children, including conflict exposure. At the same time, the review also made clear how much learning on this topic remains. The humanitarian community must act now to invest in research that will guide efforts to interrupt the cycle of violence across

the life course. In the interim, the predictors identified in this review can inform prevention and response efforts.

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Authors' Note

B.R. and L.S. conceived and designed the study and study protocol; B.R. and L.L. developed the search strategy; L.L. ran the search; B.R., L.L., and M.M. screened the articles; B.R. wrote the manuscript; L.L., M.M., and L.S. contributed important revisions to the manuscript; L.S. served as principal investigator of the study. All authors approved the final submitted version of the manuscript.

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References

- Amowitz, L. L., Reis, C., Lyons, K. H., Vann, B., Mansaray, B., Akinsulure-Smith, A. M., ... Iacopino, V. (2002). Prevalence of war-related sexual violence and other human rights abuses among internally displaced persons in Sierra Leone. *Journal of the American Medical Association*, 287, 513–521.
- Anda, R. F., Felitti, V. J., Bremner, J. D., Walker, J. D., Whitfield, C., Perry, B. D., ... Giles, W. H. (2006). The enduring effects of abuse and related adverse experiences in childhood. *European Archives of Psychiatry and Clinical Neuroscience*, 256, 174–186.
- Asghar, K., Rubenstein, B., & Stark, L. (2017). *Preventing household violence: Promising strategies for humanitarian settings*. New York City, NY: Care and Protection of Children (CPC) Learning Network. Retrieved from <http://www.cpcnetwork.org/wp-content/uploads/2017/02/Landscaping-review-Final-Jan-2017.pdf>
- Assaf, S., & Chaban, S. (2013). Domestic violence against single, never-married women in the Occupied Palestinian Territory. *Violence Against Women*, 19, 422–441.
- Baaz, M. E., & Stern, M. (2009). Why do soldiers rape? *Masculinity, violence, and sexuality in the armed forces in the Congo (DRC)*. *International Studies Quarterly*, 53, 495–518.
- Bhatta, D. N. (2014). Shadow of domestic violence and extramarital sex cohesive with spousal communication among males in Nepal. *Reproductive Health*, 11. doi:10.1186/1742-4755-11-44
- Campbell, J. C. (2002). Health consequences of intimate partner violence. *The Lancet*, 359, 1331–1336.
- Capaldi, D. M., Knoble, N. B., Shortt, J. W., & Kim, H. K. (2012). A systematic review of risk factors for intimate partner violence. *Partner Abuse*, 3, 231–280.
- Catani, C. (2010). War at home—A review of the relationship between war trauma and family violence. *Verhaltenstherapie*, 20, 19–27.

- Catani, C., Jacob, N., Schauer, E., Kohila, M., & Neuner, F. (2008). Family violence, war, and natural disasters: A study of the effect of extreme stress on children's mental health in Sri Lanka. *BMC Psychiatry*, 8, 33.
- Catani, C., Schauer, E., Elbert, T., Missmahl, I., Bette, J. P., & Neuner, F. (2009). War trauma, child labor, and family violence: Life adversities and PTSD in a sample of school children in Kabul. *Journal of Traumatic Stress*, 22, 163–171.
- Chai, J., Fink, G., Kaaya, S., Danaei, G., Fawzi, W., Ezzati, M., . . . Fawzi, M. C. S. (2016). Association between intimate partner violence and poor child growth: Results from 42 demographic and health surveys. *Bull World Health Organ*, 94, 331–339.
- Clark, C. J., Everson-Rose, S. A., Suglia, S. F., Btoush, R., Alonso, A., & Haj-Yahia, M. M. (2010). Association between exposure to political violence and intimate-partner violence in the occupied Palestinian territory: A cross-sectional study. *The Lancet*, 375, 310–316.
- Department for International Development. (2013). Briefing paper: Violence against women and girls in humanitarian emergencies. Retrieved from https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/271932/VAWG-humanitarian-emergencies.pdf
- Ellsberg, M., Arango, D. J., Morton, M., Gennari, F., Kiplesund, S., Contreras, M., & Watts, C. (2015). Prevention of violence against women and girls: What does the evidence say? *The Lancet*, 385, 1555–1566.
- Erikson, A., & Rastogi, S. (2015). IRC practice brief—Private violence, public concern—Intimate partner violence in humanitarian settings. Retrieved from <https://www.rescue.org/sites/default/files/document/564/ircvpfinalen.pdf>
- Erulkar, A., & Tamrat, T. (2014). Evaluation of a reproductive health program to support married adolescent girls in rural Ethiopia. *African Journal of Reproductive Health*, 18, 68–76.
- Ezeanochie, M. C., Olagbuji, B. N., Ande, A. B., Kubeyinje, W. E., & Okonofua, F. E. (2011). Prevalence and correlates of intimate partner violence against HIV-seropositive pregnant women in a Nigerian population. *Acta Obstetrica et Gynecologica Scandinavica*, 90, 535–539.
- Falb, K. L., Annan, J., Hossain, M., Topolska, M., Kpebo, D., & Gupta, J. (2013). Recent abuse from in-laws and associations with adverse experiences during the crisis among rural Ivorian women: Extended families as part of the ecological model. *Global Public Health*, 8, 831–844.
- Falb, K. L., McCormick, M. C., Hemenway, D., Anfinson, K., & Silverman, J. G. (2013). Violence against refugee women along the Thai–Burma border. *International Journal of Gynecology & Obstetrics*, 120, 279–283.
- Felitti, V. J., Anda, R. F., Nordenberg, D., Williamson, D. F., Spitz, A. M., Edwards, V., . . . Marks, J. S. (1998). Relationship of childhood abuse and household dysfunction to many of the leading causes of death in adults: The Adverse Childhood Experiences (ACE) Study. *American Journal of Preventive Medicine*, 14, 245–258.
- Fleming, P. J., McCleary-Sills, J., Morton, M., Levto, R., Heilman, B., & Barker, G. (2015). Risk factors for men's lifetime perpetration of physical violence against intimate partners: Results from the international men and gender equality survey (IMAGES) in eight countries. *PLoS One*, 10, e0118639.
- Feseha, G., & Gerbaba, M. (2012). Intimate partner physical violence among women in Shimelba refugee camp, northern Ethiopia. *BMC Public Health*, 12, 1.
- Fonseka, R. W., Minnis, A. M., & Gomez, A. M. (2015). Impact of adverse childhood experiences on intimate partner violence perpetration among Sri Lankan men. *PLoS One*, 10, e0136321.
- Fulu, E., Jewkes, R., Roselli, T., & Garcia-Moreno, C. (2013). Prevalence of and factors associated with male perpetration of intimate partner violence: Findings from the UN Multi-country Cross-sectional Study on Men and Violence in Asia and the Pacific. *The Lancet Global Health*, 1, e187–e207.
- García-Moreno, C., Zimmerman, C., Morris-Gehring, A., Heise, L., Amin, A., Abrahams, N., . . . Watts, C. (2015). Addressing violence against women: A call to action. *The Lancet*, 385, 1685–1695.
- Gilbert, R., Widom, C. S., Browne, K., Fergusson, D., Webb, E., & Janson, S. (2009). Burden and consequences of child maltreatment in high-income countries. *The Lancet*, 373, 68–81.
- Girls Not Brides. (2016). Brief 5—Taking action to address child marriage: Conflict and humanitarian crisis. Retrieved from <http://www.girlsnotbrides.org/wp-content/uploads/2016/03/5-Addressing-child-marriage-Crisis-and-Humanitarian-Conflict.pdf>
- Greta Friedemann-Sánchez, G., & Lovatón, R. (2012). Intimate partner violence in Colombia: Who is at risk? *Social Forces*, 91, 663–688.
- Guedes, A., Bott, S., Garcia-Moreno, C., & Colombini, M. (2016). Bridging the gaps: A global review of intersections of violence against women and violence against children. *Global Health Action*, 9. doi:10.3402/gha.v9.31516
- Haj-Yahia, M. M., & Clark, C. J. (2013). Intimate partner violence in the occupied Palestinian territory: Prevalence and risk factors. *Journal of Family Violence*, 28, 797–809.
- Hammoury, N., Khawaja, M., Mahfoud, Z., Afifi, R. A., & Madi, H. (2009). Domestic violence against women during pregnancy: the case of Palestinian refugees attending an antenatal clinic in Lebanon. *Journal of Women's Health*, 18, 337–345.
- Herrenkohl, T. I., Sousa, C., Tajima, E. A., Herrenkohl, R. C., & Moylan, C. A. (2008). Intersection of child abuse and children's exposure to domestic violence. *Trauma, Violence, & Abuse*, 9, 84–99.
- Hidrobo, M., Peterman, A., & Heise, L. (2016). The effect of cash, vouchers, and food transfers on intimate partner violence: Evidence from a randomized experiment in Northern Ecuador. *American Economic Journal: Applied Economics*, 8, 284–303.
- Higgins, J. P., & Green, S. (2008). *Cochrane handbook for systematic reviews of interventions (Vol. 5)*. West Sussex, England: Wiley Online Library.
- Holt, S., Buckley, H., & Whelan, S. (2008). The impact of exposure to domestic violence on children and young people: A review of the literature. *Child Abuse Neglect*, 32, 797–810. doi:10.1016/j.chiabu.2008.02.004
- Horn, R., Puffer, E. S., Roesch, E., & Lehmann, H. (2014). Women's perceptions of effects of war on intimate partner violence and

- gender roles in two post-conflict West African Countries: Consequences and unexpected opportunities. *Conflict and Health*, 8, 1.
- Hossain, M., Zimmerman, C., Kiss, L., Abramsky, T., Kone, D., Bakayoko-Topolska, M., . . . Watts, C. (2014). Working with men to prevent intimate partner violence in a conflict-affected setting: A pilot cluster randomized controlled trial in rural Côte d'Ivoire. *BMC Public Health*, 14, 1.
- Iliyasu, Z., Abubakar, I. S., Babashani, M., & Galadanci, H. S. (2011). Domestic violence among women living with HIV/AIDS in Kano, Northern Nigeria. *African Journal of Reproductive Health*, 15, 41–49.
- Inter-Agency Standing Committee. (2015). Guidelines for integrating gender-based violence interventions in humanitarian action: Reducing risk, promoting resilience and aiding recovery. Retrieved from http://gbvguidelines.org/wp-content/uploads/2015/09/2015-IASC-Gender-based-Violence-Guidelines_lo-res.pdf
- Ismayilova, L., & Sanson, J. (2016). *Testing an integrated intervention to promote child protection and wellbeing among ultra-poor families in Burkina Faso*. Paper presented at the CPC Learning Network Biennial Meeting, New York.
- Kapadia, M. Z., Saleem, S., & Karim, M. S. (2010). The hidden figure: Sexual intimate partner violence among Pakistani women. *The European Journal of Public Health*, 20, 164–168.
- Karmaliani, R., Irfan, F., Bann, C. M., McClure, E. M., Moss, N., Pasha, O., & Goldenberg, R. L. (2008). Domestic violence prior to and during pregnancy among Pakistani women. *Acta Obstetrica et Gynecologica Scandinavica*, 87, 1194–1201.
- Khamis, V. (2000). Child psychological maltreatment in Palestinian families. *Child Abuse & Neglect*, 24, 1047–1059.
- Khawaja, M., & Hammoury, N. (2008). Coerced sexual intercourse within marriage: A clinic-based study of pregnant Palestinian refugees in Lebanon. *Journal of Midwifery & Women's Health*, 53, 150–154.
- Kidman, R., Palermo, T., & Bertrand, J. (2015). Intimate partner violence, modern contraceptive use and conflict in the Democratic Republic of the Congo. *Social Science & Medicine*, 133, 2–10. doi:10.1016/j.socscimed.2015.03.034
- Kitzmann, K. M., Gaylord, N. K., Holt, A. R., & Kenny, E. D. (2003). Child witnesses to domestic violence: A meta-analytic review. *Journal of Consulting and Clinical Psychology*, 71, 339.
- Kinyanda, E., Weiss, H. A., Mungherera, M., Onyango-Mangen, P., Ngabirano, E., & Kajungu, R. . . . Patel, V. (2016). Intimate partner violence as seen in post-conflict eastern Uganda: Prevalence, risk factors and mental health consequences. *BMC International Health and Human Rights*, 16. doi:10.1186/s12914-016-0079-x
- Kohli, A., Perrin, N., Mpanano, R. M., Banywesize, L., Mirindi, A. B., Banywesize, J. H., . . . Glass, N. (2015). Family and community driven response to intimate partner violence in post-conflict settings. *Social Science & Medicine*, 146, 276–284.
- Krug, E. G., Mercy, J. A., Dahlberg, L. L., & Zwi, A. B. (2002). The world report on violence and health. *The Lancet*, 360, 1083–1088.
- Liberati, A., Altman, D. G., Tetzlaff, J., Mulrow, C., Gotzsche, P. C., Ioannidis, J. P., . . . Moher, D. (2009). The PRISMA statement for reporting systematic reviews and meta-analyses of studies that evaluate healthcare interventions: Explanation and elaboration. *British Medical Journal*, 339, b2700. doi:10.1136/bmj.b2700
- Marsh, M., Purdin, S., & Navani, S. (2006). Addressing sexual violence in humanitarian emergencies. *Global Public Health*, 1, 133–146.
- Matzopoulos, R., Bowman, B., Butchart, A., & Mercy, J. A. (2008). The impact of violence on health in low-to middle-income countries. *International Journal of Injury Control and Safety Promotion*, 15, 177–187.
- Parcesepe, A., Stark, L., Roberts, L., & Boothby, N. (2016). Measuring physical violence and rape against Somali women using the neighborhood method. *Violence Against Women*, 22, 798–816.
- Piedad Urdinola, B., & Ospino, C. (2015). Long-term consequences of adolescent fertility: The Colombian case. *Demographic Research*, 32, 1487–1518.
- Pinheiro, P. S. (2006). *World report on violence against children, United Nations Secretary-General's study on violence against children*. New York, NY: United Nations.
- Red Cross & Red Crescent. (2012). The Sphere Handbook Glossary. Version: August 2012. Retrieved from <http://www.spherehandbook.org/>
- Reza, A., Breiding, M. J., Gulaid, J., Mercy, J. A., Blanton, C., Mthethwa, Z., . . . Anderson, M. (2009). Sexual violence and its health consequences for female children in Swaziland: A cluster survey study. *The Lancet*, 373, 1966–1972.
- Saile, R., Ertl, V., Neuner, F., & Catani, C. (2014). Does war contribute to family violence against children? *Findings from a two-generational multi-informant study in Northern Uganda*. *Child Abuse & Neglect*, 38, 135–146. doi:10.1016/j.chiabu.2013.10.007
- Saile, R., Neuner, F., Ertl, V., & Catani, C. (2013). Prevalence and predictors of partner violence against women in the aftermath of war: A survey among couples in Northern Uganda. *Social Science & Medicine*, 86, 17–25. doi:10.1016/j.socscimed.2013.02.046
- Sarnquist, C., Omondi, B., Sinclair, J., Gitau, C., Paiva, L., Mulinge, M., . . . Maldonado, Y. (2014). Rape prevention through empowerment of adolescent girls. *Pediatrics*, 133, e1226–e1232.
- Sesar, K., Živčić-Bećirević, I., & Sesar, D. (2008). Multi-type maltreatment in childhood and psychological adjustment in adolescence: Questionnaire study among adolescents in Western Herzegovina Canton. *Croatian Medical Journal*, 49, 243–256.
- Shamu, S., Abrahams, N., Temmerman, M., Musekiwa, A., & Zarowsky, C. (2011). A systematic review of African studies on intimate partner violence against pregnant women: Prevalence and risk factors. *PLoS One*, 6, e17591.
- Sinclair, J., Sinclair, L., Otieno, E., Mulinge, M., Kapphahn, C., & Golden, N. H. (2013). A self-defense program reduces the incidence of sexual assault in Kenyan adolescent girls. *Journal of Adolescent Health*, 53, 374–380.
- Sriskandarajah, V., Neuner, F., & Catani, C. (2015). Predictors of violence against children in Tamil families in northern Sri Lanka. *Social Science & Medicine*, 146, 257–265.
- Stark, L., & Ager, A. (2011). A systematic review of prevalence studies of gender-based violence in complex emergencies. *Trauma, Violence, & Abuse*, 12, 127–134.
- Stark, L., & Landis, D. (2016). Violence against children in humanitarian settings: A literature review of population-based approaches. *Social Science & Medicine*, 152, 125–137.
- Stark, L., Warner, A., Lehmann, H., Boothby, N., & Ager, A. (2013). Measuring the incidence and reporting of violence against women

- and girls in Liberia using the 'neighborhood method'. *Conflict and Health*, 7, 1.
- Stith, S. M., Liu, T., Davies, L. C., Boykin, E. L., Alder, M. C., Harris, J. M., . . . Dees, J. (2009). Risk factors in child maltreatment: A meta-analytic review of the literature. *Aggression and Violent Behavior*, 14, 13–29.
- Stith, S. M., Smith, D. B., Penn, C. E., Ward, D. B., & Tritt, D. (2004). Intimate partner physical abuse perpetration and victimization risk factors: A meta-analytic review. *Aggression and Violent Behavior*, 10, 65–98.
- Sultan Ali, N., Nawaz Ali, F., Khan Khuwaja, A., & Nanji, K. (2014). Magnitude and factors associated with child abuse in a mega city of developing country Pakistan. *Iranian Journal of Pediatrics*, 24, 140–146.
- Tappis, H., Biermann, E., Glass, N., Tileva, M., & Doocy, S. (2012). Domestic violence among Iraqi refugees in Syria. *Health Care for Women International*, 33, 285–297.
- Tumwesigye, N. M., Kyomuhendo, G. B., Greenfield, T. K., & Wanyenze, R. K. (2012). Problem drinking and physical intimate partner violence against women: evidence from a national survey in Uganda. *BMC Public Health*, 12, 399. doi:10.1186/1471-2458-12-399
- United Nations Children's Fund. (2016). Behind closed doors: The impact of domestic violence on children. Retrieved from <http://www.unicef.org/media/files/BehindClosedDoors.pdf>
- Veritas Health Innovation. (2017). Covidence systematic review software. Melbourne, Australia: Author. Retrieved from www.covidence.org
- Vinck, P., & Pham, P. N. (2013). Association of exposure to intimate-partner physical violence and potentially traumatic war-related events with mental health in Liberia. *Social Science & Medicine*, 77, 41–49. doi:10.1016/j.socscimed.2012.10.026
- Vu, A., Adam, A., Wirtz, A., Pham, K., Rubenstein, L., Glass, N., . . . Singh, S. (2014). The prevalence of sexual violence among female refugees in complex humanitarian emergencies: A systematic review and meta-analysis. *PLoS Currents Disasters*. doi:10.1371/currents.dis.835f10778fd80ae031aac12d3b533ca7
- Wako, E., Elliott, L., De Jesus, S., Zotti, M. E., Swahn, M. H., & Beltrami, J. (2015). Conflict, displacement, and IPV: Findings from two Congolese refugee camps in Rwanda. *Violence Against Women*, 21, 1087–1101.
- World Health Organization & Pan American Health Organization. (2012). *Understanding and addressing violence against women*. Geneva, Switzerland: Author. Retrieved from http://apps.who.int/iris/bitstream/10665/77432/1/WHO_RHR_12.36_eng.pdf
- Administration from Johns Hopkins University, and is currently a PhD candidate in Columbia University's Department of Epidemiology. She has over 10 years of applied experience in global health and human rights, including prevention of international child trafficking, health systems equity in Ghana and Rwanda, and HIV treatment access activism in South Africa. She has also previously served as a Peace Corps volunteer in Madagascar, focusing on health and nutrition at the community level.
- Lily Zhi Ning Lu, MPH**, is a research associate with the CPC Learning Network with a background in epidemiology. She has previously worked with the Centre of Excellence for the Study of the African Child (AfriChild Centre) in Kampala, Uganda, in collaboration with various stakeholders across nongovernmental organizations and government agencies to conduct research and the synthesis of policy briefings and a position paper on the state of the Ugandan child, around the topics of malnutrition, primary education, violence against children, and children living outside of family care. At CPC Learning Network, she provides research and programmatic support to projects focusing on child protection in humanitarian settings and psychosocial issues in refugee populations. She graduated from Columbia University's Mailman School of Public Health with a Master of Public Health in epidemiology and a concentration in the epidemiology of chronic diseases.
- Matthew MacFarlane, MPH**, is a senior research associate for the CPC Learning Network with a focus on child separation in chronic- and rapid-onset emergency settings. His work currently includes management of a suite of potential tools to measure the nature and scale of unaccompanied and separated children across emergency settings. Previously, he worked with Innovations for Poverty Action in Sierra Leone, Ghana, and Liberia, managing a variety of projects, including creating and testing a mobile application for contact tracing of Ebola patients. He has also worked in Indonesia, Sierra Leone, and Senegal on topics including legal identity, teenage pregnancy, and bringing mobile technology to antimalarial programs in rural settings. He has a passion for mobile solutions to child protection and health research issues, particularly around data collection in low-resource areas. He received a Bachelor's of Science in Zoology with honors from the University of Guelph in Ontario, Canada, and a Master of Public Health in epidemiology from Columbia University's Mailman School of Public Health.
- Lindsay Stark, DrPH**, is the director of the CPC Learning Network and an associate professor of population and family health at Columbia University's Mailman School of Public Health. She has over a decade of experience leading applied research on protection of women and children in humanitarian settings. Her particular area of expertise is measuring sensitive and difficult-to-measure social phenomenon. She has led assessment and evaluation projects in Africa, Asia, and the Middle East. She has also helped pioneer the development of new methodologies such as the Neighborhood Method to assess incidence of human rights violations, a Participatory Ranking Method that has been included in a recent World Health Organization assessment toolkit, and the Child Protection Rapid Assessment in Emergencies toolkit developed by the global Child Protection Working Group. She is the author of multiple publications on the rehabilitation and resiliency of former child soldiers and survivors of sexual violence and previously served as the director of research and curriculum at the Center on Child Protection, a teaching and research center jointly established by the CPC Learning Network, Columbia University, the University of Indonesia, United Nations Children's Fund, and the Government of Indonesia.

Author Biographies

Beth L. Rubenstein, MPH, MBA, is a senior research associate with the Care and Protection of Children (CPC) Learning Network. She is passionate about working at the intersection of global health research and practice. Current projects include developing methods to estimate the scale of children who are separated from their families during humanitarian emergencies, generating evidence to inform community interventions aimed at reducing interpersonal household violence, and evaluating the long-term impacts of large-scale social protection programs. She holds a Master of Public Health and a Master of Business