Disability and Perceived Social Norms Surrounding Intimate Partner Violence in Conflict-Exposed Communities in North Kivu, Democratic Republic of the Congo

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by

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LIST OF ABBREVIATIONS

Democratic Republic of the Congo ..... DRC
High Income Country ..... HIC
Intimate Partner Violence ..... IPV
International Rescue Committee ..... IRC
Institutional Review Board ..... IRB
Likelihood Ratio ..... LR
Missing Completely at Random ..... MCAR
Partner Violence Norms Scale ..... PVNS
Violence Against Children ..... VAC
Violence Against Women ..... VAW
Washington Group of Disability Short Set of Questions on Disability ..... WG Short Set
World Health Organization ..... WHO

ABSTRACT

DISABILITY AND PERCEIVED SOCIAL NORMS SURROUNDING INTIMATE PARTNER VIOLENCE IN CONFLICT-EXPOSED COMMUNITIES IN NORTH KIVU, DEMOCRATIC REPUBLIC OF THE CONGO

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INTRODUCTION: Studies have shown that women living with a disability and women in conflict settings who are exposed to political violence are at higher risk for experiencing IPV, but more research is needed to examine IPV among women who have the combined vulnerability of living with a disability within a conflict setting.

OBJECTIVE: This study examined the relationship between disability and perceptions of social norms regarding male-perpetrated intimate partner violence (IPV) against women in conflict-affected settings.

METHODS: The study used secondary quantitative data drawn from a baseline study of 2018 violence prevention program in North Kivu, eastern Democratic Republic of Congo (DRC), by the International Rescue Committee (IRC). Perceptions of social norms were measured through the Partner Violence Norms Scale (PVNS) which measures perceptions of social norms surrounding gender norms and violence against women

(VAW) in the home. A woman's disability status was assessed based on severity as a three-level categorical variable. Linear regression models were applied to examine the relationship of a woman's disability status and her PVNS score as well as her male partner's PVNS score.

RESULTS: Ninety-eight heterosexual couples were included. Women with severe disability had a lower PVNS scores on average than women with no disability (mean difference = -1.36, 95%CI: -2.39, -0.23, $p = 0.014$) when controlling for demographic variables. No significant difference in men's PVNS scores based on their female partner's disability status was found.

CONCLUSION: These findings suggest that women with severe disability may perceive their communities to be less accepting of IPV than women with no disability, highlighting the complexity of the relationship between disability, IPV, and social norms and the importance of further analysis where disability as recognized as spectrum. Understanding social norms that influence IPV through PVNS scores may be used to inform understanding of male perpetration of abuse and how women perceive their own social roles and protections against IPV.

BACKGROUND

Violence against women (VAW) is widespread human rights issue with serious psychological and physical health consequences. Intimate partner violence (IPV) is a form of VAW characterized by behavior within an intimate relationship that causes physical, psychological or sexual harm.[1] The World health Organization (WHO) estimates that 1 in 3 (30%) women globally have experienced IPV, while rates in the WHO's African, Eastern Mediterranean and South-East Asia Regions are closer to 37%.[2]

Women and girls exposed to violence and conflict are at even higher risk for experiencing VAW of all types, including wartime rape and abduction for marriage.[3,4] Insecurity of war breaks down rule of law, increasing impunity from human rights abuses, and normalizes violence. Evidence suggests that IPV is a more common form of VAW than violence from non-partner actors like armed militias, although both forms are underreported.[4,5] Studies have found that rates of IPV in conflict settings is between 22%-76%.[4,5,6]

A study of 204 Northern Ugandan women living in camps after being displaced by political violence estimated the prevalence of past-year IPV to be 51%.[6] A study of 2,244 women in South Sudan, another area with a decades-long history of civil war, found that 73% of ever-partnered participants had experienced IPV in their lifetimes. In addition, women who had been displaced were twice as likely to report experiencing

multiple instances of IPV than women settled in rural or urban areas.[4] A 2011 review of 10 prevalence studies on gender-based violence in humanitarian emergency situations in various countries found that there was a trend of high rates of reported physical, sexual, and psychological IPV, with the highest being 76% among 283 Bosnian and Herzegovinian women.[5] There is also evidence to suggest a correlation between conflict exposure and IPV within men. A study of 379 immigrant men in the United States found that those who were exposed to pre-migration political conflict were nearly 3 times as likely to report perpetrating IPV (adjusted odds ratio (AOR=2.84)) than those who has not been exposed.[7]

Ethnic and political conflict in the Democratic Republic of the Congo (DRC) has displaced approximately 4.5 million people since 1994.[8,9] Following the movement of Hutu genocidaires into the country after the 1994 Rwandan genocide which sparked the Second Congo War, multiple armed non-state groups currently compete for power and resources amidst weak governance and widespread corruption.[10] Of the total number of Congolese refugees displaced by violence, 78% are women and children and 12% are persons with specific needs such as survivors of sexual and gender-based violence, disabled, and HIV positive people.[9,11,12] Reflecting global trends, a study of 548 displaced Congolese women in Rwandan refugee camps found that almost half (49%) experienced violence of some kind during the conflict, 10% of women said they experienced violence after the conflict, and lifetime IPV was reported by 22% of women.[13]

Women living with disability face added vulnerability to IPV.[14,15,16,17,18] Recent evaluation of 98 conflict-exposed women in the DRC showed 85% of women with mild

disability reported past-month physical or sexual IPV than women with severe disability (76.5%) or women with no disability (70.8%).[16] Social norms, stigma, exclusion from education, employment opportunities and social assistance, inability to access public transportation, poor socio-economic status, and financial and personal dependence on an abusive caregiver make it difficult for women with disabilities to leave a violent home situation or seek help.[15,17] Inaccessibility of assistance programs and social protections are restricted further in situations of conflict.[19] A review of 117 refugee, asylum-seeker and returnee groups found that less than half (46%) of those with disability were receiving need-specific services.[20] Stereotypes of helplessness and difficulties in fulfilling gender expectations like cooking and raising children make women with disabilities targets for physical, sexual, and psychological abuse by resentful male partners.[15,16] A study of 1,800 married women in Nepal found that those with severe disability had a 68% increase in odds for experiencing physical and/or sexual IPV. They were also less likely to report having supportive in-laws.[14] In Bangladesh, a study of 226 women with disabilities found that 84% reported at least one instance of partner abuse in their lifetime. Less than half (45%) reported seeking support citing fear of shame, further social stigmatization, and partner retaliation as reasons for not coming forward.[15] Other research estimates that women with disabilities may bear up to 4 times the risk of suffering sexual VAW and IPV compared to that for women without disability.[3,21] In addition, they may face more types of abuse and for longer durations.[19] Some abuse may be disability specific such as withholding medication or assistive devices or using stigma for psychological manipulation.[22,23]

Prior research has often examined disability as a risk factor for IPV dichotomously; a woman either has a disability or she does not, but more research is needed that treats disability as it exists on a spectrum. Recent research also suggests that the severity of a woman's disability may influence the type and level of abuse that she experiences.[14,16] Women in the Nepal study were found to have a 68% increase in risk of physical or sexual IPV if they reported a severe disability when compared to women without a disability. Women who reported a mild disability were more significantly at risk for experiencing economic or in-law abuse.[14] Reversely, evaluation of 98 conflict-exposed women in the DRC showed that a higher percent of women with mild disability (85%) reported past-month physical or sexual IPV compared to 76.5% of women with severe disability and 70.8% of women with no disability.[16]

Social norms play a critical role in determining the nature of IPV against women with disabilities.[15,16] Social norms are being addressed as a way to mitigate VAW, but more information within the context of disability is needed.[14,16,24,25,26] The partner violence norms scale (PVNS) measures social norms in the form of perceptions of social expectations surrounding gender roles and violence against women in the home.[2,27] We can use PVNS scores to better understand how men's perceptions of social norms can influence their perpetration of abuse against their female partners. The scores can also inform us about how women understand their roles and protections in society and how that influences their tolerance of abuse and support-seeking behavior. Through the PVNS, we can also investigate how perception of social norms change based on a woman's disability status. These insights into the driving forces behind IPV against

women with disabilities may help strengthen primary prevention strategies and improve access to resources for current victims. Based on this current understanding, this study seeks to first, examine the relationship between a woman's disability status and her PVNS score and second, examine the relationship between a woman's disability status and her male partner's PVNS score.

METHODS

Recruitment, Assessment Methods, and Data Information

The study is a secondary analysis of quantitative baseline data from a September 2018 survey conducted in two displacement camps in North Kivu, Eastern DRC as part of the International Rescue Committee's (IRC) "Safe at Home" pilot program. The IRC is a non-profit humanitarian organization that responds to global crises. The IRC has a standing presence in the DRC where it has supplied emergency food, shelter, and health care, implemented community empowerment programs such as job training and counseling services for survivors of sexual assault. The "Safe at Home" program was implemented to address risk factors for domestic VAW and violence against children (VAC). One-hundred couples were invited to participate in the program and complete the baseline assessment which was administered.

To ensure ethical conduction, the study underwent review by the George Mason University Institutional Review Board for its use of de-identified secondary data and was determined to be exempt (protocol number 1646618). The baseline assessment where this study draws its data was reviewed and ethically approved by the International Rescue Committee Institutional Review Board (WPE 1.00.011) as well as the Comité National d'Ethique de la Santé (CNES)- Direction Provinciale du Sud-Kivu (CNES) in DRC.

When researching male-perpetrated IPV, asking women about their experiences of abuse puts them at a high risk of retaliatory violence from their partner if their responses are discovered.[28] To protect participants' confidentiality, surveys were

administered in private spaces and questions regarding experience of IPV were not included in the men's version of the survey. Participants were given a number ID rather than a personal identifier to distinguish surveys without being able to trace responses back to a specific person. Ensuring confidentiality of the women's survey content and responses not only reduced the risk of subsequent IPV but also may have encouraged women participants to respond more honestly about experiences of abuse. Survey enumerators were also gender-matched to minimize bias from social pressures and to establish a more comfortable environment for women to report trauma. [28]

Due to low literacy rates in the sample population, informed consent from participants was obtained verbally, and although the surveys were written in languages spoken by participants (Swahili and Kinyarwanda) there may have been some inability for participants to properly understand the questions because they could not read them. Enumerators were available to answer questions and help with translation. A population that is at higher risk for IPV, especially in the form of retaliatory violence, must be able to fully understand questions being asked of them regarding their abuse because they must be able to fully understand the risks associated with survey participation at all times, even after giving initial consent. [28]

Research Questions

The study will aim to answer two questions:

1. *What is the association of a woman's disability status and her PVNS score?*

2. *What is the association of a woman's disability status and her male partner's PVNS score?*

Measures

Both men's and women's surveys were used in the study. The main variables of interest were gender (categorical), female disability status (categorical), female PVNS score (continuous), and male PVNS score (continuous). Demographic covariates included the woman's age (continuous), the man's age (continuous), the woman's education status (continuous), the man's education status (continuous), the number of times the woman's family has fled violence (continuous), the number of times a man's family has fled violence (continuous), and the number of children in the home (continuous). These factors have been found to related to the risk of male perpetrated IPV against women, where younger age, lower levels of education, past exposure to violence for both men and women may increase this risk. Women with multiple births may be more likely to have experienced IPV in the form of reproductive or sexual coercion from their male partner.[29,30,31,32,33] (Figure 1)

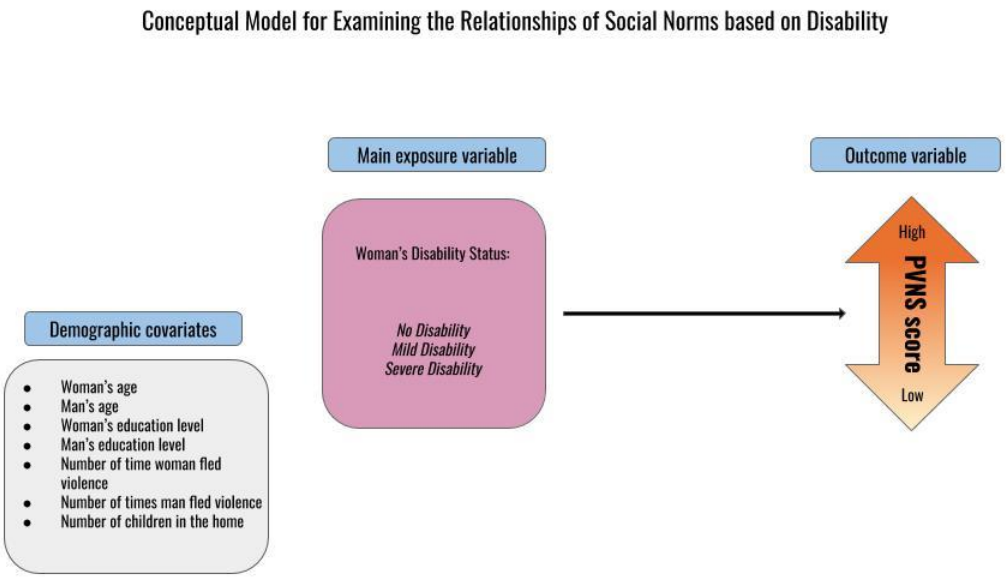

Figure 1: Conceptual Model for Research Questions

Disability status: A three-level categorical variable for disability status was created for all women participants based on responses to women's survey questions that asked for self-reported difficulty in daily functioning using the Washington Group of Disability Short Set of Questions on Disability (WG Short Set). The WG Short Set is a 6-item scale developed for measuring disability through identifying persons at risk for experiencing restrictions in carrying out daily tasks. The WG short set measures participants' ability in 6 basic domains (cognitive function, seeing, hearing, walking, communicating, and personal care).[34] The use of the WG Short Set for assessing disability has been promoted by multiple bilateral and multilateral organizations as well as multiple national governments as part of 2018 Global Disability Summit.[35]

Participants could indicate 'no – no difficulty', 'yes – some difficulty', 'yes – a lot of difficulty', 'cannot do at all', and 'no response' to any of the 6 questions. Women who answer 'no- no difficulty' to all 6 questions will be coded as having 'no disability'. Women who selected

‘yes – some difficulty’ to any of the six questions, but not ‘yes – a lot of difficulty’ or ‘cannot do at all’ to any of the six questions will be coded as living with a mild disability. Women who answer ‘yes – a lot of difficulty’ or ‘cannot do at all’ to any of the six questions will be coded as living with a severe disability. (Table 1)

PVNS score: The variable of PVNS score was created for all participants by calculating the sum of the values reported for 7 questions that asked about perceptions of community social norms, which are consistent in both the men’s and women’s survey versions. The PVNS is a 7-item scale developed to measure individual and collective perceptions of social norms that influence IPV. [27] Participants were asked how many people in their community they believe would agree with given statements that address gender roles, family relations, power dynamics, women’s expression of sexuality, and acceptability of IPV against women.[27] Participants could indicate ‘0-Nobody in my community believes this’, ‘ Some people in my community believe this’, ‘Most or all people in my community believe this’, or ‘No response’. The lowest possible PVNS score is 0, indicating that a participant did not believe that anyone in their community agreed with any of the statements, while the highest possible score is 14, indicating a belief of complete agreement from everyone in their community. When compared between disability groups, a higher score will indicate that a participant perceives their community to hold normative beliefs that are less gender equitable while a lower score will indicate that they perceive their community holds normative beliefs that are more gender equitable.[27] (Table 1). For men, the PVNS was found to have a Cronbach's alpha score of 0.76, showing acceptable internal consistency within the scale and making it a reliable measure. Among women, the PVNS was found to be an unreliable scale with a Cronbach’s alpha of 0.49. Although this alpha was low, PVNS was still applied for women to maintain consistency in measurement of outcomes and support comparability between men and women within the sample population.

Observations with missing data or responses indicating "I don't know" for any items constituting their PVNS score or disability status were omitted from the study along with their partner's observation to avoid analysis of unmatched participants. Missing data was determined to be missing completely at random (MCAR). There was no observable systematic relationship between missing data and any variable of interest.

Table 1: Table of Measures

Variable	Description	Coding
Gender	Respondents were asked to report their gender as either 'male' or 'female'	1. Female 2. Male
Age	Respondents were asked to report their age	[continuous]
Education Level	Respondents were asked to report how many years of education they have completed	[continuous]
Number of Times Participant Fled Violence	Respondents were asked to report how many times they had fled fighting since they were born	[continuous]
Number of Children in the Home (Women's survey)	Respondents were asked to report the number of biological and the number of non-biological children who are younger than 18 living in the home.	[continuous as sum of both items]
Disability Status (Women's survey)	Respondents were asked to report if they either have no difficulty (0), some difficulty (1), a lot of difficulty (2) or cannot do at all (3) the following items: • See, even if wearing glasses • Hear, even if wearing a hearing aid • Walk or climb steps • Remember or concentrate • Wash all over or dress • Communicate or be understood	1. Does not live with a disability (Indicated '0. No- no difficulty' for all items) 2. Lives with a mild disability (Indicated '1. Yes- some difficulty' to at least one item, but not '2. Yes- A lot of difficulty'

		OR ‘3-Cannot do at all’ to any of the items) 3. Lives with a severe disability (Indicated ‘2. Yes-A lot of difficulty’ OR ‘3. Cannot do at all’ to any items)
PVNS Score	Respondents were asked to report is they either feel that no one in their community believes (0), if some people in their community believe (1), or if most or all people in their community believe (2) that: • A husband who helps his wife with the household chores will not be respected by his family. • A man's family will think he is a disloyal son if he takes his wife's opinion over his mother's opinion. • A woman who openly expresses her sexual desires to her husband is perceived to be vulgar. • Husbands may use force to reprimand their wives because men should be in control of their families. • A woman who complains about her husband's violent behavior is considered a disloyal wife by her in-laws. • A woman who does not tolerate violence from her husband is dishonoring her family and should not be welcomed home. • A person who intervenes when a woman is being beaten by her husband would be considered to be interfering or meddling in the couple's private affairs.	[continuous as sum of all items]

Data Analysis

Descriptive analysis

The study used examined the frequencies of categorical demographic variables and disability status as well as mean and standard deviation for numeric demographic variables. The covariates of age, education level, number of times fled violence for both partners and number of children in the home were converted to a categorically formatted version for frequency reports but were used in the adjusted models as their continuous form to preserve statistical power. Prior to the application of statistical models, Bartlett's and Shapiro-Wilks tests were used to determine that homogeneity of variance and normality of distribution for both men's and women's PVNS scores.[36,37] While homogeneity of variance was met, data for women's and men's PVNS scores were not found to be normally distributed, with a slight right skew of 0.001 and a slight left skew of -0.272 respectively. Statistical significance was set to an alpha level of 0.05. Data cleaning and analysis was done in Microsoft Excel (version 2002) and R (version 3.6.2).

Research question 1 analysis: woman's disability status and woman's PVNS score

First, an examination of bivariate analysis between demographic covariates and the exposure (woman's disability status) and demographic covariates and the outcome (woman's PVNS score) was conducted. Simple linear regression tests were then used to compare bivariate associations between the woman's disability status and mean female PVNS scores. Multiple linear regression tests examining the same associations were done, controlling for the sociodemographic variables of woman's age, man's age,

woman's education level, man's education level, the number of times the woman has fled violence, the number of times the man has fled violence, and number of children in the home. Women who reported no disability served as the reference group to base comparison of PVNS score means between groups.

Research question 2 analysis: woman's disability status and man's PVNS score

Similar analysis methods were applied to research question 2. An examination of bivariate analysis between demographic covariates and the exposure (woman's disability status) and demographic covariates and the outcome (men's PVNS score) was conducted. Simple linear regression tests were then used to compare bivariate associations between the woman's disability status and mean male PVNS scores. Multiple linear regression tests examining the same associations were done, controlling for the sociodemographic variables of woman's age, man's age, woman's education level, man's education level, the number of times the woman has fled violence, the number of times the man has fled violence, and number of children in the home. Women who reported no disability continued to serve as the reference group for comparison of means PVNS scores between groups.

RESULTS

Demographics

Table 2 shows reported frequencies and descriptive statistics for demographic covariates. The sample included 86 partnered couples from the DRC, comprised of 86 women and 86 men. Women were, on average, were 33.2 years old while men had an average age of 39 years. Men tended to be more educated and had an average of nearly 4 years of completed schooling while women had an average of less than one (0.7 years). No women had more than 6 years of schooling (primary level). Women and men were found to have fled violence at about the same rate; 2.9 times in her lifetime compared to 3.3 times in his lifetime. All participants had fled violence at least once in their lifetime. The average number of children living in the home was 5.1. All households had at least one child with a maximum number of 15 children.

Bivariate Associations

Demographic variables and women's disability status

Table 2 shows bivariate associations between demographic variables and woman's disability status. Disability, either mild or severe, was reported by over three fourths (75.6%) of women. About 38% of the women reported having some difficulty in daily functioning and while 37% of women reported having a least a lot of difficulty. Age of a woman's male partner was found to have a significant association with disability group ($p = 0.01$). The mean age of male partners for women with no disability was 44.8

years, 36 years for women with mild disability, and 38.3 years for women with severe disability.

PVNS score and demographic variables

Woman's PVNS score: Table 2 shows bivariate associations between demographic variables and woman's PVNS score where numeric demographic variables have been translated into categories to demonstrate change in mean PVNS score. The mean PVNS score for women was 10.2, with a minimum score of 6 and a maximum score of 14. Woman's education level was found to be significantly associated with woman's PVNS score. The average PVNS score for women with no education was 10; one point lower than women who had 1-6 years of education.

Man's PVNS score: Table 2 shows bivariate associations between demographic variables and man's PVNS score where numeric demographic variables have been translated into categories to demonstrate change in mean PVNS score. The mean PVNS score for men was 10.6, with a minimum score of 5 and a maximum score of 14. No significant associations were found between demographic variables and men's PVNS scores.

Table 2: Bivariate associations between demographics and disability status, and partner violence norms scale (PVNS) scores

Demographic Variables	Total sample *N* (%)*	No disability (%)‡	Mild disability (%)‡	Severe disability (%)‡	*P* values	Woman's PVNS score: mean (SD)	*P* values	Man's PVNS score: mean (SD)	*P* values
Total sample *n* (%)	86 (100%)	21 (24.4%)	33 (38.4%)	32 (37.2%)					
Man's age: mean (SD)	39 (10.7)	44.8 (12.6)	36 (9.4)	38.3 (9.3)	0.01		0.727		0.808
18-24 years	1 (1.2%)	0 (0%)	1 (100%)	0 (0%)		7 (NA)		8 (NA)	
25-44	58 (67.4%)	9 (15.5%)	24 (41.4%)	25 (43.1%)		10.2 (1.9)		10.7 (2.5)	
45-64	25 (29.1%)	10 (40%)	8 (32%)	7 (28%)		10.2 (1.9)		10.4 (2.3)	
65+	2 (2.3%)	2 (100%)	0 (0%)	0 (0%)		12 (1.4)		12 (1.4)	
Woman's age: mean (SD)	33.2 (9.2)	33.4 (12)	32.4 (7.4)	34 (9)	0.795		0.11		0.034
18-24	9 (10.5%)	2 (22.2%)	5 (55.6%)	2 (22.2%)		10 (2.35)		9.3 (2.2)	
25-44	66 (76.7%)	16 (24.2%)	26 (39.4%)	24 (36.4%)		10.1 (2)		10.7 (2.4)	
45-64	10 (1.6%)	2 (20%)	2 (20%)	6 (60%)		10.8 (1.3)		11.1 (2.9)	
65+	1 (1.2%)	1 (100%)	0 (0%)	0 (0%)		12 (NA)		13 (NA)	
Man's education level in years: mean (SD)	3.9 (3.7)	2.8 (2.5)	3.7 (4.4)	4.8 (3.6)	0.169		0.797		0.712
None (0 years)	23 (26.7%)	5 (21.7%)	12 (52.2%)	6 (26.1%)		10.6 (2.2)		10.6 (2.5)	
Primary (1-6 years)	41 (47.7%)	14 (34.1%)	12 (29.3%)	15 (36.6%)		10 (2)		10.8 (2.2)	
Secondary (7-10 years)	17 (19.8%)	2 (11.8%)	5 (29.4%)	10 (58.8%)		9.9 (1.5)		9.8 (2.5)	
Higher (11+)	5 (5.8%)	0 (0%)	4 (80%)	1 (20%)		11.2 (1.9)		11.6 (3.1)	
Woman's education level in years: mean (SD)	0.7 (1.3)	0.8 (1.7)	0.7 (1.4)	0.6 (1.2)	0.912		0.018		0.082
None (0 years)	65 (75.6%)	16 (24.6%)	25 (38.5%)	24 (38.5%)		10 (1.8)		10.4 (2.5)	

Primary (1-6 years)	21 (24.4%)	5 (23.8%)	8 (38.1%)	8 (38.1%)		11 (2.1)		11.1 (2.3)	
Secondary (7-10 years)	0 (0%)	0 (0%)	0 (0%)	0 (0%)		NA (NA)		NA (NA)	
Higher (11+)	0 (0%)	0 (0%)	0 (0%)	0 (0%)		NA (NA)		NA (NA)	
Number of times man fled violence: mean (SD)	2.9 (1.1)	3 (1.2)	2.8 (1)	3.1 (1.1)	0.455		0.104		0.775
0-1	4 (4.7%)	1 (25%)	1 (25%)	2 (50%)		10 (0.8)		9.8 (1.9)	
2-4	74 (86%)	19 (25.7%)	28 (37.8%)	27 (36.5%)		10.3 (2)		10.6 (2.5)	
5+	8 (9.3%)	1 (12.5%)	4 (50%)	3 (37.5%)		9.5 (1.8)		11 (2.4)	
Number of times woman fled violence: mean (SD)	3.3 (1.2)	3.5 (1.5)	3.3 (1)	3.3 (1.1)	0.791		0.116		0.794
0-1	3 (3.5%)	2 (66.7%)	0 (0%)	1 (33.3%)		12 (2)		12.3 (1.2)	
2-4	71 (82.6%)	16 (22.5%)	28 (39.4%)	27 (38%)		10.2 (2)		10.5 (2.5)	
5+	12 (14%)	3 (25%)	5 (41.7%)	4 (33.3%)		9.8 (0.8)		10.8 (2.2)	
Number of children in the home: mean (SD)	5.1 (2.5)	5 (2.9)	5.3 (2.8)	4.8 (1.9)	0.734		0.278		0.613
0-2	10 (11.6%)	5 (50%)	2 (20%)	3 (30%)		10.6 (1.8)		11.5 (2)	
3-5	44 (51.2%)	9 (20.5%)	16 (36.4%)	19 (43.2%)		10.4 (1.8)		10.5 (2.6)	
6+	32 (37.2%)	7 (21.9%)	15 (46.9%)	10 (31.3%)		9.8 (2.1)		10.5 (2.3)	

*Column total

‡Row total

[a]Significant at $\alpha = 0.05$ level

Associations between disability and PVNS score

Research question 1 (*What is the association of a woman's disability status and her PVNS score?)*: As shown in Table 3, women with no disability had the highest PVNS scores on average (11), women with mild disability scored slightly lower on average (10), and women with severe disability had the lowest average score (9.75). A woman's disability status alone was not found to be a significant correlate of a woman's PVNS score, however, when controlling for the demographic variables of age, education, number of times one fled from violence for both partners as well as the number of children in the home, the relationship between woman's disability and woman's PVNS score was found to be significant. When a simple linear regression model was fit to examine the association between women's disability status and her mean PVNS score (Table 4) a significant difference in means of -1.298 between women with no disability when compared to women with severe disability ($p = 0.017$, CI: -2.355, -0.24) was found. Overall model significance was marginally insignificant ($p = 0.052$), however. After applying the adjusted model controlling for demographic variables, the comparison between women with no disability and those with severe disability remained significant with a difference in means of -1.355 (($p = 0.014$, CI: -2.391, -0.229). In further assessment of the explanatory value of disability status on female PVNS score, the likelihood ratio (LR) test comparing the full model including disability status (LR = -167.01) and demographic variables to a model including only the demographic variables (LR = -170.46) indicated that disability status significantly improved model fit ($p = 0.0316$).

Table 3: Bivariate associations between woman's disability status and woman's partner violence norms scale (PVNS) scores, (*N= 86)*

	Woman's PVNS score					
Disability status	*N* (%)	Median	Mean	SD	SE	95% CI
No disability	21 (24.4%)	11	11	1.99	0.43	10.2, 11.9
Mild disability	33 (38.4%)	10	10	1.79	0.31	9.48, 10.7
Severe disability	32 (37.2%)	10	9.75	1.93	0.34	9.08, 10.4

Table 4: Summary of regression analysis between woman's disability status and woman's partner violence norms scale (PVNS) scores, (*N= 86)*

Group comparison	Unadjusted difference in means	Unadjusted SE	Unadjusted *p* value	Unadjusted 95% CI	Adjusted difference in means	Adjusted SE	Adjusted *p* value	Adjusted 95% CI
Mild disability - No disability	-0.957	0.413	0.074	-2.008, 0.095	-0.889	0.536	0.102	-1.907, 0.266
Severe disability – No disability	-1.298	0.532	0.017	-2.355, -0.24	-1.355	0.538	0.014	-2.391, -0.229

[a]Adjusted mean differences controlling for woman's age, woman's education level, number of times woman fled violence, man's age, man's education level, number of times man fled violence, and number of children in the home
[b]Significant at $\alpha = 0.05$ level

Research Question 2 (*What is the association of a woman's disability status and her PVNS score?*): Table 5 shows associations between women's disability status and the PVNS score of their male partners. Male partners of women who reported no disability had the highest scores on average (10.9), partners of women with mild disability scored only slightly less with an average of 10.8, and partners of women with severe disability scored the lowest on average (10.2), showing a similar gradient as that seen in the women's scores. However, the disability status of a female partner was not found to be a significant correlate of a man's PVNS score either alone (p = 0.595) nor when controlling for the same demographic variables (p = 0.50). Additionally, no significant difference in means was found between the three disability status groups, as shown in Table 6. The likelihood ratio test comparing the full model including disability status (LR = -192.61) and demographic variables to a model including only the demographic variables (LR = -193.27) indicated that disability status did not significantly improve model fit (p = 0.517).

Table 5: Bivariate associations between female partner's disability status and man's partner violence norms scale (PVNS) scores, (*N= 86)*

	Man's PVNS score					
Disability status of female partner	*N* (%)	Median	Mean	SD	SE	95% CI
No disability	21 (24.4%)	11	10.9	2.52	0.55	9.78, 11.9
Mild disability	33 (38.4%)	11	10.8	2.48	0.43	9.91, 11.6
Severe disability	32 (37.2%)	10	10.2	2.30	0.41	9.45, 11

Table 6: Summary of regression analysis between female partner's disability status and man's partner violence norms scale (PVNS) scores, (*N= 86)*

Group comparison	Unadjusted difference in means	Unadjusted SE	Unadjusted *p* value	Unadjusted 95% CI	Adjusted difference in means	Adjusted SE	Adjusted *p* value	Adjusted 95% CI
Mild disability - No disability	-0.1	0.528	0.883	-1.444, 1.245	-0.006	0.722	0.993	-1.5, 1.438
Severe disability – No disability	-0.607	0.68	0.375	-1.96, 0.745	-0.609	0.724	0.403	-2.086, 0.836

[a]Adjusted mean differences controlling for woman's age, woman's education level, number of times woman fled violence, man's age, man's education level, number of times man fled violence, and number of children in the home
[b]Significant at $\alpha = 0.05$ level

DISCUSSION

Among women and men, there was an observed trend of a reduction in PVNS score with an increase in severity of a woman's disability. This correlation, however, was only significant in women. The results of this study suggest that a woman's disability is a driving force behind her PVNS score, but it does not drive PVNS scores of her male partner. More research to determine what factors do determine male PVNS score is needed. If we assume that PVNS score is a predictor a woman's risk of IPV, the results of this study do not mirror the trend that disability increases a woman's risk of experiencing IPV. While female disability has been shown to be a risk factor for IPV, it is possible that PVNS score may not necessarily relate to IPV in the same way. A connection may be made from these findings to the previously mentioned 2020 qualitative study in which participants reported that women with more severe disability face less of a risk for IPV by male partners when compared to women with mild disability.[16] Participants cited the presence of cultural norms that deter perpetration of violence against a care-dependent partners or older women, who are more likely to have a severe disability, for this discordance.[16] The qualitative study also found evidence that women who live with a relatively mild disability compared to others may still be expected to perform household chores and are subjected to greater resentment from partners when their disability hinders them.[16] This study, in conjunction with other work, highlights the complex relationship between disability, IPV, and the social expectations surrounding them and emphasizes the need for further research with larger sample populations where disability type and

severity are addressed in greater detail. IPV prevention policies may benefit from a better understanding of how social norms within communities like that of North Kivu, DRC treat differing types and severity levels of female disability.

Study Limitations

The biggest limitation of this study was its small sample size. Because of dependence on linked partners for analysis, missing information in any items comprising PVNS score or disability classification for one participant required the omission of observations for both partners in a dyadic pair. Omission of observations with missing critical data meant the loss of 7 couples, taking the initial 93 viable pairs down to 86. A larger sample size would have provided more statistical power within variable analysis and would have provided more reliable results. Another limitation of the study was its use of data from only one baseline assessment. The cross-sectional nature of the data constrained information about disability and perceptions of social norms to a single instance. It may be useful to study how these phenomena and their relationship with each other evolve over time.

Another limitation was the analysis of disability only by severity. All participants within the sample population reported experiencing functioning difficulties in more than one domain, which made classification based on type of disability difficult, as they could easily fall into more than one category. Because of this, the study did not distinguish between different types of disability (i.e. visual impairment, mobility impairment, or cognitive impairment.) in its analyses, which implies that the effects of different types of

disabilities on daily functioning are comparably similar. This approach may not be appropriate in high-income countries (HICs) where disability type can have more varied impacts, but can be applied here, where access to social services and assisted devices are not widespread.[20,38] In communities like these that have less support for people living with a disability, impairments that may be considered mild in the United States, like visual impairment, can have more severe consequences for someone who does not have resources like glasses or digital text-to-speech functions.[38] Because the study did not examine disability type, this limits understanding of how this factor may influence perception of social norms. Further analysis that addresses the variety of impacts that come from differing disability on IPV and social norms is needed. Analysis of disability by severity also presents an advantage for this research to build upon previously published work on IPV.[16] In this study, a woman's disability status was determined using the same methods as that in a recent 2020 study, which evaluated risk of male perpetrated IPV against women based on her disability status using the same dataset.[16] Characterizing disability in the same way as this previous work may allow for clearer comparability between these and future studies when assessing relationships between social norms surrounding VAW and prevalence of IPV between disability status groups.

Disability has been found to be both a risk factor for and consequence of IPV.[39,40,41] Just as women who have an existing disability are more at risk for violence committed by a partner, women who are injured as a result of an attack from their partners may face adverse health consequences, including disability.[39,40,41] It is possible that the associations found between severity of a woman's disability and her perception

of social norms in this study can be explained to some degree by any previous experience of IPV rather than her disability in the case that IPV experience was the cause of her disability.

Because the study population had a very high reported incidence of physical and/or sexual IPV (78.57%) and reported disability (75.6%) among women, findings are most generalizable to people with demographics and experiences represented in the study, specifically that of a history of exposure to conflict and residence within a low-income country (LIC).[16] However, it is still possible to link observations made here to communities in other settings in HICs, like the United States, where incidence of physical, sexual, and/or stalking-related IPV among women (36.4%) is estimated to be similar to global average of 30% and prevalence of disability (25.7% of noninstitutionalized adults) is higher than the global average of 15.6%.[42,43,44] Because the "Safe at Home" pilot program used the baseline survey to determine levels of assistance needed for women experiencing IPV, participants may have over-reported IPV because they thought this might give them greater access to benefits.[16] The same logic may also apply to self-reports of disability, where a woman believed she would receive more help if she reported a disability. It is more likely, however, that IPV and disability have been under-reported due to underlying stigma that perpetuates feelings of shame and fear for loss of social status if they were to reveal their disability or IPV experience.[14,45,46,47] Participants may have under-reported either disability or IPV due to social desirability bias where their responses were influenced by perceptions of researchers' attitudes.[48] It is also possible that a woman's disability is more severe than she perceives it to be. Under-

reporting of disability decreases the sample size of women who truly live with a disability and reduces the power of statistical tests to detect associations between disability status groups and their PVNS scores.

The WG Short Set is designed to identify persons who are at higher risk for experiencing restrictions on performing daily tasks (like cooking and dressing) and roles (like working or caring for children) by assessing function in basic domains.[34] However, a person who reports limitations in these domains may or may not experience limitations on more complex activities. Depending on their environment (support systems and access to assistive devices), disability can vary widely from person to person. The WG Short Set is useful for this study because participants can be assumed to have low access to support, but the measure is a limited tool for measuring the true extent and experience of disability.[34] The PVNS also has limitations as a measure for assessing social norms. Social norms are subjective for every individual in the community and it can only capture a fraction of a person's complex understanding of their community. Additionally, the PVNS does not necessarily tell us about an individual's personal beliefs regarding traditional gender roles and IPV. Additionally, the measure was found to be more fit for use with male PVNS scores than for female PVNS after calculating Cronbach's alpha scores (0.76 and 0.49 respectively). The PVNS, however, offers the advantage of protection against reverse coding due to consistent formatting of item response options. The scale also addresses a comprehensive array of social ideas as indicators for evaluating gender equity norms rather than asking participants about their perceptions of gender equity directly. This may help to reduce participant subjectivity by leaving little

open to interpretation and limiting the scale's dependence on a participant's own understanding of these concepts. Further research should seek to explain this discrepancy in PVNS reliability between men and women.

As the difference between gender identity and assigned sex at birth have become clearer in research and are becoming more widely recognized, it is important to note that this study examined social norms surrounding male perpetration of IPV within a heterosexual relationship, using the term 'male' interchangeably 'man' and 'female' with 'woman'.[49] More research is needed on IPV, disability, and social norms that consider relationships within a fuller gender and sexuality spectrum.[50,51]

Implication of Findings

Survivors of IPV, people living with disability, and conflict-affected populations present unique challenges for research because they are often hidden, vulnerable, or difficult to reach.[28] Because of displacement from conflict, stigma surrounding disability and IPV, and risk of retaliatory violence from partners, usual sampling methods, like simple random sampling which requires a list of known potential participants with predictable locations for contact, are either ineffective or inappropriate and ethical considerations must be augmented.[28,52,53] These challenges have resulted in a dearth of research on the relationship of IPV and disability, especially within conflict-exposed populations. Social norms have increasingly been recognized as a risk factor for IPV and other forms of VAW so it is crucial to supplement the body of work that approaches them as an avenue for examining IPV.[14,16,24,25,26,54] Effective interventions such as school-based educational programs, community-wide media campaigns, and group-based participatory

initiatives have demonstrated the capacity that addressing social norms can have in preventing IPV and other forms of VAW.[54,55,56] Once example is the Intervention with Microfinance for AIDS and Gender Equity (IMAGE) program conducted in South Africa between 2001-2005.[54,57] IMAGE has been successful in reducing reported male-perpetrated IPV in participating rural, low-income households by 55%.[54,58] This program uses a combination of training and skill-building sessions on gender norms, cultural beliefs, and communication.[54,58] Part of the program's success at shifting social norms towards greater gender equity, rather than seeing an unintended consequence of increased IPV rates, has been credited to its focus on male partner engagement in these sessions.[54,58] There is evidence that women's empowerment programs that do not actively engage male partners, while invaluable in offering women financial and educational opportunities, can trigger feelings of resentment from men in communities with more strictly traditional gender roles, resulting in an increase in rates of VAW. [54] Bell Bajao!, an intervention program launched in India in 2008, reduced the number of community members who agreed that "Domestic violence is a private family matter; women should tolerate violence in silence; bystanders should not intervene." by broadcasting a series of public service announcements (PSAs) in print, over radio, and on television that reached 130 million people.[55] The PSAs featured images of men and boys standing against VAW by ringing the doorbells of homes to interrupt overheard domestic violence. [55] The involvement of men in group-based participatory education is crucial for intervention campaigns involving social norm change. Despite this progress, there is still a lack of programming that utilizing social norm change to reduce stigma and IPV risk for women

living with a disability. Programs such as this are especially needed in conflict-affected people who live in communities where IPV and disability is more common. Despite its small sample size, this study holds significance for future research and intervention on IPV, social norms, and disability by providing insight into this relationship within an understudied population.

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