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# Associations between exposures to occupation-related events, depression and intimate partner violence among women in the occupied Palestinian Territories

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## ABSTRACT

War and conflict impact on women's mental health and experiences of intimate partner violence (IPV), including in the occupied Palestinian Territories (oPT). Drawing on a cross-sectional population representative sample ( $n=534$ ) collected in February 2017 in the oPT, we sought to (i) characterise the patterning of occupation-related events among women (18+) living in the oPT, (ii) to descriptively assess factors associated with this patterning, (iii) to assess the health impacts of occupation-related events by this patterning, specifically experience of IPV and poor mental health, and (iv) to assess the pathways through which occupation-related events are associated with IPV experience. Using Latent Class Analysis we identified three 'classes' of exposure to occupation-related events: 1 in 20 experienced multiple forms directed at themselves, their families and homes, 42.3% reported experiences against family members and their homes, and half reported relatively few direct experiences of occupation-related violence. Group membership was associated with increased past year IPV experience, and depressive symptoms. Using structural equation modelling we demonstrate that experiences of occupation-related events increased IPV experience via two mediated pathways; increased gender inequitable attitudes, and increased depressive symptoms and quarrelling with their husband. Preventing IPV requires addressing occupation-related events as well as transforming gender norms.

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## KEYWORDS

Conflict; war; violence against women; survey; Palestine; structural equation model; latent class analysis

## Introduction

Globally, a growing body of research has demonstrated that women's experiences of war and political-related violence are associated with increased experiences of intimate partner violence (IPV) and poorer mental health (Hossain et al., 2014; Jewkes et al., 2017). There is particularly strong evidence showing an association between conflict-related events and depression, and post-traumatic stress. For instance, a systematic review of studies among refugees and post-conflict populations globally, found exposure to conflict related events were associated with increased depressive symptoms and symptoms of post-traumatic distress (Steel et al., 2009). While a more recent systematic review of civilian war survivors who remained in the conflict zone, found a pooled prevalence of 27% for depression and 26% post-traumatic stress, with older age associated with poorer mental

health, and unemployment, and being female associated with higher reported post-traumatic stress (Morina et al., 2018). Similarly, a systematic review of any post-conflict populations showed the prevalence of any mental disorder was 22.1% (Charlson et al., 2019).

The evidence on the association between experiences of war – or conflict-related events and IPV is weaker (Hossain et al., 2014). However, the number of studies showing this association from multiple settings is increasing. For instance, in Uganda Kinyanda et al. (2016) found that experience of physical and sexual war torture was associated with greater IPV experience for women. Likewise, in South Sudan, exposure to war related violence increased the likelihood young women experienced IPV (Murphy et al., 2019). While in Papua New Guinea, men who reported the enduring impact of conflict were significantly more likely to report perpetration of sexual and/or physical IPV (Jewkes et al., 2017).

In the occupied Palestinian Territories (oPT), experience of occupation-related events is widespread and has been ongoing since 1948 (Batniji et al., 2009). This has included Israeli incursions into, and occupation of, Palestinian land, specifically from 1967 onwards creating the occupied Palestinian Territories (oPT). Since then there have been increasing levels of conflict as Palestinians seek to regain control of occupied territories, most notably since September 2000 and the second *intifada* (Batniji et al., 2009). The ongoing occupation of Palestinian land has increased levels of anxiety and reduced people's sense of wellbeing (Batniji et al., 2009) and undermined the ability of the Palestinian state to provide health and services to its people (Mataria et al., 2009). Indeed it may be better to conceptualise the impact of the occupation as two inter-linked experiences, first the wider militarised occupation of Palestine which includes the use of civil and economic tools to subjugate the Palestinians, and second the direct use of the military force (conflict), with different characteristics and forms of violence experienced under both projects.

Research in the oPT reflects the global evidence base, with studies showing a strong association between experience of occupation-related events and poorer mental health, and increased IPV. For instance, studies have shown exposure to occupation-related events is associated with increases in major depression and post-traumatic stress disorders (Madianos et al., 2012; Thabet et al., 2008). While Clark et al. (2010), drawing on population-based data from the oPT, found women's experience of IPV was associated with her husband having directly or indirectly experienced occupation-related violence, or the household having experienced the negative economic impacts of occupation (Clark et al., 2010). More recently a study demonstrated strong associations between experiences of collective violence (e.g. demolishing of homes) and increased experiences of IPV, as compared to those who had experienced individual conflict related violence (Said et al., 2018).

Current research on the associations between conflict-related events and women's mental health and IPV experience have two primary limitations. First, experiences of conflict-related events are often treated in relatively simplistic ways in models, such as a binary (never/ever) or a score. However, experiences of conflict-related events are likely to cluster together (i.e. if you experience one event it may be more likely you experience multiple events), and it may be more appropriate to conceptualise these exposures as clustering together. Second, despite growing evidence about the relationship between experiences of conflict and increased IPV, the specific pathways through which experiences of events associated with war and conflict may increase women's own experiences of IPV are less clear. Indeed the association between experiences of conflict-related events and IPV is not direct, but rather associated with how such experiences increase other recognised risk factors for IPV.

In this paper we have four aims: (i) to characterise the patterning of occupation-related events among women (18+) living in the oPT, (ii) to descriptively assess factors associated with this patterning, (iii) to assess the health impacts of occupation-related events by this patterning, specifically experience of IPV and poor mental health, and (iv) to assess the pathways through which occupation-related events are associated with IPV experience.

## Methods

We conducted a population-based nationally representative survey in the occupied Palestinian Territory (oPT), in February 2017. The sampling framework ensured a representative, self-weighting sample was constructed for the entire oPT, based on the 2007 Population and Establishment Census. We randomly selected primary sampling units (PSU) based on the weighted data. For each selected PSU, teams approached every tenth household in the PSU, and then used a Kish table to randomly select eligible participants in the household for the study. For inclusion, women had to be aged 18 or older, willing to participate and able to provide informed consent. Refusal rate was 2.7%, and women were not replaced if they refused. The low refusal rate is common across studies in the oPT.

Interviews were face-to-face, with trained female enumerators conducting these in Arabic. Training of interviewers covered issues related to interviewing participants about sensitive topics such as violence against women and girls and followed international guidance on undertaking such research (WHO, 2001). The study team ensured audio-privacy, including the option to reschedule to a different time or day, and provided a list of referrals to supportive services on a small card, which could be hidden. All participants provided verbal informed consent, and the study was approved by the South African Medical Research Council's ethics committee.

## Measures

We assessed three forms of past year IPV in the questionnaire among women who were currently married: emotional, physical, and sexual. All items drew heavily on the WHO's Multi-Country Study on Domestic Violence (Garcia-Moreno et al., 2006), previously used across Asia-Pacific and the Middle East. We asked five behaviourally specific items about women's experiences of emotional abuse, which includes belittling, humiliation, scaring and threatening from a current husband. We also asked five items about physical abuse from a current husband, such as being slapped, hit, or threatened with a gun or knife. Finally we asked three items about sexual violence and coercion from their husband. For all items, responses were: 'never', 'once', 'few', or 'many'. A positive response to any one item of a scale, led to women being classified as having experienced that form of abuse in the past year.

Depression was assessed using 10 items from the CESD (Radloff, 1977), which had previously been used in this population (Schiff et al., 2017). Items were framed around statements about feelings in the past week, such as: 'During the past week I felt fearful' with responses, 'none or rarely', 'some or a little', 'moderate amount of time', and 'most or all the time'. Items were summed with higher scores indicating more depressive symptoms (range 0-30, Cronbach alpha = 0.87). 17 people had one missing response and four had two missing responses (from the 10 items), as such we imputed these variables using the mean scores for that item.

To assess experiences of occupation-related events we identified ten events, which indicated personal and family experiences, rather than community experiences (e.g. community restrictions on movement). To identify these events we reviewed items asked in a previous survey in the oPT (Clark et al., 2010) and removed those with very low prevalence (<1%) and three items associated with economic impacts of the occupation. Three items asked about whether the woman's husband, or family member, had ever been 'cursed or insulted', 'arrested or detained', or 'beaten, hit, or wounded' by the occupation forces or settlers. Two items assessed collective experiences of conflict, specifically, one item asked whether occupation forces had ever broken in their house, and a second if occupation forces 'had confiscated land or demolish[ed] your home or part of it'. One item asked whether the woman had witnessed a family member being killed. Finally, three items assessed whether the woman had ever been 'cursed or insulted', 'arrested or detained', or 'beaten, hit, or wounded' by the occupation forces or settlers. For all items, responses were either yes or no.

We also assessed socio-demographics, specifically age (18/29, 30/49 and 50+) and education level (primary or less, incomplete secondary, or completed secondary or more). We asked about marital

status, as either currently married, previously married, or never married. To assess poverty we asked two items, whether women had needed to borrow in the previous month because of hunger (more than once a week or almost every week versus once or twice and never) and worked in the past year (yes/no). To assess gender attitudes we asked seven items such as: ‘I think that if a wife does something wrong her husband has the right to punish her’. These items were drawn from the Gender Equitable Men’s Scale (GEMS), which had previously been used in the oPT and more broadly in the region (El Feki et al., 2017). We modified it, by clearly using ‘I statements’. Responses were on a four-point Likert Scale (Strongly disagree, disagree, agree, strongly agree), and items were summed (range 7–28, Cronbach alpha = 0.58).

### **Statistical analysis**

We first described the sample in terms of counts and percentages for categorical variables and for continuous variables, with means and associated 95% confidence intervals (95%CI). We then examined individual and overall occupation-related event exposure by prevalence and then by age and region, reporting percentages and chi-squared *p*-values.

To assess whether there were underlying latent subgroups defined by intersecting variables associated with different occupation-related event exposures, we conducted latent class analysis (LCA) to group women into ‘classes’. The ten variables describing different occupation-related event exposures were used to define these groups (as outlined above). We assessed the model fit using the likelihood ratio chi-squared statistic ( $L^2$ ), Bayesian Information Criterion (BIC), Akaike Information Criterion (AIC), entropy and the Lo-Mendell-Rubin adjusted likelihood ratio test (LMR LRT), as well as theoretical plausibility. LCA assumes that there is local independence in the variables conditional on the latent class, and we assessed this using bivariate residual Pearson chi-squared statistic. LCA was conducted in MPlus version 8.1. After identifying the best class solution, we assumed women could be allocated into these classes that describe their occupation-related event exposure level.

We assessed descriptively the associations between class allocation between socio-demographic, poverty measures, depression and IPV experience, describing the proportion and number, or mean and 95%CI in each group, assessing difference with chi-squared or Adjusted Wald *p*-values in Stata 16/IC. We then assessed whether occupation-related class allocation was independently associated with married women’s past year experience of emotional IPV, physical IPV and sexual IPV, and depressive symptoms (all women), using logistic regression for binary outcomes and linear regression for continuous outcomes. We present crude and adjusted odds ratios (aORs) and regression coefficients ( $\beta$ ) as appropriate, and 95%CIs and *p*-values. For the adjusted models, we included age, education, location (Gaza/West Bank), community type (rural, urban, refugee), borrowing, working, and gender attitudes. All analyses accounted for the survey structure.

Finally, we conducted structural equation modelling in Stata version 16/IC. We constructed a latent variable for IPV comprising of scores for past year physical, sexual and emotional IPV, using factor analysis and then building a latent model testing for goodness of fit. Our main endogenous variable was occupation-related event exposure which we treated as a direct score. To build the SEM we used theoretical assumptions about pathways, regressed each of these variables to one another on the pathway (e.g. event experience with gender attitudes) and then fitted the structural model. We removed non-significant pathways ( $p > 0.05$ ) and assessed goodness of fit statistics and reported standardised coefficients.

### **Results**

In total 534 women completed the survey (of 550), and 68.4% ( $n=365$ ) were currently married and could thus respond to IPV experiences (Table 1), and a quarter (23.0%) had never been married.

Overall, just over a third (39.7%) were aged 18–29, just under half (43.6%) were aged 30–49, and 16.7% were aged 50 or over. Education levels were relatively low, with a third (30.0%) having completed secondary education, and a further third (39.1%) having secondary education (incomplete). A fifth (19.9%) had borrowed money or food in the past month because of hunger, and only 11% had worked in the past year.

Reflecting the population at the time of the survey, just under two-thirds (62.6%) were in the West Bank, and 37.5% in Gaza. Slightly less than half (45.1%) were located in a city, and a quarter (27.5%) in rural communities, and further quarter (27.3%) in refugee camps. By region, in Gaza 38% were in refugee camps, 57.5% in cities and 4.5% in rural communities, while in the West Bank 21.0% were in refugee camps, 37.7% in cities and 41.3% in rural communities, and this was significantly different ( $p < 0.001$ , data not shown).

Among currently married women approximately a quarter of women reported each form of IPV in the past year, specifically emotional (27.7%), physical (25.2%) and sexual (24.4%) IPV. Mean scores for depression were similar among all women.

**Table 1.** Overall and descriptive associations between occupation-related event exposure class and socio-demographic variables and health outcomes.

		Overall %(n)/ mean (95%CI)	Least occupation- related event exposure %(n)/ mean(95% CI)	Moderate occupation-related event exposure %(n)/ mean(95%CI)	Severe occupation- related event exposure %(n)/ mean(95%CI)	<i>p</i> -value
Age	18/29	39.7(212)	47.1(136)	33.8(8)	4.3(1)	<0.001
	30/49	43.6(233)	41.2(119)	46.9(104)	43.5(10)	
	50+	16.7(89)	11.8(34)	19.4(43)	52.2(12)	
Education	Primary or less secondary	31.1(166)	26.6(77)	35.1(78)	47.8(11)	0.041
	Incomplete secondary	39.1(209)	39.1(113)	40.1(89)	30.4(7)	
	Completed secondary	30.0(159)	34.3(99)	24.8(55)	21.7(5)	
Relationship	Currently	68.4(365)	65.4(189)	73.4(163)	56.5(13)	<0.001
	Previously	8.6(46)	8.0(23)	6.8(15)	34.8(8)	
	Never	23.0(123)	26.6(77)	19.8(44)	8.7(2)	
Territory	Gaza	37.5(200)	41.9(121)	31.5(70)	39.1(9)	0.057
	West Bank	62.6(334)	58.1(168)	68.5(152)	60.9(14)	
Residence	City	45.1(241)	51.2(148)	38.7(86)	30.4(7)	0.001
	rural	27.5(147)	27.0(78)	29.7(66)	13.0(3)	
	Refugee camp	27.3(146)	21.8(63)	31.5(70)	56.5(13)	
	Borrow past month (yes)	19.9(106)	19.4(56)	19.4(43)	30.4(7)	0.429
	Earned past 12m (yes)	11.8(63)	11.1(32)	12.2(27)	17.4(4)	
	Gender attitudes (>=less equitable)	10.6(10.3, 10.8)	10.4(10.1, 10.7)	10.7(10.4, 11.1)	11.1(9.8, 12.3)	0.005
	Emotional IPV past year (yes)	27.7(101)	20.2(40)	33.1(54)	53.9(7)	
Physical IPV past year (yes)	25.2(92)	20.6(39)	29.5(48)	38.5(5)		
Sexual IPV past year (yes)	24.4(89)	19.6(37)	30.1(49)	23.1(3)		
Depression (mean)	12.0(11.3, 12.6)	11.1(10.2, 11.9)	12.7(11.7, 13.7)*	16.1(13.1, 19.0)**	0.0771	
Depression (mean) – married	11.9(11.2, 12.7)	11.3(10.3, 12.3)	12.4(11.3, 13.6)*	14.8(10.3, 19.2)**		

Note: For continuous variables, compared to least trauma as reference: \* $< 0.05$ ; \*\* $< 0.01$ .

**Table 2.** Prevalence of occupation related trauma and descriptive associations with age and community.

	Overall	Age			<i>p</i> -value	Community		
		18–29	30–49	50+		Gaza	West Bank	<i>p</i> -value
Insult husband/family member	37.5	29.3	39.5	52.3	0.001	34.2	39.5	0.217
Arrest husband/family member	41	30.7	45.9	52.8	<0.001	31.5	46.7	0.001
Injured partner/family member	29.6	22.2	30.5	44.9	<0.001	29	29.9	0.818
Broken into home	36.5	27.8	36.1	58.4	<0.001	26	42.8	<0.001
Confiscate land/home	14.3	13.4	13	22.5	0.05	14.2	14.4	0.959
Demolish home	18.2	19	16.3	21.4	0.54	31.5	10.2	<0.001
Witness killing of family member	16.1	9.4	17.2	29.2	<0.001	15.5	16.5	0.769
Insult you	9.6	4.3	9.9	21.4	<0.001	8.5	10.2	0.523
Injured you	5.3	0.9	5.6	14.8	<0.001	6	4.8	0.549
Arrest you	5.4	1.9	5.6	13.6	<0.001	8.5	3.6	0.016
Any occupation related trauma	62.1	52.2	66.8	72.4	0.001	61	62.7	0.71

Experience of occupation-related events were common, with just under two-thirds (62.1%) reporting experience of any occupation-related event (Table 2). The most common form of occupation-related event reported was arrest of husband/family member (41%), insulting of a husband or family member (37.5%) and house broken into (36.5%). A fifth (18.2%) reported their home had been demolished, and just under a third (29.6%) reported a family member or husband had been injured because of the occupation. 16.1% reported witnessing the death of a family member. 1 in 20 women reported being directly injured, and 1 in 20 of the women being personally arrested by the occupation forces. Experience of these life time occupation-related events were clearly associated with age, with a greater proportion experiencing these by age, apart from demolish home, where age was not associated with experience. Overall, there were no differences by region in occupation-related events (Gaza/West Bank) but the proportion of women reporting arrest of husband/family member, and broken into home, were higher in the West Bank, and demolished home and arrested you, were more common in Gaza, reflecting different experiences of occupation.

Using LCA we identified that a three-class solution was statistically and theoretically the most plausible model (Tables 3 and 4, Figure 1), for intersecting experiences of occupation-related events. Almost 1 in 20 of the sample (4.4%) had experienced very high levels of all types of events related to the occupation in their lifetime, directed at them as well as at family members and/or their husband. In this group, almost all had personally experiencing being insulted, injured or arrested. In the second class comprising 42.3% of the sample, most of the women had not experienced personally insults, injury and arrest, but had a husband or family members who had experienced such events, or their home had been broken into. The third, and largest, class with just over half (53.4%) of women, had low conditional probabilities of having experienced the forms of occupation-related events we assessed.

**Table 3.** Conditional probabilities related to class membership for a three class solution.

	Least occupation-related event exposure 53.4%(289)	Moderate occupation-related event exposure 42.3% (222)	Severe occupation-related event exposure 4.4%(23)
Insult partner/family member	0.019	0.762	1
Arrest partner/family member	0.032	0.832	0.946
Injured partner/family member	0.016	0.576	1
Break house	0.112	0.624	0.952
Confiscate land	0.056	0.202	0.615
Demolish part or whole house	0.114	0.219	0.679
Witness killing	0.055	0.238	0.719
Insult you	0	0.129	0.937
Injured you	0	0.04	0.812
Arrest you	0.012	0.037	0.748

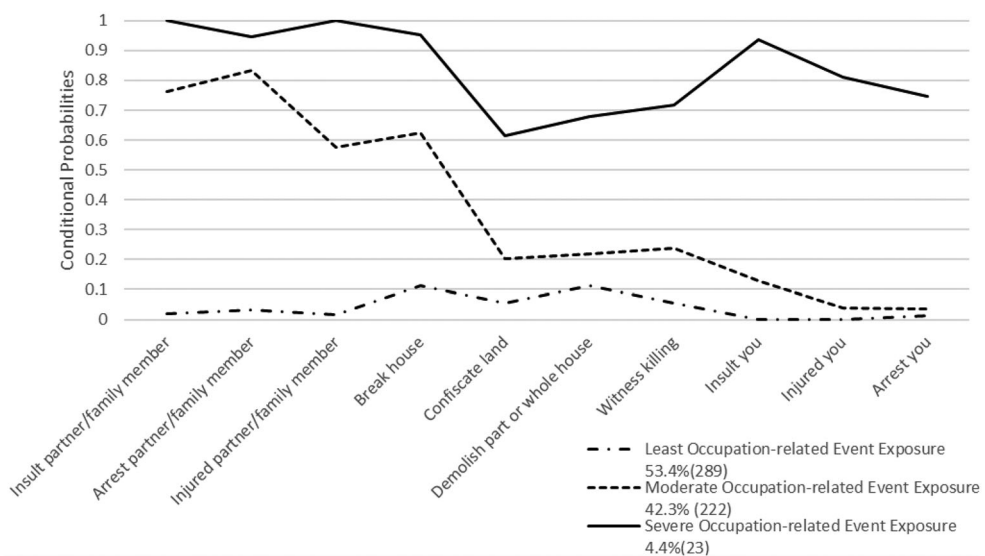
**Table 4.** Fit statistics for the latent class analysis comparing different class solutions.

Fit statistic	2 Classes	3 Classes	4 Classes
Likelihood ratio chi-squared statistic ( $L^2$ )	333.021	281.539	227.616
AIC	4110.326	3953.34	3920.645
BIC	4200.215	4090.31	4104.702
Entropy	0.875	0.907	0.791
Lo-Mendell-Rubin adjusted likelihood ratio test (LMR LRT)	<0.001	0.0602	0.0162

**Table 1** shows the socio-demographic characteristics of women by occupation-related event group/class. Women in the severe conflict-related events class were older, with half (52.2%) being age 50 or over, and almost all others aged 30–49 years. This contrasted with the other conflict-related event groups, and notably the women with the lowest conditional probabilities of experiencing events were the youngest (47.1% being 18–29 years). The women in the severe conflict-related event exposure group were also the least well educated group, with almost half not having progressed beyond primary school, compared to 35.1% in the moderate event exposure group and 26.6% in the lowest event exposed category. Most of the women in the sample were currently married, but this was least common among women with the greatest conflict-related event experience (56.5%) compared to 73.4% of those in the moderate class and 65.4% of those in the lowest event exposure class. A higher proportion of those in the moderate or severe classes (31.5% and 56.5% respectively) were living in refugee camps. Women in the severe event exposure class were more likely to have borrowed money for food in the last month than those with least event exposure (30.4% v. 19.4%).

Among currently married women, a higher proportion of those in the moderate conflict-related event exposure class, and high conflict-related event class, reported past year emotional IPV, and physical IPV (**Table 1**). There was some evidence that a higher proportion of women in the moderate conflict-related event exposure class had experienced sexual IPV, than those in the least event exposure class. Similarly, women in the moderate and severe trauma event exposure classes reported significantly more symptoms of depression, than those in the least event exposure class.

Unadjusted and adjusted associations between health outcome and conflict-related event class are shown in **Table 5**. Compared to those in the least conflict-related event class, those in higher

**Figure 1.** Conditional probabilities of different occupation-related event exposures by 'class' among women in the occupied Palestinian Territories.



**Table 5.** Unadjusted and adjusted multivariate analysis assessing whether occupation-related event exposure class is independently associated with health outcomes.

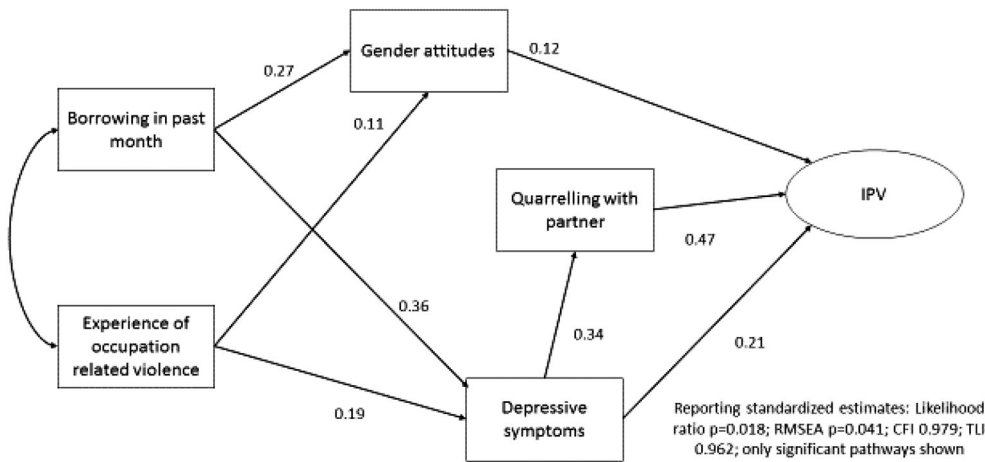
	Past 12 month – Emotional IPV				Past 12 months – Physical IPV			
	OR(95%CI)	<i>p</i> -value	aOR(95%CI) <sup>a</sup>	<i>p</i> -value	OR(95%CI)	<i>p</i> -value	aOR(95%CI) <sup>a</sup>	<i>p</i> -value
Least occupation-related event exposure	ref		ref		ref		ref	
Moderate occupation-related event exposure	1.85(1.14, 2.99)	0.013	2.12(1.22, 3.68)	0.008	1.61(0.98, 2.63)	0.06	2.00(1.14, 3.51)	0.015
Severe occupation-related event exposure	4.35(1.39, 13.63)	0.012	6.25(1.50, 26.01)	0.012	2.40(0.74, 7.79)	0.143	4.19(1.11, 15.74)	0.034
	Past 12 month – Sexual IPV				Depression (all women)			
	OR(95%CI)	<i>p</i> -value	aOR(95%CI) <sup>a</sup>	<i>p</i> -value	β(95%CI)	<i>p</i> -value	adjusted β(95%CI) <sup>a</sup>	<i>p</i> -value
Least occupation-related event exposure	ref		ref		ref		ref	
Moderate occupation-related event exposure	1.77(1.08, 2.90)	0.025	2.15(1.25, 3.71)	0.006	1.63(0.33, 2.93)	0.014	1.38(0.10, 2.66)	0.034
Severe occupation-related event exposure	1.23(0.32, 4.79)	0.762	1.92(0.52, 1.17)	0.329	5.00(2.00, 8.00)	0.001	3.29(0.42, 6.15)	0.025

<sup>a</sup>Adjusted for age, education, region, location type, gender attitudes; borrowing because of hunger, earning in past month

All analyses taking into account survey structure

**Table 6.** Structural model and fit statistics for structural equation model assessing direct and indirect pathways between occupation-related event exposure and IPV.

	Coefficient	95%CI	p-value
Occupation-related event exposure -> Depression	0.19	0.11, 0.26	<i>p</i> <0.001
Borrowing -> Depression	0.36	0.29, 0.44	<0.001
Occupation-related event exposure -> Gender attitudes	0.11	0.03, 0.20	0.008
Borrowing -> Gender attitudes	0.27	0.19, 0.35	<0.001
Depression -> Quarrelling	0.34	0.25, 0.42	<0.001
Depression -> IPV	0.21	0.11, 0.31	<0.001
Gender attitudes -> IPV	0.12	0.02, 0.22	0.024
Quarrelling -> IPV	0.47	0.38, 0.57	<0.001
Likelihood ratio test	<i>p</i> =0.018		
RMSEA	<i>p</i> =0.041		
CFI	0.979		
TLI	0.962		



**Figure 2.** Structural equation showing pathways between experience of occupation-related event exposure and IPV experience.

conflict-related event classes reported more past year emotional IPV (moderate exposure: aOR2.12, *p*=0.008; severe exposure: aOR6.25, *p*=0.012) and physical IPV (moderate exposure: aOR2.00, *p*=0.015; severe exposure: aOR4.19, *p*=0.034), and those in the moderate exposure to occupation-related events class also reported significant more past year sexual IPV (aOR2.15, *p*=0.006). Among all women, compared to those in the least exposure class, those experiencing more conflict-related events reported more depressive symptoms (moderate exposure: adjusted  $\beta$ 1.38, *p*=0.034; severe exposure  $\beta$ 3.29, *p*=0.025).

Our final SEM had satisfactory goodness of fit statistics (Table 6, Figure 2). Experiences of occupation-related events were not directly associated with increased IPV experience, rather this was mediated through two other sets of pathways. One pathway was mediated by women reporting more inequitable gender attitudes, and a second by increased experience of depression. In addition, the path from depression to IPV was also mediated by increased quarrelling. Occupation-related event experience covaried with borrowing in the past month and the two paths between borrowing and IPV were mediated by conservative gender attitudes and depression, in the same way as the occupation-related event exposure paths were.

### Discussion

Our analysis has shown that exposure to occupation-related events among a representative sample of women from the West Bank and Gaza was common with 60% having experienced directly or

indirectly such events, and that they could be grouped into three classes, based on their overall experience of occupation-related events. One group of women, who were the smallest in number, but still relatively common (almost 1 in 20) had been subjected to multiple forms of occupation-related events themselves, and also had family or their husband reporting similar experiences and had experienced destruction or invasion of their property. A second group of women lived with the pain of knowing their husband or family had experienced forms of conflict-related events and had had their property broken into, but generally had not personal experience. A third group, about half of the sample, reported that they had not been directly experienced the events we assessed, and nor had their family members. We did not, however, assess women's collective experiences of conflict-related violence, such as movement being limited, experiences of curfew or witnessing bombing or military, and as such, our data under-estimates the scale of conflict-related events experienced by women in the oPT.

In this study we have shown that experience of occupation-related events was strongly associated with married women's experience of violence within the home from their husband. There were clear associations, and a dose response, whereby those experiencing the most occupation-related events had higher odds of experiencing IPV. The findings suggest that exposure of both women and their husbands and family to events related to the occupation impacts on their family dynamics within the home, likely through its impact on both women and men's mental health and self-esteem, increased poverty, and the emotional impact of support structures being separated, and greatly increasing women's risk of experiencing partner violence. The same patterns are seen in the group of women where the direct occupation event experienced is that of other family members (most likely their husband's), although the risk of women experiencing IPV then is elevated but much lower than when women themselves have also having experienced such events.

In this study we found that 28%, 25% and 24% of currently married women experienced past year emotional, physical and sexual IPV respectively, figures which are comparable to other recent surveys in Palestine (Clark et al., 2010; Elghossain et al., 2019), and higher than many from across other Arabic countries (Elghossain et al., 2019). Two previous surveys conducted 20 years earlier, in 1994 and 1995, found significantly higher prevalence rates of past year IPV (Haj-Yahia, 2000) than more recent surveys and this study. It may be that the past-year prevalence of IPV is decreasing. The prevalence of past year sexual IPV in this study (24%) was notably higher than previous recent Palestinian studies, specifically 10.6% (Clark et al., 2010) and 7% (El Feki et al., 2017), but similar to studies done in the 1990s (Haj-Yahia, 2000). The reasons for the variation in the prevalence of sexual IPV is unclear, but may be linked to the measurement of these in each study, with fewer questions in the other studies leading to under-reporting of sexual IPV.

The SEM demonstrated two pathways between experience of occupation-related violence and IPV experience, one via increased gender inequitable attitudes and the other through depressive symptoms and quarrelling with their husband. Occupation-related event experience was seen to covary with the indicator of poverty, which were both related to IPV through the same paths. The analysis showed that poorer women bore the brunt of occupation-related violence, and this resulted in greater impoverishment of women and their families.

The first pathway from occupation-related events, and poverty, to gender inequitable attitudes and then IPV experience has been seen in previous quantitative studies (Gibbs et al., 2018; Jewkes et al., 2017a; Jewkes et al., 2018). Women who hold more gender inequitable attitudes may accept more conservative male partners, and these men are more likely to be violent, additionally women who are more accepting of male power may be less willing to contest this. The relationship between experience of occupation-related events and holding more gender inequitable attitudes could be for a number of reasons. These include, during specific moments of conflict young girls and young women (and boys and young men) are stopped from seeking education to reduce their vulnerability to conflict related events, or because schools are destroyed (Justino, 2010), and are thus exposed to less diverse ideas. Indeed, research from the oPT has suggested that many Palestinians, because of concerns about occupation-related violence, are willing to withdraw their children from school, and

stop women working (Said et al., 2018). Other research has suggested that ongoing experiences of conflict normalise the use of violence in everyday relationships, including intimate ones (Horn et al., 2014), and exposure to conflict-related events may normalise violence in everyday social relationships. Indeed the measure of gender attitudes used included the acceptability of violence in intimate relationships. More broadly, the level of conflict-related violence cannot be separated from the conflicts' wider impact on poverty, education, and social systems, which are also related to the political regimes governing different Palestinian communities, which also shape the context for IPV. These hypotheses about the ways in which experiences of conflict-related violence impact on gender attitudes require further testing.

The second pathway was linked to the impact of occupation-related violence on women's depressive symptoms and increased quarrelling. Prior quantitative research has similarly demonstrated how women's depressive symptoms increase their experience of IPV (Devries et al., 2013), and experiences of conflict-related violence increases poor mental health (Kinyanda et al., 2016; Steel et al., 2009). Studies emphasise that the mental health impacts of war-related trauma continue for many years after conflict has ended (Silove et al., 2014). Qualitative research has also emphasised the importance of generalised insecurity driven by war and conflict, and how this further exacerbates depressive symptoms and anxiety (Cardoso et al., 2016; Guruge et al., 2017). While individual and collective experiences of occupation-related violence were not associated with poverty at the individual level, the overarching impact of the occupation on Palestinians, in terms of limiting movement, trade and economic development (Said et al., 2018) suggests a broader association between the occupation and poverty.

Severity of depressive symptoms was strongly associated with experiencing events linked to the occupation. Previous research has extensively described these associations in samples of adults, adolescents and children in Palestine (Batniji et al., 2009; Thabet et al., 2008). An important argument has been made that narrow clinical approaches to poor mental health in situations of ongoing conflict, such as Palestine, over emphasise individualised understandings of poor mental health at the expense of understanding the impact of continuous and widespread insecurity on people's sense of self and wellbeing (Giacaman et al., 2011). In our sample, this was evident with age, and residence type (refugee camp) descriptively associated with being in the highest conflict-related event class. Understanding how the impact of ongoing experience of conflict-related violence, and intersecting factors such as lack of rootedness, are important in understanding these associations.

This study has a number of limitations. We only assessed a small number of indicator-types of conflict-related events experienced by women and did not use a full, validated scale (e.g. Gaza war traumas scale (Thabet et al., 2008)), and thus did not capture their full burden of occupation-related violence, such as mobility restrictions and having seen or heard specific military events. We also asked about lifetime exposure to occupation-related events and these experiences could have been a while ago and thus not connected directly to the outcomes. In addition we asked about experiences to women's 'partner, or family members', and as such we cannot be sure who experienced a number of events. Despite these limitations, which should attenuate associations, the associations remained strong. Interviews were face-to-face, which potentially reduces willingness to report IPV, however our prevalence of past-year IPV was comparable to previous studies, and sexual IPV was much higher, suggesting this was not an issue. We only assessed depressive symptoms through a screening tool and thus cannot provide clinical estimates of depression, nor the wider mental health impacts of occupation-related events women experienced. Our measures for poverty were two, very simple indicators, and may not have adequately captured variation in wealth. In addition, our scale for individual gender attitudes performed poorly, and as such, future studies should strengthen measures to capture gender equitable attitudes in this population. The study was cross-sectional and therefore we cannot be sure of the temporal sequence of exposures, but it seems most likely that most conflict-related events were prior to the past year. There are also issues with the assumption, particularly in the SEM, that depressive symptoms were an outcome of conflict-related trauma, while we recognise they themselves are also an outcome of experience of

IPV (Devries et al., 2013). Future longitudinal research should address this. Thus there is a clear bidirectional relationship we could not fully address. In addition the sample was relatively small, but was representative of the population. Finally, we did not consider the impact of conflict-related events on men's mental health, gender attitudes and perpetration of IPV and thus some of our assumptions about the pathways through which these operate cannot be clearly substantiated.

In this study, we demonstrated that among a representative sample of women living in the oPT, there were high levels of occupation-related violence experiences, both personal experiences, and within their families, and these were associated with increased depressive symptoms and also with experiencing IPV in the past year. Further, we showed how greater conflict-related experiences were associated with age, and living in a refugee camp, suggesting a cumulative exposure to events, and thus impact, over time. We also showed that the impact of occupation-related events on IPV experience was through increased poor mental health and quarrelling, and increased gender inequitable attitudes. As others have suggested, occupation-related violence and gender inequalities are mutually reinforcing experiences for women (Said et al., 2018). We did not, however, assess the potential ways in which Palestinians themselves are responding and mitigating these impacts through collective and family solidarity. Addressing IPV in the oPT requires recognition of how the cumulative impacts of long-term occupation, and specific experiences of occupation-related events, impact on women's, and families', mental health, and the importance of addressing these as well as gender inequitable attitudes, if the prevention of IPV is to be achieved.

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