I See so I Feel: Coping With Workplace Violence Among Victims and Witnesses

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Abstract

BACKGROUND: Workplace violence is a serious concern for workers' mental health and well-being in high risk work sectors. **OBJECTIVE:** This study examined victims' and witnesses' experiences after exposure to workplace violence, and the types of helps they used to cope with the violent event. **METHODS:** Workers (n = 211) from five different work sectors participated in our study. Multiple mediation analysis was used to investigate the indirect effects through psychological and work consequences on victims' vs. witnesses' differential likelihood of using formal, paraformal and informal helping. **RESULTS:** Results showed that workplace violence has detrimental effects on both victims and witnesses, with direct victims were more negatively affected psychologically and at work than witnesses. The indirect effect through psychological difficulty after experiencing workplace violence was significant in predicting formal helping. The indirect effect through reduced work functioning in predicting paraformal helping was also significant. No significant indirect effect was found in predicting informal helping. **CONCLUSIONS:** Both victims and witnesses used multiple types of helping to cope with the violent event. This study has practical implications on management and clinical practices for better organizations of resources in helping victims and witnesses to cope with workplace violence.

Keywords: Workplace aggression, Workplace violence, Psychological consequences, Work functioning, Coping

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"Going Postal" is an American slang for describing someone who is going mad and getting extremely angry, often in the workplace environment. It is a reference to the massive workplace shooting incident in the United States Postal Services in 1986. Since then, workplace violence has been associated with images of angry employees (or formal employees) lashing out and shooting supervisors and co-workers. However, most incidents of workplace violence are not "inside jobs" [1]. Rather, the most prevalent perpetrators of workplace violence are from outside of the organization, such as clients/visitors, patients or any other persons for whom an organization provides services [2, 3, 4]. Indeed, previous research shows that more than half of violence directed at employees at work are committed by outsiders [5, 6]. Furthermore, the number of witnesses to workplace violence may far outnumber direct victims. From a clinical perspective, witnessing a traumatic event is considered a potential trigger for developing symptoms of post-traumatic-stress-disorder (PTSD) [7]. Despite the alarming psychological effects of workplace violence [8], little research has examined witnesses' experiences after exposure to workplace violence with a few exceptions [9, 10, 11]. Therefore, the goal of this paper is to investigate outsider-initiated workplace violence and its psychological and work consequences among not only victims but also witnesses, and we will also examine different types of helps used by direct victims and witnesses after the violent event.

Workplace aggression and workplace violence are often interchangeable in the literature. Some researchers argue that workplace violence is a distinct form of workplace aggression [2], such that all violent behaviours are aggressive but not all aggressive behaviours are violent. Workplace aggression includes verbal, nonverbal and physical violent acts, whereas workplace violence is usually more physical in nature. In order to fully inform our research on the current topic, we will draw on empirical evidence and conceptual models from both workplace aggression and workplace violence research to facilitate our understanding of this phenomena. For the purpose of this study, we defined workplace

violence "on the basis of type of offence (assaults or threats); what the victim was doing at the time of the incident (at work or working); and the relationship between victim and offender (domestic violence is excluded)" to guide our research [12, p. 3].

Consequences of Workplace Violence

Workplace violence has multiple consequences on both organizations and individuals [8]. Barling et al. argue that workplace aggression is a stressor at the workplace that relates to a range of physical, psychological and behavioural strains [13]. For instance, incidents of nonfatal assaults at the workplace can result in various types of physical injuries, ranging from bruising to concussions. [8, 12]. Psychological consequences include anger, fear, anxiety, stress, frustration [14, 15, 16], and symptoms of post-traumatic-stress-disorder [17, 18, 19]. Moreover, reduced work functioning, as a behavioural consequence related to workplace violence [17, 20], is viewed as employees' productivity and performance at work given a certain state of health [21]. It can be quantified by self-reported loss of productivity and experiences of limitations at work [21]. Both quantitative [17] and qualitative [15] studies show that workplace violence initiated by patients/visitors is significantly related to not only psychological difficulty but also decreased work productivity.

Witnessing Workplace Violence

Workers not only experience workplace violence directly as victims, they may also experience it indirectly by witnessing or hearing about incidents of workplace violence. Witnesses of violent acts at work might experience similar psychological and behavioural outcomes as direct victims [22, 23, 24]. Our research on witnesses' experiences after exposure to workplace violence is guided by Figley's [25, 26] Trauma Transmission Model. This theoretical model is initially developed for secondary traumatization for caregivers (e.g., psychotherapists, family members) of trauma victims. In this study, we apply this model to examine witnesses' experiences after being exposed to workplace violence. According to the model, witnesses may be "swept up" by the emotions of the victims, which then lead to

developing similar psychological difficulty as the victims. This process is operated partially through the witness's identification with the victim in terms of interpersonal relationships (e.g., co-workers), as well as through witness's empathetic ability to notice and feel the suffering of others via emotional contagion [26, 27]. Figley argued that people around the victim, such as witnesses, may indeed experience similar emotional responses as the victim due to their effort in generating an understanding of the victim and the traumatic event.

A study by Eriksson et al. examined 195 returned humanitarian staff workers who had been directly and/or indirectly exposed to life-threatening events during their deployment [10]. Results showed that both personal exposure and vicarious exposure to life-threatening events positively predicted PTSD severity six months after their return. In fact, about 10% of the participants met the full diagnostic criteria for PTSD, 19% reported experiencing partial PTSD and more than half experienced moderate problems for at least one PTSD symptom cluster. Similarly, Dupré et al. used structural equation modeling to examine the negative effects of direct vs. vicarious experiences of workplace aggression [9]. Both victims and witnesses experienced mental and physical health issues, as well as turnover intentions after exposure, with stronger effects for victims than for witnesses. In other words, both direct and vicarious experiences of workplace violence exert similar patterns of negative effects on workers' mental health and work outcomes, with direct victims experiencing stronger effects than witnesses [11].

Coping With Workplace Violence

When facing stressful or traumatic events, humans are motivated to use different strategies to cope with the threatening situations that are impinged upon them. Coping is generally referred to behaviours or responses that protect individuals from being harmed by problematic life events [28]. It can also serve to prevent, avoid and/or control emotional distress during times of duress. Barker et al. categorize different types of helps (i.e., formal, informal and paraformal) people use to cope with difficult situations [29]; formal helping

refers to the use of professional help from psychiatric services, psychological therapy, counseling and so on; informal helping on the other hand refers to help and support from ordinary people in everyday settings, such as support from friends, families and colleagues; paraformal helping refers to the use of help and support from individuals who had some specialized training or experiences in psychological helping, such as clergymen and family doctors [29]. This is a type of helping that lies between the formal and informal helping continuum.

Barker et al. posit that even though formal and informal helping are the two extremes on the helping continuum with paraformal helping at the middle, these three types of helping are not mutually exclusive [29]. Workers exposed to workplace violence are likely to use multiple types of helping to deal with their trauma [30, 31]. Historically, most research on coping had focused on formal and informal helping [32, 33, 34, 35], and neglected other types of helping, such as paraformal helping [36, 37]. The oversight of paraformal helping in the literature may indeed fail to account for personal resources and meaningful ways of coping used by victims vs. witnesses. To fill in this gap, the current study will examine the three types of helping used by victims and witnesses after encountering workplace violence.

Model and Hypothesis

According to previous research [9, 10], it was expected that both victims and witnesses would experience psychological difficulty and reduced work functioning after exposure, with victims showing more psychological difficulty and higher levels of reduced work functioning than witnesses (path a_1 and a_2 in Figure 1(a)). Both psychological difficulty and reduced work functioning were then hypothesized to positively predict the use of formal, informal and paraformal helping (path b_1 and b_2 in Figure 1(a)) [29, 30]. Furthermore, the mean differences on psychological difficulty and reduced work functioning experienced by victims vs. witnesses would be positively related to the odds of using formal, informal and paraformal helping. In other words, the indirect effects through psychological difficulty and

reduced work functioning would be significant to explain the differential likelihood of using different types of helping between victims and witnesses.

Insert [Figure 1]

Materials and Method

Data

This study was part of a bigger project examining workplace aggression and violence among 2889 French-speaking workers from five different work sectors (i.e., police officers, administrative workers in civil services, bus drivers, healthcare staffs and social workers) in the province of Québec in Canada. These sectors are within the justice, healthcare and social services industries which are prone to workplace violence, with police officers having the highest risk [6]. Participants were contacted by e-mail or on-site to complete an online survey between January 2011 and October 2012 and their participation was completely voluntary. Participants were informed that they could withdraw from the study at any time without any penalty or harm. The survey was anonymous and the information they provided was confidential. This study was approved by the ethics committee of the Institut universitaire en santé mentale de Montréal.

Since we are interested in outsider-initiated workplace violence, only a subset of participants who indicated they had encountered outsider-initiated workplace violence in the past 12 months were included in our dataset for analysis ($N = 326$). About 14.9% responses were missing in our dataset. Little's missing completely at random test[1], using age, sex and exposure status (victims vs. witnesses) as covariates, was not significant which indicated that the data were missing completely at random, $\chi^2(152) = 162.86, p = .26$. After deleting cases with missing values, the available worker sample size was $n = 211$ (female = 118).

[1]This test was conducted using the "mcartest" package in Stata v13.

Materials

The survey was organized in three parts. The first part included socio-demographic questions regarding participants' age, sex (coded as male = 0, female = 1), marital status (coded as single = 0, not single = 1), annual personal income, and work shifts (coded as night shift or over night shift = 0, day shift = 1). The risk of workplace violence according to work sector was also dichotomized as police officers = 1 and the other four sectors = 0. The second part of the survey contained questions regarding victimization and witnessing experiences of six forms of serious workplace violence – physical violence, robbery, armed robbery, sexual touching, sexual assaults and death threats. Participants were asked to indicate the frequency of each of the six violent acts they encountered as a victim or a witness in the past 12 months. They were then asked to indicate the one most disturbing workplace violence they have encountered *either* as a victim *or* as a witness in the past 12 months. The third part of the survey included questions regarding the consequences (i.e., psychological and work) of being exposed to the one most disturbing workplace violent event and what kind of strategies (subdivided as formal, informal and paraformal) participants used to regain their normal levels of functioning after exposure.

Exposure to workplace violence. General exposure to workplace violence was measured by summing the frequencies of the six forms of workplace violence as a victim or a witness in the past 12 months. The *exposure status* for the most disturbing event was coded as victim = 1 and witness = 0. The elapsed time of the most disturbing workplace violent event was also recorded by months in the second part of the survey.

Consequences of workplace violence. Psychological difficulty was measured by summing nine symptoms (coded as presence = 1, absence = 0): flashbacks, nightmares, avoidance, loss of interest in important or interesting activities, sleeping problems, hypervigilance, concentration problems, irritability and guilt. More symptoms being present indicated higher levels of psychological difficulty after exposure to workplace violence. Crobach's alpha = .88 for the full sample was obtained for this scale (alpha = .74 for the

victims and alpha = .73 for the witnesses).

Work related consequence – reduced work functioning – was measured by asking participants to indicate their percentage of reduction in work functioning from 0% to 100%, after taking into account of their usual levels of work functioning prior to the occurrence of the most disturbing workplace violent event. Higher values indicated more reductions in work functioning. Whether physical injuries were present as a result of the most disturbing event was coded as presence of physical injuries = 1, absence of physical injuries = 0.

Types of Helping. Three types of helping were measured according to the categories identified in Barker et al.'s paper [29]. The use of formal helping was quantified as a dichotomous (yes/no) variable by participants' indications of consulting a psychologist or psychiatrist, and/or using services from employee assistant programs (EPA). The use of informal helping was quantified as a dichotomous (yes/no) variable by participants' indications of talking about the most violent event to family, friends and/or colleagues. Similarly, the use of paraformal helping was also quantified as a dichotomous (yes/no) variable by participants' indications of consulting a general physician and/or seeking services from the union. "Yes" was coded as 1 and "No" was coded as 0 for using different types of helping.

Analysis

In order to test whether the mean differences between victims and witnesses on psychological difficulty and reduced work functioning were related to the likelihood of using different types of helping, three sets of multiple mediation models were used following the procedures recommended by Hayes et al. [38]. Each type of helping (i.e., formal, informal and paraformal) will be analyzed separately. The indirect effect in a multiple mediation model with a dichotomous independent variable is interpreted as the amount by which two groups that differ by one unit on the dichotomous independent variable are estimated to differ on the outcome variable as a result of the effect of the independent variable on the

mediator which in turn affects the outcome variable. Put it differently, an indirect effect represents the mean differences between the two groups on the outcome variable resulting from the indirect pathway [38]. In our case, we set out to test the effect of workplace violence exposure status (i.e., victim vs. witness) on the likelihood of using three different types of helping through the influences of psychological difficulty and reduced work functioning, controlling for socio-demographic variables (i.e., sex, age, marital status, income, working as day shift or not, time elapsed since the event, and work sector), physical injuries and general exposure to workplace violence in the past 12 months.

Specifically, workplace violence exposure status (i.e., victim vs. witness) was the dichotomous independent variable and the outcome variables were formal, informal and paraformal helping. The two mediators – psychological difficulty and reduced work functioning – were entered at the same time in the multiple mediation analysis for each type of helping. The relation between exposure status and types of helping after accounting for all other effects in the model is the direct effect (denoted as c') in multiple mediation analysis. The regression analysis between exposure status and the mediator was denoted as path a, whereas the regression analysis between the mediator and the outcome variable was denoted as path b (see Figure 1(a)). Since the two mediators were continuous variables and the three outcome variables were dichotomous variables, the estimates for a paths in each multiple mediation model were OLS regression based coefficients whereas the b paths were logistic regression based coefficients. The p-value was set at .01 in this paper to avoid the inflation of Type I error due to repeated testing of multiple mediation models. All analyses were conducted using SPSS v20 unless otherwise specified.

The multiple mediation analysese were conducted using the open source macro PROCESS in SPSS[2] [39]. The indirect effects were calculated as the product of $a * b$ in this macro and the confidence intervals were based on 10,000 bootstrap samples [40]. In order to adjust for the bias that may arise in the bootstrap distributions, bias-corrected bootstrap

[2]This macro is available at http://www.processmacro.org/.

confidence intervals were used in all multiple mediation analyses.

Results

Table 1 presents descriptive statistics between victims and witnesses, and their differences on all measures in this study. Table 2 presents the bivariate correlations among all variables for victims and witnesses separately. Multicollinearity tests were conducted for victims and witnesses separately for all independent variables using the "collin" package in Stata v13. The variance inflation factor (VIF) ranged between 1.07 and 1.47 with an average of 1.27 for victims; and the VIF ranged between 1.08 and 2.02 with an average of 1.37 for witnesses. These values are much lower than the threshold of 10, indicating our data do not have multicollinearity problems [41]. In addition, we can not rule out the possibility of common method variance bias in this study because all measures were from the same source. Harman's single factor test [42] indicated that the common factor did not account for the majority of the variance (only 19.2%), suggesting common method variance bias in this study to be small.

Insert [Table 1 and Table 2]

Formal Helping

The multiple mediation analysis for formal helping indicated that the direct effect of exposure status (i.e., victim vs. witness) was marginally significant for the usage of formal helping, $c' = 1.59$, $SE = .63$, $p = .01$, bias-corrected 99% $CI[-.02, 3.21]$, with victims reporting higher percentage in using formal helping (see Table 3). Victims and witnesses significantly differed on their usage of formal helping as a result of the indirect effect through psychological difficulty (point estimate: .73, $SE = .38$, bias-corrected 99% $CI[.06, 1.71]$; Figure 1(b)). Victims reported higher levels of psychological difficulty than witnesses after being exposed to workplace violence ($b = 1.23$, $p < .001$) and the higher levels of psychological difficulty were then related to a higher likelihood of using formal helping

($b = .59$, $p < .001$). In other words, there were significant mean differences between victims and witnesses on their usage of formal helping and these group differences were transmitted through psychological difficulty. Similarly, victims reported greater reduction in work functioning than witnesses ($b = 1.59$, $p = .002$), and the reduced work functioning was positively related to using formal helping ($b = .20$, $p = .006$). However, the mediation analysis showed that the indirect effect through reduced work functioning was not significant in this model (point estimate: .31, $SE = .21$, bias-corrected 99% $CI[-.11, .97]$). Among the covariates, only general exposure to workplace violence in the past 12 months was a significant predictor for psychological difficulty ($b = .03$, $p = .001$). All other coefficients for each type of helping were presented in Table 3.

Informal Helping

The same multiple mediation analysis was conducted for predicting informal helping, but a different pattern of results emerged comparing to formal helping. The direct effect of exposure status was not significant for predicting the usage of informal helping, $c' = .39$, $SE = .53$, $p = .46$, bias-corrected 99% $CI[-.98, 1.76]$. The indirect effects through psychological difficulty (point estimate: .46, $SE = .40$, bias-corrected 99% $CI[-.09, 2.02]$) and reduced work functioning (point estimate: .05, $SE = .26$, bias-corrected 99% $CI[-.47, 1.22]$) were not significant in this model (Figure 1(c)). There was no significant mean differences on the usage of informal helping between victims and witnesses. Neither psychological difficulty nor reduced work functioning was related to informal helping (see Table 3). No covariate was significant in predicting informal helping.

Paraformal Helping

The last set of multiple mediation analysis was conducted for paraformal helping. The results of the analysis showed that there was no significant direct effect on paraformal helping between victims and witnesses, $c' = .70$, $SE = .43$, $p = .10$, bias-corrected 99% $CI[-.40, 1.80]$. The indirect effect of exposure status through psychological difficulty was

not significant (point estimate: .31, $SE = .18$, bias-corrected 99% $CI[-.02, .91]$). Nonetheless, psychological difficulty was significantly related to a higher likelihood of using paraformal helping ($b = .25$, $p = .005$). The indirect effect for reduced work functioning was significant in predicting paraformal helping (point estimate: .33, $SE = .18$, bias-corrected 99% $CI[.03, .94]$; Figure 1(d)). Victims reported more reduction in work functioning than witnesses ($b = 1.59$, $p = .002$), which was then associated with higher likelihood of using paraformal helping ($b = .21$, $p = .002$). Among all the covariates, having physical injuries was the only significant covariate predicting paraformal helping ($b = 1.10$, $p = .007$). No other covariate was significant in this model.

Insert [Table 3]

Discussion

This study examined victims' vs. witnesses' experiences and their usage of different types of helping after encountering violent events at work. Our overall results indicate that workplace violence has detrimental effects on both victims and witnesses. Direct victims are more negatively affected psychologically and at work after exposure, compared to witnesses. As predicted, these mean differences on psychological difficulty and work functioning reduction between victims and witnesses significantly predicted the usage of different types of helping.

Consistent with previous research [9, 10, 11, 43] and our hypothesis, victims experienced greater psychological and work consequences after exposure to workplace violence than witnesses. Victims have direct contact with the perpetrator while witnesses experience the violent event indirectly and vicariously by identifying with the victim and/or by repeated exposure to the environment where the violence took place [26, 27, 43]. This is particularly pertinent in the case of workplace violence. Victims might be the co-workers or supervisors of the witnesses. According to Figley's Trauma Transmission Model [26, 27], both the relationship with the victim and the workplace serve as vivid reminders of the violent

event on a daily basis for the witness. Even though direct exposure of workplace violence would create greater personal meaning for victims than indirect exposure of the same event for witnesses, one does not need to be directly victimized to experience the negative impacts of violence [9, 44]. Therefore, both victims and witnesses would experience similar patterns of negative psychological and work outcomes, with stronger effects for victims [1, 11].

Furthermore, our results on the usage of formal, paraformal and informal helping partially supported our predictions. When faced with stressful and traumatic life situations, such as serious workplace violence, individuals might use different types of strategies and resources to maintain psychosocial adaptation [30]. Since formal helping is closely related to the traditional sense of psychological helping by psychiatrists and/or psychotherapists [29], it is not surprising that victims who experienced greater psychological difficulty are more likely than witnesses to use formal helping in order to try to regain psychological well-being. Similarly, victims who experienced greater work functioning reduction would also be more likely than witnesses to use paraprofessionals' (e.g., union services and general physicians) services to file complaints, process sick leave, and obtain referrals for psychiatric and counselling services, etc. In fact, victims, who had direct contact with the perpetrators resulting in physical injuries, would be treated by physicians and therefore might have greater access to obtaining referrals to receive psychological services through physicians. However, this may not be the case for witnesses due to lack of physical injuries.

Different from our hypothesis, the indirect effects through psychological difficulty and reduced work functioning did not explain the group differences between victims and witnesses on their likelihood of using informal helping. The majority of our victims (90.7%) and witnesses (86.5%) indicated they had used informal helping to cope after the violent event. In this case, we might be encountering a ceiling effect where the outcome measure demonstrated almost no variation at the upper end of its range due to a large number of participants using informal helping as a way to cope. This result does not imply that victims and witnesses do not use informal helping, but instead it shows victims and witnesses both

use informal helping to a similar extent. In fact, informal helping was used the most comparing to other types of helping (see Table 1). Specifically, victims used informal helping three times more than formal helping, and about two times more than paraformal helping. Witnesses used informal helping 14 times more than formal helping, and about 6 times more than paraformal helping. This is consistent with previous research that informal helping from family and friends is the primary source of support individuals used to cope with stress-related issues, whereas formal helping is used only after informal helping is consulted [36, 37]. According to Table 1, informal helping plays a very important role for workers to cope with outsider-initiated workplace violence, particularly for witnesses when other types of helping may not be accessible. In conclusion, supporting the Trauma Transmission Model [25, 26], both victims and witnesses were negatively impacted by workplace violence, with victims reported higher psychological and work difficulties after [9, 13]. These psychological and work difficulties also explained victims' vs. witnesses' differential use of formal, informal and paraformal helping.

Limitations and Future Directions

The present study has some limitations that should be taken into consideration while interpreting the results. The analysis in this study can not imply causality due to its cross-sectional design. However, it is unlikely that psychological difficulty, reduced work functioning and the three types of helping could cause participants' exposure status (i.e., being a victim vs. a witness). Furthermore, in the questionnaire, participants were first asked about the most disturbing workplace violence incident they have encountered in the past 12 months. They were then asked to report their psychological and work difficulty, and to indicate what types of help they used to regain normal levels of functioning following the incident. Although the structure of the questionnaire followed a logical flow that was congruent with our proposed model (Figure 1(a)), it is necessary for future studies to use longitudinal designs to scrutinize the causal relation between psychological and work

consequences of workplace violence on different types of helping.

Secondly, the measure for psychological difficulty in this study resembles the measure for symptoms of PTSD, but it is not a standardized measure for PTSD. Previous studies showed that workplace violence could lead to the development of PTSD symptoms for both victims and witnesses [10, 17, 18, 45]. This is an important mental health issue in the workforce that warrants further investigation using well validated and standardized measures, such as the Penn Inventory for posttraumatic stress disorder [46], to capture the severity and duration of the psychological consequences of workplace violence.

This study focused on the differential effects of workplace violence according to exposure status, but neglected potential sex differences on the consequences of workplace violence. Some studies observed female gender as a risk factor for experiencing various psychological difficulties after a traumatic event [18, 47, 48], but other studies had found little or no evidence of gender differences [49, 50]. Our results, using sex as a covariate, supported Hyde's [51] hypothesis that males and females react very similarly in most psychological measures. Specifically, there was no significant sex differences on psychological difficulty and reduced work functioning, nor were there differences on formal, paraformal or informal helping usage in our study. Hyde argues that most of the sex differences observed in psychological measures are very sensitive to contextual factors. Thus, it might prove fruitful for future studies to take into account working conditions, such as human resources practices for zero-tolerance of workplace violence, as well as organizational and occupational culture [1, 18], in order to better unpack potential sex differences on the negative consequences of workplace violence.

Conclusions and Implications

Undeterred by the limitations, the present study provided strong empirical evidence for the detrimental outcomes of indirect exposure to workplace violence, which has great implications on management and clinical practices. Our study shows that violent incidents

at work initiated by outsiders have extremely adverse effects on both victims and witnesses. With informal helping being used the most to cope with the aftermath of workplace violence, clinicians should not overlook the importance of social support from patients'/clients' family, friends and colleagues. Family therapy or incident debriefing for family members and friends will help to create better social support after the violent event.

While witnesses may not be aware or offered formal helping to the same extent as direct victims, it is important for organizations to create a safe and open environment for witnesses to use the same services as victims in order to overcome the psychological and work difficulties witnesses may experience. In addition, even though it is a general consensus in the literature that workers use multiple ways to cope with workplace violence, empirical evidence for victims and witnesses using paraformal helping is lacking. This study shows that paraformal helping is indeed used by both victims and witnesses, and it may have a bridging function to direct workers to use other services, such as formal helping. Hence, it is imperative for human resources departments, union workers or general physicians to understand workplace violence affects everybody, not just direct victims, so that they may provide or direct appropriate services without delay. Last but not least, the categorization of formal, informal and paraformal helping could serve as a basic framework for organizations and healthcare institutes to better adjust and integrate different resources to facilitate victims' and witnesses' paths to recovery.

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Table 1
Descriptive Statistics

	Victims ($n = 107$)		Witnesses ($n = 104$)		
Variables	Mean	SD	Mean	SD	Differences†
Consequences of workplace violence					
1 Psychological difficulty	3.98	2.59	2.68	2.30	−1.30*
2 Work functioning	4.42	4.04	2.86	2.79	−1.57*
Types of Helping					
3 Formal helping (%)	29.9	–	5.8	–	24.1 *
4 Informal helping (%)	90.7	–	86.5	–	4.2
5 Paraformal helping (%)	39.3	–	14.4	–	24.9 *
Covariates					
6 Sex	51.4	–	60.6	–	9.2
7 Age	38.49	11.10	39.87	11.48	1.38
8 Marital status (%)	66.4	–	73.1	–	6.7
9 Income	48 925.23	13 229.26	53 365.38	12 855.48	−4440.15*
10 Day Shift (%)	41.1	–	51.9	–	10.8
11 Time Elapse	5.90	3.92	5.11	3.57	−.79
12 High Risk Sector (%)	58.9	–	69.2	–	10.3
13 Physical Injuries (%)	50.5	–	26.0	–	24.5 *
14 General Exposure	40.04	26.01	33.59	24.15	−6.45

Note. *$p < 0.01$. † T-tests were used for continuous variables and Z-tests were used for categorical variables to compare group differences.

Table 2
Correlation Among All Variables

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1	–	.48	.29	.17	.28	-.02	.02	-.06	.08	-.08	-.15	.05	.09	.33
2	.49	–	.50	.11	.45	-.02	.06	-.04	.09	-.02	-.22	.14	.16	.06
3	.58	.40	–	-.02	.60	-.05	-.02	.06	.06	.07	-.07	.08	.32	-.04
4	.29	.13	.14	–	.08	.20	.18	.08	.06	.07	-.04	.10	-.09	.09
5	.45	.36	.44	.13	–	-.12	.14	.00	.07	.07	-.03	-.02	.19	-.02
6	.15	.01	.10	.14	.13	–	-.04	-.09	-.03	.17	-.07	.10	-.15	-.18
7	.16	.19	.10	-.03	.02	-.16	–	.07	.36	.34	.08	.24	.07	-.29
8	.03	.15	-.01	-.16	.05	-.10	.13	–	.08	.15	.06	.02	-.04	-.18
9	-.07	.09	-.13	-.08	-.25	-.22	.19	.14	–	.13	-.09	.06	-.06	-.04
10	.14	.02	.04	.14	-.17	.24	.08	-.05	-.02	–	-.06	.11	-.05	-.54
11	.03	.12	-.02	.01	-.11	.13	.05	-.08	.15	.16	–	.04	.03	.04
12	.18	-.02	.09	.19	.17	.33	.11	-.15	-.34	.24	-.15	–	.06	.01
13	.11	.03	.04	.07	.30	.12	-.06	.01	-.13	-.16	-.11	.12	–	.03
14	.07	.02	-.04	.03	.28	-.14	-.28	-.04	-.11	-.22	-.26	.04	.27	–

Note. Upper diagonal coefficients are for witnesses and lower diagonal coefficients are for victims. $r < -.20$ or $> .20$ are significant at $p < .05$. The variable numbers correspond to the variable numbers in Table 1.

Table 3
Path Coefficients

Coefficients for a Paths

	Psychological difficulty		Reduced Work Functioning	
Variables	Coefficient	SE	Coefficient	SE
Constant	.02	1.13	−1.67	1.65
Exposure Status	1.23**	.35	1.59*	.51
Sex	.53	.36	.26	.53
Age	.34	.17	.41	.25
Marital status	.06	.37	.52	.53
Income	.00	.14	.18	.20
High Risk Sector	.23	.38	.14	.55
Day Shift	.39	.37	−.06	.54
Time Elapse	−.02	.05	−.01	.07
Physical Injuries	.31	.36	.48	.52
General Exposure	.03*	.01	.01	.01

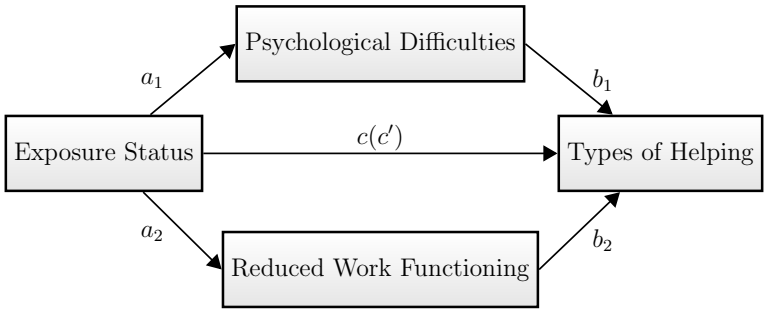
Coefficients for b Paths

	Formal			Informal			Paraformal		
	Coeff	SE	ORs	Coeff	SE	ORs	Coeff	SE	ORs
Constant	−2.84	1.84	–	−1.96	1.68	–	−3.04	1.47	–
Psych difficulty	.59**	.13	1.81	.37	.15	1.45	.25*	.09	1.29
Work Functioning	.20*	.07	1.22	.03	.11	1.03	.21*	.07	1.23
Sex	−.22	.55	.80	1.24	.54	3.47	.26	.43	1.30
Age	−.16	.24	.85	.34	.26	1.40	.24	.20	1.27
Marital status	−.43	.54	.65	−.25	.55	.78	.20	.42	1.22
Income	−.25	.20	.78	.06	.20	1.06	−.28	.16	.76
High Risk Sector	.10	.59	1.11	.44	.52	1.55	.07	.46	1.70
Day Shift	.03	.53	1.03	.79	.60	2.20	−.34	.44	.70
Time Elapse	−.05	.07	.95	.002	.06	1.00	−.02	.05	.98
Physical Injuries	.60	.51	1.82	−.47	.53	.62	1.10*	.41	3.00
General Exposure	−.03	.01	.97	.02	.01	1.02	.01	.01	1.01

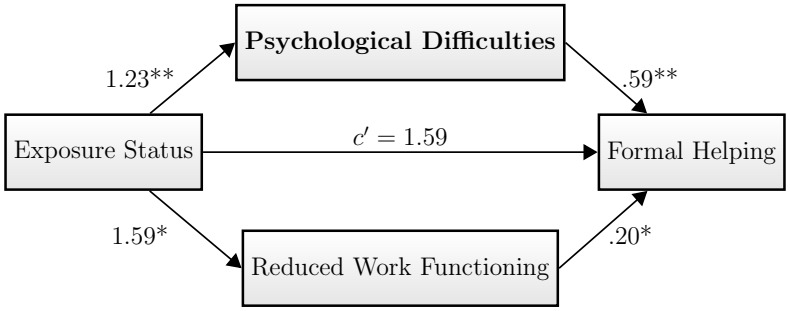
Coefficients for c′ Paths

	Formal			Informal			Paraformal		
	Coeff	SE	ORs	Coeff	SE	ORs	Coeff	SE	ORs
Exposure Status	1.59	.63	4.90	.39	.53	1.48	.70	.43	2.01

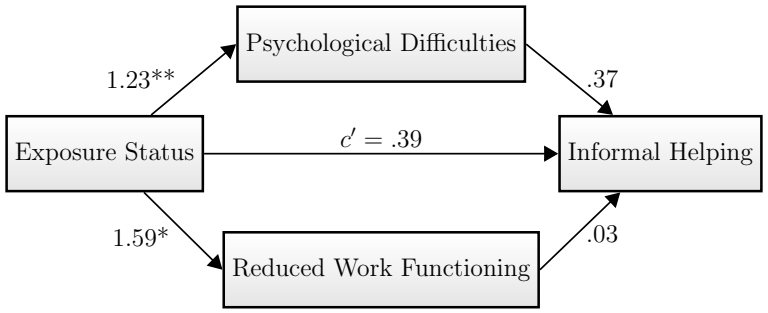
Note. $^*p < 0.01$, $^{**}p < 0.001$. Coeff = Coefficients, Psych difficulty = Psychological difficulty, ORs = Odds Ratios.



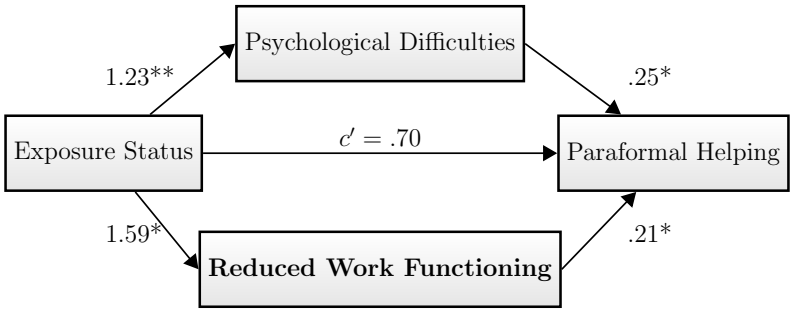
(a) Conceptual Multiple Mediation Model.



(b) Indirect effect was significant for psychological difficulty only.



(c) No indirect effect was significant.



(d) Indirect effects were significant for both psychological difficulty and reduced work functioning.

Figure 1. Multiple Mediation Models. Exposure status coded as victim = 1 and witness = 0. Types of Helps include formal, informal or paraformal helping.