



Workplace aggression, psychological distress, and job satisfaction among Palestinian nurses: A cross-sectional study



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ABSTRACT

Background: Nurses can be exposed to aggressive behavior from patients, patient's relatives, colleagues and visitors.

Purpose: To determine the prevalence of workplace aggression among Palestinian nurses in the Hebron district and to examine cross-sectional associations between exposure to workplace aggression and the occurrence of psychological distress and job satisfaction.

Methods: Of 372 nurses eligible for the study, 343 were included (response rate of 92.2%). The sample comprised 62% females and 38% males. The participants responded to questions about their socio-demographic status, workplace aggression (WHO questionnaires), psychological distress (General Health Questionnaire, GHQ-30), and job satisfaction (Generic Job Satisfaction Scale).

Results: Ninety-three (27.1%) of the respondents reported exposure to workplace aggression of any kind. Seventeen (5%) reported exposure to physical aggression, 83 (24.2%) reported exposure to verbal aggression, and 25 (7.3%) reported exposure to bullying. The patients and the patients' relatives were the main sources of physical and verbal aggression, whereas colleagues were the main source of bullying. Males reported a higher prevalence of bullying than females. Younger nurses reported a higher prevalence of exposure to physical aggression, verbal aggression and bullying. Verbal aggression was associated with more psychological distress. Bullying was associated with lower job satisfaction.

Conclusions: More than a quarter of the nurses reported that they had been subject to some sort of aggression at the workplace. Verbal aggression was associated with higher psychological distress. Workplace bullying was associated with lower job satisfaction. Increased awareness and preventive measures to address this problem among health care workers are warranted.

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1. Introduction

The work of nurses involves daily interaction with patients and their relatives as well as with supervisors, managers, and medical staff. Therefore, it is not surprising that nurses are at risk of experiencing interpersonal aggression, such as physical assaults, verbal abuse and bullying, at the workplace. Workplace aggression, defined here as acts of psychological mistreatment, physical assault, or threatening behavior that occur in a work setting and that cause physical or emotional

harm (Gacki-Smith et al., 2009), is a prevalent problem that affects the health and productivity of many health care workers (Kwok et al., 2006). In addition to the direct physical, emotional and psychological impact on nurses, workplace aggression may have direct and indirect negative consequences for perpetrators, observers, and the organization (Chapman, Perry, Styles, & Combs, 2009). While there has been an increasing interest in nurses' exposure to workplace aggression during the last decade, the majority of studies are based on samples from Europe and North America (Edward, Ousey, Warelow, & Lui, 2014; Needham, Abderhalden, Halfens, Fischer, & Dassen, 2005). Hence, little is known about the prevalence of aggression or how workplace aggression is related to health and well-being among nurses in other geographical regions. To add to the current knowledge about workplace aggression in the health care sector, this study will 1) determine the prevalence of exposure to workplace aggression and 2) examine whether exposure to workplace aggression is related to psychological distress

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and job satisfaction among Palestinian nurses in the Hebron district. The study will be restricted to reports of workplace aggression from the target perspective.

1.1. Background: workplace aggression and its relationships with health and well-being

Aggression is not a singular or unitary phenomenon. Rather, it represents a collection of behaviors or strategies that manifest themselves under highly specific contextual conditions (Buss & Shackelford, 1997). According to Buss (1961), aggressive behavior can be classified in terms of the following three different dichotomies: verbal–physical, direct–indirect, and active–passive. Verbal forms of aggression involve harm on others through words rather than deeds, whereas physical forms of aggression involve overt actions. Direct forms of aggression are reflected through behaviors that are delivered directly to the victim, while indirect forms involve the actions of other agents or through assaults on persons or objects valued by the victim. Finally, active aggression produces harm through performing the behavior, while passive aggression delivers harm through withholding the behavior. Workplace bullying occurs when an employee is systematically exposed to aggression over a prolonged time period and he or she finds it difficult to defend him-/herself against this aggressive treatment (Einarsen & Nielsen, 2015).

Workplace aggression is a prevalent phenomenon around the globe. It has been estimated that 41.4% of American employees experience psychological aggression, whereas 6% experience physical aggression, at their workplace every year (Schat, Frone, & Kelloway, 2006). For workplace bullying, approximately 11% of workers perceive themselves as victims of bullying (Nielsen, Matthiesen, & Einarsen, 2010). Rates of workplace aggression varies between countries (Nielsen et al., 2010), and it has been estimated that Middle-Eastern countries, including Israel, Egypt, United Arab Emirates, Qatar, and Bahrain have relatively high levels of aggression at the workplace (van de Vliert, Einarsen, & Nielsen, 2013). Findings on prevalence indicate that aggression may be especially prevalent in health care. For instance, a study on aggression against nurses in 210 Canadian hospitals showed that 46% of the respondents had experienced one or more types of aggression in the last five shifts that they worked. The frequency varied by the type of aggression as follows: emotional abuse 38%, threat of assault 19%, physical assault 18%, verbal sexual harassment 7.6%, and sexual assault 0.6%. 70% of those exposed to workplace aggression indicated that they had not reported it (Duncan et al., 2001). In a study from Hong Kong, it was established that a large proportion of nurses experienced violence in their work environment and they reported the following: bullying 45%, physical 18%, verbal abuse 73%, and sexual harassment 12% (Kwok et al., 2006).

To our knowledge, there are only a handful of studies which have examined the occurrence and correlates of workplace aggression among nurses in the Middle East. Yet, the findings indicate that the majority of nurses in this region have experienced some form of aggression at the workplace. In an Egyptian study it was found that 69.5% of the nurses reported exposure to verbal aggression, whereas 9.3% reported physical aggression (Abbas, Fiala, Abdel Rahman, & Fahim, 2010). Regarding the person who is responsible for aggression, 62.8% of the aggressive events were conducted by patients, while 16.7% of events were conducted by the patients' relatives and 7.5% of events were conducted by colleagues. Similarly, findings from a study of Jordanian nurses indicated that 22% were exposed to physical aggression (AbuAlRub & Al-Asmar, 2011). Another study among Jordanian nurses and physicians reported that approximately 15% of the participants were exposed to physical aggression. The majority of the study participants were very dissatisfied with the way that administrators had dealt with the incidents (AbuAlRub & Al Khawaldeh, 2014). Exposure to aggression has been reported to be especially prevalent among health care personnel in Palestinian hospitals. For instance, a study of

Palestinian nurses and physicians published that 81% reported exposure to aggression. Of those exposed, 21% had experienced instances of physical aggression, while 60% were exposed to psychological aggression (Kitaneh & Hamdan, 2012). With respect to whether or not the aggression was reported to the hospital management, 56.3% of the respondents did not report the incident, 20.4% of them orally reported the incident to direct supervisors, and 19.2% reported the incident in writing. The findings showed that the main reasons for non-reporting were the lack of an incident reporting policy and management support, previous experience of no action taken, and fear of the consequences.

Workplace aggression has been related to health and well-being among those exposed. For instance, a substantial number of both cross-sectional and longitudinal studies show that exposure to aggression is significantly associated with job satisfaction and indicators of psychological and somatic health problems (for meta-analytic summaries, see Bowling & Beehr, 2006; Hershcovis, 2011; Nielsen, Magerøy, Gjerstad, & Einarsen, 2014). Consistent with this research, studies among nurses have found that on-the-job abuse is related to a variety of negative outcomes, including anger, fear, depression, anxiety, and job dissatisfaction (Arnetz & Arnetz, 2001; Sofield & Salmond, 2003). For instance, in a study of health care personnel in the US, job satisfaction was significantly correlated with exposure to aggressive behavior (Dougherty, Bolger, Preston, Jones, & Payne, 1992). Although physical aggression was more frequently reported, exposure to verbal aggression had the strongest association with job satisfaction. In a prospective study of the association between aggression and mental health problems among 1582 Norwegian nurses, it was established that exposure to psychological aggression in the form of bullying predicted a subsequent increase in symptoms of anxiety and fatigue (Reknes, Einarsen, et al., 2014; Reknes, Pallesen, et al., 2014). The relationship remained significant after adjusting for the baseline symptoms of anxiety and fatigue, age, gender, night work and job demands. Exposure to physical and psychological forms of workplace aggression among nurses is related to posttraumatic stress disorder symptomatology (Laschinger & Nosko, 2013; Walsh & Clarke, 2003).

The relationship between workplace aggression and subsequent health and well-being problems among nurses has been explained with Janoff-Bulman's (1992) "Cognitive Theory of Trauma" (Reknes, Einarsen, et al., 2014; Reknes, Pallesen, et al., 2014). Considering exposure to workplace aggression more as a traumatic event than a plain stressor, this theory emphasizes the following three fundamental cognitive assumptions that are held by most people and that are fundamental for good health and mental well-being: (1) the world as benevolent, (2) the world as meaningful and, (3) the self as worthy. To maintain one's mental health, adults need to perceive other people as generally good and friendly and to believe that things happen to particular people for a good reason. They also need to think of themselves as being in control of their own destiny and being worthy of the respect of others (Janoff-Bulman, 1992). Hence, following the cognitive theory of trauma, it is likely that victims of systematic psychological hostility from other human beings react with shock, fear, anxiety and depression, and may even alter their perceptions of their surroundings and future to one of threat, danger, insecurity and self-questioning (Einarsen & Nielsen, 2015; Mikkelsen & Einarsen, 2002). That is, hostile social events, or series of such events, threaten our basic cognitive schemas and fundamental beliefs about the world being benevolent and meaningful, and that we, as individuals, are worthy, decent and capable human beings deserving affection and support by our friends and fellow citizens. When facing aggression at the workplace, victims will instantly or at least gradually and painfully become aware of the fragility of these assumptions, arising strong stress responses, and possibly a long-lasting state of fear, cognitive confusion, anxiety and depression (Einarsen & Nielsen, 2015), something which again may also lead to dissatisfaction with the job.

Experiencing workplace aggression will serve as a confirmation of the world as unjust and dangerous. To our knowledge, there is only

one published study of workplace aggression against nurses in Palestine (Kitaneh & Hamdan, 2012).

1.2. Aim of the study

The aims were to determine the prevalence of workplace aggression among Palestinian nurses in the Hebron district and to examine cross-sectional associations between exposure to workplace aggression and the occurrence of psychological distress and job satisfaction. In light of the cognitive theory of trauma, the outcomes of workplace aggression may be dependent upon the nature and severity of the exposure. For instance, it is likely that exposure repeated and systematic abuse (i.e., workplace bullying) can be experienced as more severe than one-off instances of verbal abuse. Similarly, exposure to physical aggression may be especially detrimental as this violates both the physical and psychological integrity of those exposed. There are few studies that have compared the impact of different forms of aggression. Hence, a further aim was to extend previous research by determining the relative impact of three different forms of aggression on psychological distress and job satisfaction, namely physical aggression, verbal aggression, and workplace bullying.

2. Methods

2.1. Study population

Health care services in Palestine are provided by the Ministry of Health (MOH), Non-Governmental Organizations, United Nations Relief and Works Agency (UNRWA) and private medical service. Hebron is the largest district in population and area in Palestine; with a population of approximately 641,000 inhabitants (Palestinian Central Bureau of Statistics (PCBS), 2012). In 2012, approximately 1000 registered nurses were working in all health sectors, and approximately 40% of them were males (Palestinian Nursing Association (PNA) 2012, personal communication).

This study is part of a larger occupational nurse project measuring several work factors and health outcomes (Jaradat, Nielsen, Kristensen, & Bast-Pettersen, 2016; Jaradat et al., 2012; Jaradat, Nijem et al., 2016). Three hundred and seventy-two registered nurses were invited to participate in this study. They were working at hospitals and primary health care clinics at the Hebron district, and the questionnaire was distributed from October to December, 2012. Nurses answered the questionnaire at work. Of these 372 nurses, 10 were on long leave, 16 refused to participate, and three did not provide sufficient data on exposure (workplace aggression). These 29 nurses were not included in the current study, and a total of 343 nurses (92.2% response rate) were retained for the final sample. The mean age of the respondents was 37.4 ± 8.0 years ranging in age from 24 to 61 years, and 212 (62%) were females.

2.2. Instruments

Several self-administered questionnaires were applied in the study. Background data were collected with a questionnaire consisting of questions about socio-demographic and organizational characteristics variables, including gender, age, work setting, work schedule and job position. The questionnaire reporting workplace aggression (WHO, 2003) includes items about aggressive events in the workplace, including exposure to physical aggression, verbal aggression and bullying/mobbing against nurses in the past 12 months. It also has questions about the characteristics of perpetrators, the consequence of aggression, the availability of policies or procedures of reporting aggression events, and if nurses have been encouraged by the administration to report aggression events at workplace. The questionnaire was mainly developed by the International Labor Office (ILO), International Council of Nurses

(ICN), World Health Organization (WHO), and Public Services International (PSI) (WHO, 2003).

Psychological distress was assessed with the thirty-item version of the General Health Questionnaire (GHQ-30) with four responses. An example of such response options could be “better than usual”, “like usual”, “worse than usual”, and “much worse than usual” (el-Rufaie & Daradkeh, 1996; Goldberg, 1978). The Likert method was used for scoring, where responses were scored with 0, 1, 2 and 3 points. For analysis, continuous scores were used. The final scale had a range from zero to 90, and it had high internal consistency with a Cronbach's α of 0.90 of the summary score (scale). Higher scores on the scale indicated more psychological distress. Three hundred and seventeen nurses responded to the questionnaire. Job satisfaction was measured with the ten items Generic Job Satisfaction Scale (Macdonald & MacIntyre, 1997). Responses were coded as strongly disagree (0), disagree (1), do not know (2), agree (3), and strongly agree (4). The final scale had a range of 0–40 and was reliable with a Cronbach's α of 0.80, where higher scores indicated greater job satisfaction. Three hundred and thirty-seven nurses responded to this questionnaire.

The questionnaires were translated from English into Arabic by the research team and were revised with assistance from a professional translator in the field to overcome language problems. They were modified and rephrased to fit the objectives of the study and the Palestinian culture. All questionnaires were piloted prior to the formal data collection by randomly selecting 22 nurses who were excluded from the study sample. Both Arabic version and English version of the questionnaires were distributed. After piloting, the questions were amended and slightly modified according to the results of the pilot study. The workplace violence items on racial harassment and sexual harassment were omitted. The reason for omitting the questions about racial abuse was that this is rare in the study area since this is a very homogeneous society in terms of ethnic diversity. Sexual harassment topics are culturally sensitive and might have caused more persons to avoid answering the questionnaires. Administrators and head nurses in workplaces were informed and approached about the study. The questionnaires were collected from the nurses at their workplaces. Time to complete the overall survey questionnaire was about 2 hours, and we offered the nurses one week to time to return the questionnaires. To assure confidentiality and anonymity, the questionnaires were identified with a code number.

2.3. Ethical consideration

The study was approved by the Regional Committee for Medical and Health Research Ethics, REC South East, Norway. Permission to conduct the study was obtained from the Palestinian Ministry of Health and other health care providers (non-governmental, UNRWA and private sectors), and the research protocol was approved by the research board at Hebron University. Informed written consent was obtained from each participant prior to beginning the study. The participants were provided with information about the purposes of the study and were informed that the collected data were strictly confidential and would only be used for scientific purposes. Additionally, they were informed that their participation was voluntary, that they could refuse to answer any item, and that there would be no adverse consequences for refusing to participate. Moreover, they were informed that results of the study would be published in national and international scientific journals. The results of the study could be helpful in improving the working conditions at the hospitals and clinics. Confidentiality of the data was assured by collection of the completed questionnaires in sealed envelopes. Only the researchers then had access to the data. The questionnaires did not include any personal identifying information and the individual's responses or results could not be linked to his/her identity. Coding and aggregate reporting were used to eliminate respondent identification and ensure anonymity.

2.4. Statistical analysis

Before the data analyses were conducted, the normal distribution of the variables was tested. K-density tests indicated that the variables more or less fulfilled the postulation of normal distribution.

Descriptive statistics relating to the socio-demographics and work-organizational factors were completed. Pearsons' chi-square analysis was used to test differences in the exposure to physical aggression, verbal aggression and bullying/mobbing according to the respondents' socio-demographical characteristics. Linear regression analyses were used to determine the potential association "i.e., coefficients and 95 % confidence intervals" between exposure to workplace aggression (workplace aggression of any kind either physical, or verbal or bullying, separately physical aggression, separately verbal aggression, separately bullying). All exposure variables were converted into categorical variables (exposed/not exposed). We conducted separate regression analyses for each kind of workplace aggression in association with the mean levels of the outcomes (psychological distress and job satisfaction).

The assumptions of the linear model (linearity and constant error variance) were checked by plotting the residuals versus the predicted values (adding a smoothing curve with a confidence interval). We checked the robustness of the models by plotting the delta-beta values for the types of aggression variables. The results were considered robust against outliers. While findings are somewhat inconsistent, some previous studies have found that exposure to aggression are dependent upon occupational status (Ortega, Høgh, Pejtersen, Feveile, & Olsen, 2009), are more frequently reported by females (e.g., Niedhammer, Chastang, Sultan-Taieb, Vermeylen, & Parent-Thirion, 2013), and positively associated with age (e.g., Notelaers, Vermunt, Baillien, Einarsen, & De Witte, 2011). Furthermore, the impact of workplace aggression may be conditioned by whether a workplace has a formal system for reporting incidences of aggression. In order to control for the potential impact of these variables, all analyses were adjusted for gender, age, work schedule, position in job and availability of the system for reporting workplace aggression. The regression models showed no deviance from the assumptions of linearity and constant variance of the residuals. Mean and SD was used to calculate effect size d [$d = (x_1 - x_2) / SD$] (Cohen, 1988). Data were analyzed using STATA version 10. The level of statistical significance was set at 5%.

3. Results

Table 1 shows the demographic and organizational characteristics for the 343 participants and the prevalence of physical aggression, verbal aggression and bullying in the past 12 months. Ninety-three (27.1%) nurses reported exposure to workplace aggression of any kind, 17 (5%) reported exposure to physical aggression, 83 (24.2%) reported exposure to verbal aggression and 25 (7.3%) reported exposure to bullying. Approximately half of the nurses reported that they have a system or procedure for reporting aggression at the workplace.

The patients and/or patients' relatives were responsible for 47% of the physical aggression, 81% of the verbal aggression and 31% of bullying against nurses. Colleagues were responsible for 23.5% of the physical aggression, 10% of the verbal aggression and 56% of bullying. The visitors were responsible for 29.4% of the physical aggression, 9% of the verbal aggression and 12.5% of the bullying (not tabulated).

Males reported significantly higher percentages of exposures to bullying than females (11.5% compared with 4.7%). With respect to different age groups, nurses who were 35 years old or younger reported the highest prevalence of exposure to physical aggression (9% compared with 1.6%), verbal aggression (29.7% compared with 19.7%) and bullying (10.3% compared with 4.8%) than nurses who were older 35 years. Nurses who reported that they have a system or procedure for reporting aggression at the workplace reported the highest prevalence of exposure to physical aggression (9.1% compared with 0.6%) than nurses who did not report that they have a system. Nurses who reported that

they have been encouraged by the administration to report aggression events reported the highest prevalence of exposure to physical aggression (8.6% compared with 2.5%) than nurses who did not report that they have been encouraged.

Fig. 1 illustrates the distribution of psychological distress symptoms according to category of self-reported exposure to verbal aggression. Distress symptom score levels were higher in association with exposure to verbal aggression. The mean score was 29.6 units (standard deviation (SD) 10.9; (range 10 to 65) among the nurses who reported to be exposed to verbal aggression, while the mean scores among the nurses who reported to be unexposed to verbal aggression was 26.6 units (SD = 10.6; range 4 to 59). Fig. 2 illustrates the distribution of job satisfaction scores related to the self-reported exposure to bullying. A higher job satisfaction score was more prevalent among nurses who answered that they were not exposed to bullying. The mean score was 23.7 units (SD = 6.1; range from 4 to 40) among nurses who reported to be unexposed to bullying, while the mean score among the nurses who reported to be exposed to bullying was 20.8 units (SD = 6.5; range from 4 to 31).

Table 2 shows the findings from the linear regression analyses of associations between self-reported psychological distress (GHQ-30 scores) and job satisfaction as dependent variables and exposure to the different forms of workplace aggression as independent variables (8 models). Nurses who reported exposure to verbal aggression reported more psychological distress by 2.9 units ($p = 0.04$; CI 0.2 to 5.7). This difference in score between groups represents an effect size (Cohens's d) of 0.27. The finding of higher psychological distress was still significantly associated with exposure to verbal aggression after adjusting for the covariates (2.9 units; $p = 0.04$; 95% CI 0.2 to 5.6).

Nurses who reported exposure to bullying/mobbing answered that they had a significantly lower job satisfaction, by 2.9 units ($p = 0.03$; 95% CI -5.4 to -0.3). This difference in score between groups represents an effect size (Cohens's d) of 0.45. The finding of lower job satisfaction was still significantly associated with exposure to bullying/mobbing after adjusting for the covariates (2.6 units; $p = 0.04$; 95% CI -5.1 to -0.14).

4. Discussion

4.1. Main findings

The main findings of the study were that 27.1% of the nurses reported exposure to workplace aggression of any kind. The patients and patients' relatives were the main perpetrators of physical and verbal aggression, whereas the colleagues were the main perpetrators of bullying. More men than women reported exposure to bullying. Younger nurses reported the highest exposure to workplace aggression. Nurses who reported exposure to verbal aggression reported more psychological distress, but the difference between the groups represented a relatively small effect, whereas nurses who reported exposure to bullying reported significantly lower job satisfaction and the difference between groups represented a medium effect size. The Palestinian nurses in the present study reported relatively lower rates of exposure to workplace aggression compared with most studies from Arab and non-Arab countries (Abbas et al., 2010; AbuAlRub & AL Khawaldeh, 2014; Celik, Celik, Ağırbaş, & Uğurluoğlu, 2007; Duncan et al., 2001; Gacki-Smith et al., 2009; Kitaneh & Hamdan, 2012; Kwok et al., 2006). There are several possible explanations for these disparities in the prevalence rates. For instance, different assessment methods may have been used in different studies. Previous research has established that the prevalence rates of aggression heavily depend on how aggression is measured (Ilies, Hauserman, Schwochau, & Stibal, 2003; Nielsen et al., 2010). The type of sampling method used in the different studies could also influence the estimates. For instance, studies have shown that convenience samples provide different findings on aggression than random and representative samples (Nielsen & Einarsen, 2008; Nielsen et al., 2010). The relatively low prevalence workplace aggression in our study might

Table 1
Distribution of socio-demographics and work-organizational factors, prevalence of workplace aggression of any kind; physical aggression, verbal aggression and bullying/mobbing according to socio-demographics and work-organizational factors among 343 nurses, Hebron 2012.

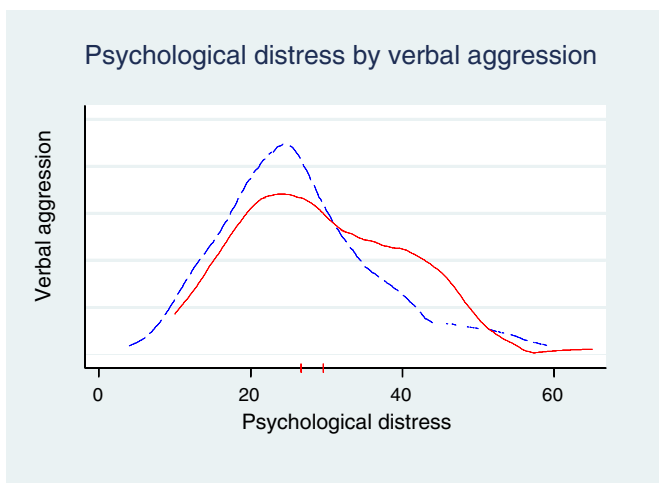
Variables	All		Exposed to workplace aggression of any kind			Exposed to physical aggression			Exposed to verbal aggression			Exposed to bullying/mobbing		
	N	%	N	%	p	N	%	p	N	%	p	N	%	p
Gender														
Women	212	61.8	56	26.4	0.71	10	04.7	0.80	50	23.6	0.74	10	04.7	0.02
Men	131	38.2	37	28.2		7	05.3		33	25.2		15	11.5	
Total	343	100	93	27.1		17	05.0		83	24.2		25	07.3	
Age groups (years)														
≤ 35	155	45.2	54	34.8	0.005	14	09.0	0.002	46	29.7	0.03	16	10.3	0.05
> 35	188	54.8	39	20.7		3	01.6		37	19.7		9	04.8	
Total	343	100	93											
Work setting														
In patient	267	77.8	71	26.6	0.68	15	05.6	0.29	61	22.9	0.27	21	07.9	0.44
Out patient	76	22.2	22	29.0		2	02.6		22	29.0		4	05.3	
Total	343	100	93											
Work schedule														
Day work	160	46.6	39	24.4	0.29	5	03.1	0.14	35	21.9	0.35	10	06.3	0.49
Shift work	183	53.4	54	29.5		12	06.6		48	26.2		15	08.2	
Total	343	100	93											
Position in job														
Administrative	77	22.4	19	24.7	0.59	1	01.3	0.09	18	23.4	0.81	4	05.2	0.42
Non-administrative	266	77.6	74	27.8		16	06.0		65	24.4		21	07.9	
Total	343	100	93											
Available of system/procedure for reporting aggression														
No	167	48.8	38	22.8	0.07	1	0.6	0.001	38	22.8	0.52	10	06.0	0.36
Yes	175	51.2	55	31.4		16	9.1		45	25.7		15	08.6	
Total	342	100	93											
Encouragement to report aggression														
No	201	58.9	47	23.4	0.07	5	2.5	0.01	46	22.9	0.55	13	06.5	0.46
Yes	140	41.1	45	32.1		12	8.6		36	25.7		12	08.6	
Total	341	100	92											

also be related to the underreporting of aggressive events due to the use of self-report questionnaires. As a result, nurses may have considered their exposure to aggression as private information. In support of this latter explanation, *Sofield and Salmond (2003)* found that incidents of workplace aggression may be underreported due to absence of institutional reporting policies or due to the perception that assaults are part of the job, the beliefs that reporting will not benefit them, and concerns that assaults may be viewed as evidence of poor job performance.

As we have shown, patient and relatives were responsible for most of the physical and verbal aggression, while colleagues were most often responsible for bullying. Similar results were reported by *Abbas*

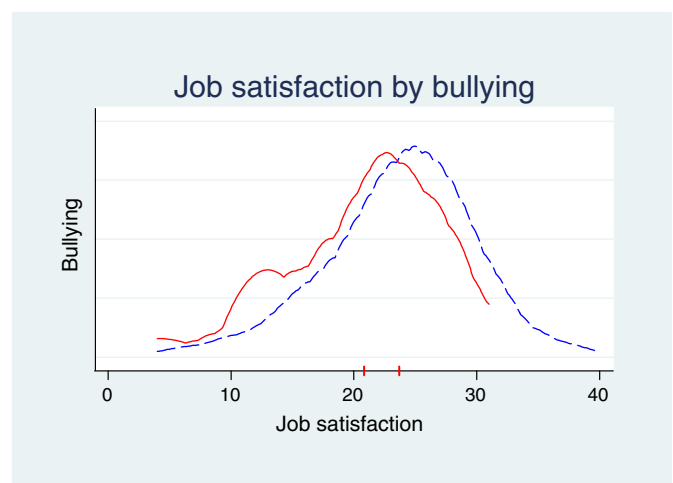
et al. (2010) and *Kwok et al. (2006)*. One study reported that patients and their relatives were the most important source of physical aggression against nurses, while coworkers were the most important source of verbal aggression (*Celik et al., 2007*). Another study reported that patients, coworkers, and visitors committed non-physical aggression against nurses (*Gerberich et al., 2004*).

A study among Canadian nurses reported that a perception of staffing and resources as inadequate was related to patients' physical and emotional abuse against nurses (*Shields & Wilkins, 2009*). Waiting for a long time may make patients and their families unstable, which may increase their likelihood of acting aggressively (*Hinson & Shapiro,*



Legend: Unexposed: short dash line (blue); Exposed: long dash line (red).

Fig. 1. Distribution of psychological distress symptoms among nurses by self-reported exposure to verbal aggression. Legend: Unexposed: short dash line (blue); exposed: long dash line (red).



Legend: Not bullied: short dash line (blue); Bullied: long dash line (red).

Fig. 2. Distribution of job satisfaction levels among nurses according to self-reported exposure to bullying. Legend: Not bullied: short dash line (blue); bullied: long dash line (red).

Table 2

Crude and adjusted associations between workplace aggression of any kind; physical aggression, verbal aggression, bullying/mobbing and psychological distress (based on GHQ-30) and job satisfaction (based on Generic Job Satisfaction Scale) among nurses, Hebron 2012.

Psychological distress (GHQ-30 Score) (n = 317) Grand mean = 27.3	Crude							Adjusted ^a			
	N	Mean ^b	95% CI	Beta ^b	St error	95% CI	p	Beta ^b	St error	95% CI	p
Workplace aggression of any kind											
Exposed	85	29.1	26.7 to 31.5	2.4	1.4	-0.2 to 5.1	0.07	2.3	1.3	-0.3 to 5.0	0.08
Not exposed	232	26.7	25.3 to 28.0								
Physical aggression											
Exposed	16	30.6	23.9 to 37.3	3.5	2.8	-2.0 to 8.9	0.21	2.5	2.8	-3.0 to 7.9	0.38
Not exposed	301	27.2	26.0 to 28.4								
Verbal aggression											
Exposed	76	29.6	27.1 to 32.0	2.9	1.4	0.2 to 5.7	0.04	2.9	1.4	0.2 to 5.6	0.04
Not exposed	241	26.6	25.3 to 28.0								
Bullying/Mobbing											
Exposed	24	30.3	24.8 to 35.7	3.2	2.3	-1.3 to 7.6	0.17	3.7	2.2	-0.7 to 8.1	0.10
Not exposed	293	27.1	25.9 to 28.3								
Job satisfaction (Generic Job Satisfaction Scale) (n = 337) Grand mean = 23.5											
	Crude							Adjusted ^c			
	N	Mean ^d	95% CI	Beta ^d	St error	95% CI	p	Beta ^d	St error	95% CI	p
Workplace aggression of any kind											
Exposed	91	23.4	22.1 to 24.7	-0.15	0.8	-1.6 to 1.3	0.85	-0.01	0.7	-1.5 to 1.5	0.99
Not exposed	246	23.5	22.8 to 24.3								
Physical aggression											
Exposed	17	22.3	19.1 to 25.5	-1.3	1.5	-4.3 to 1.8	0.42	-1.60	1.5	-4.6 to 1.4	0.30
Not exposed	320	23.6	22.8 to 24.2								
Verbal aggression											
Exposed	81	23.6	22.2 to 24.9	0.1	0.8	-1.5 to 1.6	0.91	0.36	0.8	-1.2 to 1.9	0.64
Not exposed	256	23.5	22.7 to 24.2								
Bullying/Mobbing											
Exposed	25	20.8	18.3 to 23.4	-2.9	1.3	-5.4 to -0.3	0.03	-2.60	1.3	-5.1 to -0.1	0.04
Not exposed	312	23.7	23.0 to 24.4								

^a Adjusted for gender, age, work schedule, position in job and availability of system (N = 316).

^b Higher score indicates increased mental distress.

^c Adjusted for gender, age, work schedule, position in job and availability of system (N = 335).

^d Higher score indicates higher job satisfaction.

2003). In our study, bullying/mobbing against nurses was conducted mainly by colleagues.

In the present study, male nurses reported significantly higher exposure to bullying compared to their female colleagues. This finding is in line with previous studies on aggression from the same geographical region, which have found that male nurses report the highest exposure to both physical and non-physical aggression (Abbas et al., 2010). For instance, Kitaneh and Hamdan (2012) found that males in Palestinian health care reported higher exposure to physical aggression compared to their female colleagues. In studies from other parts of the world, it has also been found that male nurses are more likely than females to experience workplace aggression (Gacki-Smith et al., 2009; Gerberich et al., 2004; Kwok et al., 2006; Shields & Wilkins, 2009). One hypothetical explanation for the finding of male gender as a risk factor for aggression within nursing is that men usually represent a gender minority within nursing. Therefore, it is possible that male nurses are seen as a threat to the traditional female culture in the nursing staff. This explanation supports the theoretical notion that the target of bullying is often singled out and victimized due to an existing, socially exposed position within the work group, which indicates a sheer effect of the gender minority on the exposure of perceived unwanted and aggressive behavior at work (Eriksen & Einarsen, 2004). On the other hand, as approximately 40% of the nurses in the present study were males, it can be questioned whether this explanation is plausible for the established gender differences.

Younger nurses reported significantly higher exposure to physical aggression, verbal aggression and bullying. One explanation for this finding is that younger nurses have limited experience with predicting

the abusive situation or incident. Another explanation for the finding that younger and inexperienced nurses reported more frequent exposure to workplace aggression could be that they are not accustomed to workplace violence and are therefore expected not to be subjected to such aggression (Duncan et al., 2001).

Psychological distress was associated with exposure to verbal aggression, whereas job satisfaction was associated with exposure to bullying. This result is in line with the findings of previous studies on the health outcomes of aggression (Bowling & Beehr, 2006; Hershcovis, 2011; Nielsen et al., 2014; Arnetz & Arnetz, 2001; Sofield & Salmund, 2003; Reknes, Einarsen, et al., 2014; Reknes, Pallesen, et al., 2014). The impact of abuse on nurses has been reported to result in tiredness, sleeping problems, stress, headache, depression and nightmares (Celik et al., 2007). While the cross-sectional nature of the current study limits conclusions about causal relationships, previous longitudinal research among nurses has established workplace aggression as a significant predictor of later mental distress (Reknes, Einarsen, et al., 2014; Reknes, Pallesen, et al., 2014). Hence, in line with the cognitive activation theory of stress (Ursin & Eriksen, 2004) it is likely that being a victim of bullying activates an increasing feeling of anxiety and exhaustion, because of the assumed prolonged cognitive and physiological activation related to worrying and trying to cope with the situation (Reknes, Einarsen, et al., 2014; Reknes, Pallesen, et al., 2014). Hence, the findings add some support to the "Cognitive Theory of Trauma" (Janoff-Bulman, 1992) highlighted in the introduction to this study in that being exposed to aggression may threaten basic needs of belonging and having control over the surroundings, thus elevating the risk of feeling anxious and fatigue.

The findings also showed that exposure to aggression can impact the nurses' attitudes toward their jobs. Specifically, nurses exposed to bullying reported significantly lower job satisfaction than non-exposed colleagues. This finding augments previous research that reported negative associations between exposure to aggression and satisfaction with the job (Arnetz & Arnetz, 2001; Bowling & Beehr, 2006; Dougherty et al., 1992; Hershcovis, 2011; Nielsen et al., 2014; Sofield & Salmond, 2003). An explanation for the association between bullying and job satisfaction is that exposure to this kind of aggression leads to frustration, anger, fear and anxiety (Arnetz & Arnetz, 2001; Sofield & Salmond, 2003), which are reactions that lead to a more negative perception of the job and work tasks. Reduced job satisfaction among nurses may have significant ripple effects, and studies have identified a relationship between job satisfaction and negative patient outcomes (Roche, Diers, Duffield, & Catling-Paull, 2010; Sofield & Salmond, 2003).

4.2. Strengths and weaknesses

One of the strengths of the study is high response rate (92.2%). Another strength is the large proportion of male nurses, almost 40%, which is in contrast with published studies of nurses from other parts of the world, allowing us to study gender differences. However, the cross-sectional nature of the study prevents us from indicating a definite cause of the association between aggression and the outcome variables. Previous research has showed that there is a reciprocal and bidirectional relationship between bullying and mental health of equal magnitude (Nielsen et al., 2014). Hence, based on the current study it cannot be determined whether mental health and job satisfaction are antecedents or outcomes of workplace aggression.

The study used a retrospective self-reporting approach in data collection. This method depends on the ability of the participants to recall events in the last 12 months previous to study, which might have potential biases. Selection bias in occupational studies might underestimate the negative effects of aggression. The association between the exposures and outcome (psychological distress and job satisfaction) for non-participants is unknown, which could be a potential of selection bias (Rothman, 2002). Data quality problems and potential information bias are possible threats to the study validity.

The sample sizes were large when comparing gender differences, giving a statistical power considerably higher than 0.80 to detect a difference between groups with an effect size of 0.40 and with a level of significance set to 5%. When comparing the different groups of workplace aggression, where the number of subjects reporting aggression is quite small, the statistical power is lower. However, according to Cohen (1988) when comparing two samples of different sizes, the harmonic means of the numbers in the two groups can be applied. In the case of physical aggression related to psychological distress, the harmonic means of the numbers in the two groups was approximately 30, giving a statistical power of 0.80 provided that the effect size is large, between 0.70 and 0.80 (Cohen, 1988). Information on workplace aggression and psychological distress were collected from widely used questionnaires (WHO and GHQ-30). However, both questionnaires were based on self-reported data and could be hampered by error in recall or social desirability preferences. We omitted the questions about racial harassment due to the homogenous population, and the sexual harassment questions as they could impact on our results.

The most serious problem is likely to be inflating information bias caused by the cross-sectional design and the fact that data on both the exposure and outcome were self-reported. These two problems could both result in differential misclassification (Rothman, Greenland, & Lash, 2008) and dependent misclassification (common method bias; Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). We also recognize that the items in these instruments are qualitative data on an ordinal scale. Applying parametric analytical methods could therefore pose a problem, but it is probably not much of a problem for the summary scale instruments (Carifio & Perla, 2007). Although the study had a high

response rate, the study was limited to hospitals and clinics in the Hebron District, West Bank. Therefore these results may not be generalized to the whole sector in Palestine.

In the current study we controlled whether gender, age, work schedule, position in job, and availability of system to report workplace aggression affected the examined relationships between aggression, health, and job satisfaction. There are, however, other unaccounted covariates and confounders that could impact on our results. For instance, as occupational variables such as role conflict and role ambiguity have been related to both workplace aggression (Hauge, Skogstad, & Einarsen, 2010; Reknes, Einarsen, et al., 2014; Reknes, Pallesen, et al., 2014) and indicators of health and well-being (Finne, Christensen, & Knardahl, 2014; Johannessen, Tynes, & Sterud, 2013), it may be that experiences of these role expectations may confound the associations between workplace aggression and the investigated outcome variables. There is also the possibility that the nurses did not clearly distinguish between verbal aggression and bullying, which could cause the nurses to report verbal aggression as bullying or vice versa. The finding should therefore be interpreted with caution.

4.3. Implications

A noteworthy finding from the current study is that only approximately half of the nurses reported that there was an available system or procedure for reporting aggression at the workplace. In a study among Palestinian health care personnel, 56.3% of subjects exposed to violence did not report the incident (Kitaneh & Hamdan, 2012). In a study of US emergency nurses, it was reported that nurses who felt that violence from patients/visitors was an unavoidable part of practice were more likely to have experienced frequent physical violence. As we have shown, exposure to aggression is related to both higher levels of mental distress and lower levels of job-satisfaction. Hence, in addition to further establishing the nature of the causal association between aggression and covariates, future research on workplace aggression in nursing should focus on how and when aggression is related to health and well-being. In the current study, we have highlighted the "Cognitive Theory of Trauma" (Janoff-Bulman, 1992) as a theoretical framework for understanding this specific relationship. Upcoming research may benefit from a further exploration of this theory.

The findings of associations between aggression and impaired mental health and job satisfaction pinpoint the importance of effective preventive measures against aggression within nursing. At a primary level, the findings suggests that regulations against aggression should be included in work related legislations and policies. If aggression is allowed to persist it is vital to provide help and support to targets. Following the "Cognitive Theory of Trauma" it may be especially important to help victims rebuild their experience of self-worth and self-esteem to make them establish more positive basic assumptions about life.

A positive step toward creating a safer work environment is establishing a culture of acceptance for reporting violent incidents (Gacki-Smith et al., 2009). Nurses should have basic training related to communication, how to deal with aggressive behavior, stress management and safety measure in workplaces. Employers should support and provide the opportunity to speak about and report the incident in cases of aggression. All employers should provide a formalized structure of support for all staff that has been assaulted while at work. Finally, there must be a policy which is comprehensive and consistent in relation to reporting aggression. Providing appropriate training programs to promote healthcare workers' communication skill, legislation of laws and policies, reporting system, security procedures and supporting workers-at-risk might be contribute to minimizing the aggressive acts. Also, providing adequate information and increasing awareness of the patients and their families regarding the phenomenon of workplace aggression through mass media should be considered. Interventional studies are needed to compare the impact of different methods or programs on decreasing workplace aggression.

5. Conclusions

The aims were to determine the prevalence of workplace aggression among Palestinian nurses in the Hebron district and to examine cross-sectional associations between exposure to workplace aggression and the occurrence of psychological distress and job satisfaction.

The main findings in this cross-sectional study were that 27.1% of the respondents reported exposure to workplace aggression of any kind, and that younger nurses reported the highest exposure to all kinds of workplace aggression. Men reported exposure to bullying more frequently than women.

Psychological distress and job dissatisfaction were more prevalent among nurses exposed to workplace aggression. Nurses exposed to verbal aggression reported significantly more psychological distress, but the difference was small, whereas job dissatisfaction was associated with exposure to bullying with a medium effect size.

Competing interests

The authors declared that we have no competing interest.

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References

- Abbas, MA, Fiala, LA, Abdel Rahman, AG, & Fahim, AE (2010). Epidemiology of workplace violence against nursing staff in Ismailia Governorate, Egypt. *The Journal of the Egyptian Public Health Association*, 85(1–2), 29–43.
- AbuAlRub, RF, & Al Khawaldeh, AT (2014). Workplace physical violence among hospital nurses and physicians in underserved areas in Jordan. *Journal of Clinical Nursing*, 23(13–14), 1937–1947. <http://dx.doi.org/10.1111/jocn.12473>.
- AbuAlRub, RF, & Al-Asmar, AH (2011). Physical violence in the workplace among Jordanian hospital nurses. *Journal of Transcultural Nursing*, 22(2), 157–165.
- Arnetz, JE, & Arnetz, BB (2001). Violence towards health care staff and possible effects on the quality of patient care. *Social Science & Medicine*, 52(3), 417–427.
- Bowling, NA, & Beehr, TA (2006). Workplace harassment from the victim's perspective: A theoretical model and meta-analysis. *The Journal of Applied Psychology*, 91(5), 998–1012.
- Buss, AH (1961). *The psychology of aggression*. New York: John Wiley and Sons, Inc.
- Buss, DM, & Shackelford, TK (1997). Human aggression in evolutionary psychological perspective. *Clinical Psychology Review*, 17(6), 605–619. [http://dx.doi.org/10.1016/S0272-7358\(2897\)2900037-8](http://dx.doi.org/10.1016/S0272-7358(2897)2900037-8) 9336687.
- Cariño, J, & Perla, RJ (2007). Ten common misunderstandings, misconceptions, persistent myths and urban legends about Likert scales and Likert response formats and their antidotes. *Journal of Social Sciences*, 3(3), 106–116. <http://dx.doi.org/10.3844/jssp.2007.106.116>.
- Celik, SS, Celik, Y, Ağırbaş, I, & Uğurluoğlu, O (2007). Verbal and physical abuse against nurses in Turkey. *International Nursing Review*, 54(4), 359–366.
- Chapman, R, Perry, L, Styles, I, & Combs, S (2009). Consequences of workplace violence directed at nurses. *The British Journal of Nursing*, 18(20), 1256–1261.
- Cohen, J (1988). *Statistical power analysis for the behaviour sciences* (2nd ed.). New Jersey: Lawrence Erlbaum associates, Publishers.
- Dougherty, LM, Bolger, JP, Preston, DG, Jones, SS, & Payne, HC (1992). Effects of exposure to aggressive behavior on job satisfaction of health care staff. *Journal of Applied Gerontology*, 11(2), 160–172.
- Duncan, SM, Hyndman, K, Estabrooks, CA, Hesketh, K, Humphrey, CK, Wong, JS, ... Giovannetti, P (2001). Nurses' experience of violence in Alberta and British Columbia hospitals. *The Canadian Journal of Nursing Research*, 32(4), 57–78.
- Edward, KL, Ousey, K, Warelou, P, & Lui, S (2014). Nursing and aggression in the workplace: A systematic review. *The British Journal of Nursing*, 23(12). <http://dx.doi.org/10.12968/bjon.2014.23.12.653> (653–654, 656–659).
- Einarsen, S, & Nielsen, MB (2015). Workplace bullying as an antecedent of mental health problems: A five-year prospective and representative study. *International Archives of Occupational and Environmental Health*, 88(2), 131–142. <http://dx.doi.org/10.1007/s00420-014-0944-7>.
- el-Rufaie, OF, & Daradkeh, TK (1996). Validation of the Arabic versions of the thirty- and twelve-item general health questionnaires in primary care patients. *The British Journal of Psychiatry: The Journal of Mental Science*, 169, 662–664.
- Eriksen, W, & Einarsen, S (2004). Gender minority as a risk factor of exposure to bullying at work: The case of male assistant nurses. *European Journal of Work and Organizational Psychology*, 13(4), 473–492.
- Finne, LB, Christensen, JO, & Knardahl, S (2014). Psychological and social work factors as predictors of mental distress: A prospective study. *PLoS One*, 9(7), e102514. <http://dx.doi.org/10.1371/journal.pone.0102514>.
- Gacki-Smith, J, Juarez, AM, Boyett, L, Homeyer, C, Robinson, L, & MacLean, SL (2009). Violence against nurses working in US. Emergency departments. *The Journal of Nursing Administration*, 39(7–8), 340–349.
- Gerberich, SG, Church, TR, McGovern, PM, Hansen, HE, Nachreiner, NM, Geisser, MS, ... Watt, GD (2004). An epidemiological study of the magnitude and consequences of work related violence: The Minnesota Nurses' study. *Occupational and Environmental Medicine*, 61(6), 495–503.
- Goldberg, DP (1978). *Manual of the general health questionnaire*. Windsor, England: NFER-Nelson.
- Hauge, LJ, Skogstad, A, & Einarsen, S (2010). Role stressors and exposure to workplace bullying: Causes or consequences of what and why? *European Journal of Work and Organizational Psychology*, 20(5), 610–630.
- Hershcovis, MS (2011). "incivility, social undermining, bullying ... Oh my!": A call to reconcile constructs within workplace aggression research. *Journal of Organizational Behavior*, 32(3), 499–519. <http://dx.doi.org/10.1002/job.689>.
- Hinson, J, & Shapiro, M (2003). Violence in the workplace: Awareness and prevention. *Australian Health Review*, 26(1), 84–91.
- Illies, R, Hauserman, N, Schwochau, S, & Stibal, J (2003). Reported incidence rates of work-related sexual harassment in the United States: Using meta-analysis to explain reported rate disparities. *Personnel Psychology*, 56, 607–631.
- Janoff-Bulman, R (1992). *Shattered assumptions: towards a new psychology of trauma*. New York: The Free Press.
- Jaradat, Y, Bast-Petersen, R, Nijem, K, Bjertness, E, Lien, L, Kristensen, P, & Stigum, H (2012). The impact of shift work on mental health measured by GHQ-30: A comparative study. *Middle East Journal of Psychiatry and Alzheimer's*, 3(1), 8–16.
- Jaradat, Y, Nielsen, M. B., Kristensen, P., & Bast-Petersen, R. (2016). *Shift work, mental distress and job satisfaction among Palestinian nurses*. *Occupational Medicine* [Accepted for publication, 21-Jul-2016].
- Jaradat, Y, Nijem, K, Lien, L, Stigum, H, Bjertness, E, & Bast-Petersen, R (2016). Psychosomatic symptoms and stressful working conditions among Palestinian nurses: A cross-sectional study. *Contemporary Nurse*, 1–17. <http://dx.doi.org/10.1080/10376178.2016.1188018>.
- Johannessen, HA, Tynes, T, & Sterud, T (2013). Effects of occupational role conflict and emotional demands on subsequent psychological distress. A 3-year follow-up study of the general working population in Norway. *Journal of Occupational and Environmental Medicine / American College of Occupational and Environmental Medicine*, 55(6), 605–613.
- Kitaneh, M, & Hamdan, M (2012). Workplace violence against physicians and nurses in Palestinian public hospitals: A cross-sectional study. *BMC Health Services Research*, 12, 469. <http://dx.doi.org/10.1186/1472-6963-12-469>.
- Kwok, RP, Law, YK, Li, KE, Ng, YC, Cheung, MH, Fung, VK, ... Leung, WC (2006). Prevalence of workplace violence against nurses in Hong Kong. *Hong Kong Medical Journal*, 12(1), 6–9.
- Laschinger, HKS, & Nosko, A (2013). Exposure to workplace bullying and post-traumatic stress disorder symptomatology: The role of protective psychological resources. *Journal of Nursing Management*. <http://dx.doi.org/10.1111/jonm.12122>.
- Macdonald, S, & MacIntyre, P (1997). The generic job satisfaction scale. Scale development and its correlates. *Employee Assistance Quarterly*, 13.
- Mikkelsen, EG, & Einarsen, S (2002). Basic assumptions and symptoms of post-traumatic stress among victims of bullying at work. *European Journal of Work and Organizational Psychology*, 11, 87–111.
- Needham, I, Abderhalden, C, Halfens, RJ, Fischer, JE, & Dassen, T (2005). Non-somatic effects of patient aggression on nurses: A systematic review. *Journal of Advanced Nursing*, 49(3), 283–296.
- Niedhammer, I, Chastang, JF, Sultan-Taieb, H, Vermeylen, G, & Parent-Thirion, A (2013). Psychosocial work factors and sickness absence in 31 countries in Europe. *European Journal of Public Health*, 23(4), 622–629.
- Nielsen, MB, & Einarsen, S (2008). Sampling in research on interpersonal aggression. *Aggressive Behavior*, 34(3), 265–272.
- Nielsen, MB, Magerøy, N, Gjerstad, J, & Einarsen, S (2014). Workplace bullying and subsequent health problems. *The Journal for the Norwegian Medical Association*, 134(12–13), 1233–1238. <http://dx.doi.org/10.4045/tidsskr.13.0880>.
- Nielsen, MB, Matthiesen, SB, & Einarsen, S (2010). The impact of methodological moderators on prevalence rates of workplace bullying. A meta-analysis. *Journal of Occupational and Organizational Psychology*, 83(4), 955–979. <http://dx.doi.org/10.1348/096317909X481256>.
- Notelaers, G, Vermunt, JK, Baillien, E, Einarsen, S, & De Witte, H (2011). Exploring risk groups workplace bullying with categorical data. *Industrial Health*, 49(1), 73–88.
- Ortega, A, Høgh, A, Pejtersen, JH, Feveile, H, & Olsen, O (2009). Prevalence of workplace bullying and risk groups: A representative population study. *International Archives of Occupational and Environmental Health*, 82(3), 417–426. <http://dx.doi.org/10.1007/s00420-008-0339-8>.
- Palestinian Central Bureau of Statistics (PCBS) (2012). *West Bank southern governorates statistical. Ramallah, Palestine: Yearbook* (2011).
- Podsakoff, PM, MacKenzie, SB, Lee, JY, & Podsakoff, NP (2003). Common method biases in behavioral research: A critical review of the literature and recommended remedies. *The Journal of Applied Psychology*, 88(5), 879–903. <http://dx.doi.org/10.1037/0021-9101.88.5.879>.
- Reknes, I, Einarsen, S, Knardahl, S, & Lau, B (2014a). The prospective relationship between role stressors and new cases of self-reported workplace bullying. *Scandinavian Journal of Psychology*, 55(1), 45–52.

- Reknes, I, Pallesen, S, Magerøy, N, Moen, BE, Bjorvatn, B, & Einarsen, S (2014b). Exposure to bullying behaviors as a predictor of mental health problems among Norwegian nurses: Results from the prospective SUSSH-survey. *International Journal of Nursing Studies*, 51(3), 479–487. <http://dx.doi.org/10.1016/j.ijnurstu.2013.06.017>.
- Roche, M, Diers, D, Duffield, C, & Catling-Paull, C (2010). Violence toward nurses, the work environment, and patient outcomes. *Journal of Nursing Scholarship*, 42(1), 13–22.
- Rothman, KJ (2002). *Epidemiology an introduction*. New York: Oxford University Press Inc.
- Rothman, K, Greenland, S, & Lash, T (2008). *Modern Epidemiology* (3rd ed.). Philadelphia: Lipincott Williams and Wilkins, 137–139 (Chapter 9).
- Schat, AC, Frone, MR, & Kelloway, EK (2006). Prevalence of workplace aggression in the U.S. workforce: Findings from a national study. In E. K., J., & J. J. (Eds.), *Handbook of workplace violence* (pp. 47–89). Thousand Oaks, CA: Sage.
- Shields, M, & Wilkins, K (2009). Factors related to on-the-job abuse of nurses by patients. *Health Reports*, 20(2), 7–19.
- Sofield, L, & Salmond, SW (2003). Workplace violence. A focus on verbal abuse and intent to leave the organization. *Orthopedic nursing / National Association of Orthopedic Nurses*, 22(4), 274–283.
- Ursin, H, & Eriksen, HR (2004). The cognitive activation theory of stress. *Psychoneuroendocrinology*, 29(5), 567–592. [http://dx.doi.org/10.1016/S0306-4530\(03\)00091-X](http://dx.doi.org/10.1016/S0306-4530(03)00091-X).
- van de Vliert, E, Einarsen, S, & Nielsen, MB (2013). Cultures of employee harassment: Cross-national variation, explanation, and generalization. *Work and Stress*, 27(1), 106–122.
- Walsh, BR, & Clarke, E (2003). Post-trauma symptoms in health workers following physical and verbal aggression. *Work and Stress*, 17(2), 170–181.
- WHO (2003). Joint Programme on workplace violence in the health sector workplace violence in health sector. *Country case studies research instruments. Survey questionnaire*. Geneva: International Labor Office, International Council of Nurses, World Health Organization, and Public Services International.