

Workplace Sexual Harassment Increases the Risk of PTSD Symptoms with Higher Frequency and Harassment Coming from a Colleague or Leader as Risk Factors



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ABSTRACT

This study examined the effect of workplace sexual harassment on posttraumatic stress (PTSD) symptoms while also examining the effect of harassment frequency, harassment source, and workplace social capital. The sample consisted of 3153 Danish social educators (females 79.3%) responding to the International Trauma Questionnaire (ITQ) and the Copenhagen Psychosocial Questionnaire II item on sexual harassment (COPSOQ). The prevalence of sexual harassment was 22% exposed within the recent year.

We found a significant positive relationship between exposure to workplace sexual harassment and PTSD symptoms. Harassment frequency was associated with significantly higher levels of PTSD symptoms. Harassment from a colleague/leader compared to a client was associated with higher levels of PTSD symptoms although the difference was not statistically significant. Workplace social capital had an inverted association with PTSD symptoms, but there was no moderation effect on the relationship between sexual harassment and PTSD. These findings suggest that higher harassment frequency and harassment from a colleague/leader is associated with an increased severity of PTSD symptoms following exposure to workplace sexual harassment. Workplace social capital seems to alleviate level of PTSD symptoms, but did not moderate the association between exposure to workplace sexual harassment and PTSD symptoms. Possibly, feelings of shame and guilt may discourage some employees from disclosing their experiences with colleagues or leaders and thereby seek available support at the workplace. Future studies need to uncover the barriers that prevent victims of sexual harassment from seeking and benefitting from social support available at the workplace.

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Workplace sexual harassment involves unwelcome, intrusive sexual attention and verbal comments that are appraised by the recipient as offensive, exceeding his/her resources or threatening his/her wellbeing (Fitzgerald, Swan & Magley, 1997). Three forms of sexual harassment can be distinguished: gender harassment (such as sexist comments), unwanted sexual attention (uninvited sex-based comments, gestures, or attempts at physical contact), and sexual coercion (work-related intimidation or rewards used to induce sexual cooperation) (Fitzgerald, 1993; Fitzgerald, Swan & Magley, 1997; Lenhart, 2004). Fitzgerald and colleagues put sexual harassment on the agenda during the 1990's showing that sexual harassment was a common phenomenon with half of all working women experiencing some form of workplace sexual harassment. Sexual harassment was termed a "social problem of enormous proportions" (Fitzgerald, 1993, p. 1070). With recent social movements such as #MeToo, workplace sexual harassment has received renewed attention. Recent studies have documented that workplace sexual harassment continues to be a widespread negative experience among many employees (Jenner et al., 2019; Thurston, Chang, Matthews & von Känel, 2019). As women are more exposed to sexual harassment than men, workplace sexual harassment is also considered to be a type of gender-based workplace violence (Nyberg, Kecklund, Hanson & Rajaleid, 2020). The aim of the present study was to examine workplace sexual harassment and its association with posttraumatic stress (PTSD) symptoms within a large sample of special educators. Furthermore, we intend to investigate the effect of harassment frequency and harassment source on PTSD symptoms, and to examine the potential buffering effect of workplace social capital in the relationship between harassment and PTSD symptoms.

CONCEPTUALIZATION OF WORKPLACE SEXUAL HARASSMENT AND ITS CONSEQUENCES

In the literature, workplace sexual harassment and its personal consequences has been conceptualized as a type of abuse or interpersonal violence comparable to rape, incest, or intimate partner violence (Gutek & Koss, 1993; Lenhardt, 2004). Sexual harassment is perceived as abuse where the victim is unable to escape, as he/she may be economically dependent of the work situation and perhaps also the perpetrator. The economic dependence of victims of workplace sexual harassment is considered a unique factor of this type of abuse (Gutek & Koss, 1993). Yet, to understand the effects and the occurrence of workplace sexual harassment many dimensions must be considered. Workplace sexual harassment affects both somatic health, psychological

health, and organizational outcomes (Chan et al., 2008). Complex structures and interactions in the work environment also affects the victim for example, whether the harassment is named as such, what the victim decides to do, and the nature of the available support (Gutek & Koss, 1993). Stockdale (1996, p. 15) offers a model for understanding the interaction between multiple factors that influence the connection between sexual harassment and outcomes. Importantly, both victim characteristics and situational characteristics make an important influence. In relation to the work environment, research has shown that the work culture and norms, available social support, and procedures for disclosure of sexual harassment influence the outcomes of sexual harassment (Wilness, Steel & Lee, 2007). Further, Koss (1990) suggested that victims of sexual harassment, like other victims of sexual abuse, are more reluctant to disclose their experience, because they are inclined to blame themselves for the abuse. Studies have also shown that fear of negative evaluations from coworkers prevent some victims from disclosing their experiences (e.g., Papantoniou, 2021). Therefore, an investigation of workplace sexual harassment and its consequences need to consider a complex interplay of individual and situational factors with multiple causes and outcomes. In the present study, we focused on the psychological outcome of workplace sexual harassment, characteristics concerning the exposure and factors in the work environment that may influence the association between exposure and PTSD symptoms.

WORKPLACE SEXUAL HARASSMENT AND PTSD

Workplace sexual harassment has consistently been linked to severe negative job-related as well as personal health outcomes (Chan et al., 2008; Nielsen & Einarsen, 2012; Sojo, Wood, & Genat, 2016; Wilness, Steel & Lee, 2007). Workplace sexual harassment has been associated with low job satisfaction, lower organizational commitment, withdrawing from work and negative mental health outcomes (Chan et al., 2008; Nielsen & Einarsen, 2012; Sojo et al., 2016; Wilness, Steel & Lee, 2007). Workplace sexual harassment has even been associated with severe levels of posttraumatic stress symptoms (Avina & O'Donohue, 2002; Malik & Farooqi, 2014). PTSD is a trauma- and stress related disorder characterized by three core symptoms: re-experience of the traumatic event, avoidance of reminder of the event, and persistent perceptions of current threat (ICD-11, WHO). Symptoms arise following an actual stressor described as an extremely threatening or horrific event or series of events, also known as the diagnostic criteria A. In relation to the association between sexual harassment and PTSD there is disagreement as to

whether sexual harassment adhere to the diagnostic criterion A (Aviná & O'donohue, 2002). Some may argue that sexual harassment does not meet the criteria, because it is rarely life threatening. However, acts of sexual harassment may have significant impact on the victim and pose a threat to victims' physical, mental and sexual integrity as well as victims' financial position, because the harassment can have negative effects on victims' ability to work (Aviná & O'donohue, 2002; Gutek & Koss, 1993; Koss, 1990). Thus, in most recent studies sexual harassment was considered a type of workplace violence equal to physical violence and assaults (Nyberg et al., 2020). However, more studies are needed to confirm the elevated risk of PTSD following workplace sexual harassment.

HARASSMENT FREQUENCY, SOURCE AND WORKPLACE SOCIAL CAPITAL

Whether or not sexual harassment has a potential traumatizing effect may depend upon the specific situational factors. Acts of sexual harassment can range from exposure to a single inappropriate remark, to unwanted sexual touching or work environments with repeated instances of sexual comments or sexual jokes (Aviná & O'donohue, 2002). Incidences of workplace rape or rape assault have also been reported. The risk of traumatization may depend on the specific acts of sexual harassment. Additionally, some studies have suggested that the source of sexual harassment is important to consider with identification of more negative health outcome following sexual harassment from a colleague or leader than from a client/patient (Friborg et al., 2017; Hogh, Conway, Clausen, Madsen & Burr, 2016). Thus, the risk of developing PTSD following workplace sexual harassment may be significantly dependent on situational factors, for instance frequency of exposure and source of harassment.

Also, contributions from studies into workplace violence show that intergroup relations or the workplace's social capital may moderate the negative effect of violence and potentially also workplace sexual harassment (Driller et al., 2011; Kouvonen et al., 2008; Oksanen et al., 2008, Török et al., 2020). Workplace social capital is broadly defined as the resources found in the social relations between the people at the workplace (Oksanen et al., 2008; Borg, Mateu & Clausen, 2014). More specifically, the concept of workplace social capital includes a focus on the ability to work together (e.g. prioritizing what tasks are important and how they should be solved as well as helping each other), the degree of trust in the social relations (e.g. trusting the help and professionalism of colleagues or being able to share problems experienced at work) and fairness within the social relations (e.g. the experience that workers are treated fair and that

problems and differences are solved in a fair manner etc.) (Oksanen et al., 2008; Borg et al., 2014). Borg and colleagues (2014) further suggested dividing the concept in different dimensions, for instance focusing at 1) the bond between the workers, and 2) the linking between the workers and the leaders at the workplace. Workplace social capital is a modifiable organizational factor that may be of special interest in prevention strategies on sexual harassment in social educators and similar working populations. In many health care professions, harassment comes from patients or clients and the frequency of harassment may be difficult to reduce. Thus, modifiable work environment factors that can alleviate the negative health effect following harassment is of special interest and important to address. Workplace social capital may be such a factor. Several studies have shown that workplace social capital reduces the risk of mental health problems among employees (Driller et al., 2011; Kouvonen et al., 2008; Oksanen et al., 2008, Török et al., 2020). A work environment based on a high level of workplace social capital may have an alleviating effect of the emotional strain following sexual harassment. Here, a high level of trust would allow workers to share their problems when experiencing sexual harassment and might increase the sense of security, which is important regarding the development of PTSD symptoms (Pihl-Thingvad et al., 2019). Also, an organization with a high level of fairness, and ability to work together, could be expected to find solutions following acts of sexual harassment. For instance, there could be new and better ways to interact with transgressing patients or to initiate a fair process against co-workers or leaders who act as perpetrators, both of which could lead to a higher sense of security in the victims of sexual harassment and minimize the detrimental health effects. However, these suggestions are purely hypothetical as no previous studies have investigated the potential buffering effect of social capital against the development of trauma-related negative mental health outcomes following sexual harassment.

THE PRESENT STUDY

More studies are needed to confirm the risk of elevated PTSD symptoms following exposure to workplace sexual harassment. Also, the possible effects of situational factors such as harassment source and frequency, which can influence the severity of the harassment need to be examined further (Chan et al., 2008; Gutek & Koss, 1993). In addition, a modifiable workplace factor, such as workplace social capital, could act as a protective factor post incident, and is thus of interest for prevention initiatives within the organizations. Since no earlier studies on workplace sexual harassment have done so, workplace social capital needs examination. Together, the

study findings may support victims of sexual harassment and help to understand under which conditions PTSD symptoms are likely to occur and to explore potential preventive factors of the work environment.

The aim of the present study was to investigate the association between workplace sexual harassment and PTSD symptoms in a sample of Danish social educators ($n = 3153$). We hypothesized that 1) workplace sexual harassment would be positively associated with PTSD symptoms, 2) frequency of workplace sexual harassment would be positively associated with PTSD symptom severity, 3) PTSD symptom severity would be higher for social educators harassed by their colleagues or leaders compared to educators harassed by their clients, and 4) workplace social capital would decrease the positive associations between workplace sexual harassment and PTSD symptoms, thus acting as a buffering moderator between harassment and PTSD symptoms.

METHODS

PROCEDURE AND PARTICIPANTS

Data for the present study was collected as part of the Everyday Violence project, based on a cohort of social educators working with disabled adults in Denmark (Pihl-Thingvad, 2019). The original study was designed to assess the negative health effects of repeated exposure to workplace violence. The present study was based on the cross-sectional data gathered at baseline, which included measures of sexual harassment. Data was collected in April 2016. All members of the Union of Social Educators working with disabled adults were invited to participate in the baseline study. In total, 12,070 participants were invited by e-mail. Upon informed consent, they received an electronic survey measuring a range of factors relevant for mental and somatic health, sociodemographic and lifestyle factors, exposure to workplace threats and physical violence as well as general factors in the working environment including sexual harassment. Of all invited, 3,611 participants agreed to participate in the project (29%). In the present study, we excluded all participants who were in a leadership position ($n = 297$) because the survey was designed to measure workers' perception of their work environment. The work characteristics of leaders may differ markedly from workers for example, regarding access to support, position of power and exposure to violence, and the study was not designed to include these differences. We also excluded those who were not in a current employment ($n = 20$), and those who did not have Danish as their native language ($n = 141$). The latter was excluded because it poses a problem with validity of measurement using scales validated in Danish. The total sample thus consisted of 3,153 social educators. A comparison between the total target sample and the study sample in terms of background information appears later in the Results section.

MEASURES

OUTCOME VARIABLES

Symptoms of PTSD were measured using the six symptom items from the International Trauma Questionnaire (ITQ) (Cloitre et al., 2018). The questionnaire is validated in Danish (Vang et al., 2021), and is based on the definition of PTSD in the International Classification of Diseases, 11th Revision (Cloitre et al., 2018). The PTSD symptom scale measures the three symptom clusters: re-experiencing (e.g. *Having powerful images or memories that sometimes come into your mind in which you feel the experience is happening again in the here and now?*), avoidance (e.g. *Avoiding internal reminders of the experience [for example, thoughts, feelings, or physical sensations]?*), and sense of current threat (e.g. *Being "super-alert", watchful, or on guard?*). Each cluster is measured with two items that is answered on a 5-point Likert scale from 0 = *not at all* to 4 = *extremely*. In the present study, the overall level of symptomatology was of interest, why the sum score was calculated as a measure of overall severity of PTSD symptoms.

EXPLANATORY VARIABLES

The explanatory variable of primary interest was workplace sexual harassment, measured with the Copenhagen Psychosocial Questionnaire II item on sexual harassment (COPSOQ, Pejtersen, Kristensen, Borg, & Bjørner, 2010): "*During the last 12 months have you received unwanted sexual attention at your workplace?*" Answers were graded in a Likert-scale (0 = *no*, 1 = *yes, once in a while*, 2 = *yes, monthly*, 3 = *yes, weekly*, 4 = *yes, daily*). If a confirmatory response was given, respondents were asked to state by whom they were harassed, with the following categories (1 = *colleague*, 2 = *leader*, 3 = *sub-ordinate*, 4 = *client*). The subordinate group was not relevant in the present sample. Three operationalizations of sexual harassment were used. First, the overall effect of sexual harassment was assessed using a binary measure of sexual harassment (exposed vs. non-exposed). Second, the effect of frequency of exposure was assessed. Sexual harassment was coded into three categories such as, non-exposed, low exposure = *once in a while*, and high exposure = *daily, weekly or monthly*. Finally, exposure was coded based on type of perpetrator, such as, *non-exposed, exposed by clients, and exposed by colleague/leader*. Few cases reported exposure from both client and a colleague/leader. In those cases, we chose to assign the case to the group of sexual harassment from a colleague/leader, based on the hypothesis that harassment from a colleague/leader may be more distressing than harassment from a client.

COVARIATES

Covariates included *age* measured as whole years and *gender* measured as male/female. *Lifetime civil trauma* was included, because studies have shown that previous

history of traumatic life events increases risk of traumatic reactions later in life (Tortella-Feliua et al., 2019). Lifetime civilian trauma exposure was measured using the scale from the National Comorbidity Study (Kessler et al., 1995) containing 14 critical life events that is known to increase risk of traumatic reactions (e.g., *being threatened with a weapon or being physically abused*) and one item asking about other critical and overwhelming incidents. The answers were summed to constitute a scale ranging from 0 to 15 with a higher score indicated more lifetime civilian trauma exposure.

Somatic health was included since it has been associated with general mental health disorders (Chapman, Perry & Strine, 2008). Somatic health was measured with the checklist from the Danish “Working Environment and Health” survey (National Research Center for the Working Environment, 2016), asking if the respondent had been or where presently being treated for 10 of the most widespread diseases in western society (e.g. *cardiovascular diseases or diabetes*), including an additional item asking about other serious or chronic diseases. The answers were summed and treated as a scale from 0–11 with a higher score indicating several other prevalent somatic diseases.

Workplace violence and threats were included because violence and threats of violence are both associated with PTSD symptoms and is known to be highly prevalent in the work of social educators (Pihl-Thingvad et al., 2019). Workplace violence and threats of violence was measured with the two items on threats and violence from COPSOQ II: “*Have you been exposed to physical violence at your workplace during the last 12 months?*” and “*Have you been exposed to threats of violence at your workplace during the last 12 months?*”. Both items were answered on a 5-point Likert like scale (5 = *Yes, daily*; 4 = *Yes, weekly*; 3 = *Yes, monthly*; 2 = *Yes, a few times*; 1 = *No*). COPSOQ II is validated in several populations across different nationalities (The COPSOQ International Network, 2022).

EFFECT MODERATORS

Workplace social capital was considered as a possible moderator between workplace sexual harassment and PTSD symptoms because several studies have indicated the protective effect of workplace social capital on psychological stress and emotional strain (Driller et al., 2011; Kouvonen et al., 2008; Oksanen et al., 2008). Two scales from The Danish Workplace Social Capital Instrument (Borg et al., 2014) was used, such as, the scale for coworker social capital (bonding social capital) and social capital between coworkers and the local management (linking social capital). Bonding social capital consists of four items (e.g. *in my workgroup we agree upon what is most important in our job tasks, or in my workgroup there is a feeling of cohesion and support*). Linking social capital consists of three items (e.g. *the relation between my workgroup and our leader is of mutual trust and respect*). Both scales are answered on a

Likert scale from 0 = *never* to 4 = *always*. Each scale was summed and normalized to a 0 to 100 scale according to the manual. The scale has been validated in different Danish work populations (Borg et al., 2014).

DATA ANALYSES

Descriptive statistics were calculated for all variables as either number and percentages or means and standard deviation. To assess sampling bias, respondents and non-respondents were compared on age, using independent sample t-test as well as on main area of work (mentally/physically disabled vs. drug abuse/psychiatry) and gender (male/female) using the chi-square statistics. Further, we assessed the prevalence of sexual harassment in the study sample in comparison to the random sample of special educators from the 2016 Danish national workers cohort (Work Environment in Denmark, 2016) regarding exposure to sexual harassment.

Main analyses were conducted with generalized linear models using IBM SPSS version 28.0. To address hypothesis 1, a generalized linear model was computed with sexual harassment as a binary predictor (exposed vs. not exposed) and PTSD-symptoms as outcome. The analysis was adjusted for age, gender, and somatic diseases, lifetime civilian trauma as well as threats and violence at work. Two sets of stratified analysis were then conducted to address hypothesis 2 and 3. One with predictor set as frequency of sexual harassment such as, no-, low- and high exposure (hypothesis 2), and one with predictor set as perpetrator of sexual harassment such as, no- exposure, client as perpetrator and colleague/leader as perpetrator (hypothesis 3). Both models had PTSD-symptoms as outcome and were adjusted for age and gender, as well as somatic diseases, lifetime civilian trauma and threats and violence at work. Finally, hypothesis 4 was tested using moderation analysis. Based on the model with sexual harassment set as binary predictor, workplace social capital linking and bonding were entered separately including a nested interaction term Social capital * Sexual harassment.

All models were completed as main effect models, using the Gen-lin function, with maximum likelihood estimation of parameters and model-based estimator of covariance matrix. Bootstrap was conducted with 5,000 re-samples, to account for the skewed outcome measure. Model effects were calculated with Wald chi-square statistics and 95% confidence intervals, and the Bonferroni adjustment for level of significance.

ETHICS

According to Danish law, survey-based studies are not subject to approval by the Scientific Ethics Committee.

Respondents were invited through an e-mail that described the purpose of the study and storage and usage of their data, in adherence to Danish data protection law. Upon written consent, respondents were directed to the survey via a personalized link, which generated a unique id, which was only accessible to the data managers. The research group had access to a pseudo-anonymized dataset used for the analyses. All study results are presented as overall results, and the respondents are fully anonymized to everyone outside the research team. The project procedure for treatment of sensitive data were approved by the Danish Data Protection Agency, journal #15/96549.

RESULTS

SAMPLING BIAS

Non-respondents and respondents were comparable in regards to gender (non-respondents: male 22% female 80% vs. respondents: male 21%, female 79%) and area of work: (non-respondents: disabled 76% and psychiatry/drug abuse 24% vs. respondents: disabled 78% and psychiatry/drug abuse 22%), as also seen in no statistically difference between groups on gender and

area of work $\chi^2_{\text{gender}}(1) = 1.2, p = .556$ and $\chi^2_{\text{area of work}}(2) = 1.1, p = .568$. Regarding age groups, respondents and non-respondents were comparable but with a tendency toward higher prevalence of elder respondents within the study sample (non-respondents: 9% 20–30 years, 23% 30–40 years, 28% 40–50 years, and 40% 50 years and above, vs. respondents: 6% 20–30 years, 18% 30–40 years, 29% 40–50 years, and 47% 50 years and above). Also, there was a statistically significant difference in mean age between groups, $t(12069) = -3.9, p < .001$. Therefore, age was kept in all models as a covariate even if it did not contribute significantly to the model effects. In comparison to the random sample of social educators in the 2016 Danish worker cohort ($N = 412$) ([Work Environment in Denmark, 2016](#)), the study sample showed a markedly higher prevalence of sexual harassment (Danish worker cohort: 11.9% vs. study sample: 21.9%).

DESCRIPTIVE STATISTICS

[Table 1](#) displays descriptive statistics showing that the sample consists mainly of females (79.3%) with a mean age of 48 years. The prevalence of sexual harassment was nearly 22% exposed within the recent year.

VARIABLES		TOTAL SAMPLE	NON EXPOSED	EXPOSED
Sexual harassment prevalence		21.9% (n = 691)	–	–
PTSD symptoms (M, SD)		3.3 (4.1)	3.0 (3.9)	4.6 (4.5)
Gender	Male	20.7% (n = 652)	23.3% (n = 566)	11.7% (n = 81)
	Female	79.3% (n = 2501)	76.7% (n = 1858)	88.3% (n = 610)
Age (M, SD)		48.04 (9.8)	48.9 (9.5)	44.9 (10.1)
Somatic diseases (M, SD)		0.6 (0.8)	0.6 (0.8)	0.7 (0.85)
Lifetime civil trauma (M, SD)		2.5 (1.9)	2.4 (1.9)	2.8 (2.0)
Workplace Violence (M, SD)		0.6 (0.9)	0.5 (0.9)	0.75 (1.0)
Workplace Threats (M, SD)		1.0 (1.1)	0.9 (1.1)	1.5 (2.8)
Linking social capital (M, SD)		63.2 (23.6)	64.4 (23.5)	59.1 (23.8)
Bonding social capital (M, SD)		67.5 (18.2)	68.5 (17.7)	64.2 (19.4)
Perpetrator	Non exposed	76.9% (n = 2424)	–	–
	Client	20.3% (n = 640)	–	7.4% (n = 51)
	Colleague/leader	1.6% (n = 51)	–	92.6% (n = 640)
	Missing	1.2% (n = 38)	–	–
Frequency	Non exposed	76.9% (n = 2424)	–	–
	Low exposure	15.5% (n = 490)	–	79.9% (n = 490)
	High exposure	6.2% (n = 196)	–	29.1% (n = 201)
	Missing	1.2% (n = 38)	–	–

Table 1 Descriptive Statistics.

Note: Presented with percentage (%), number of respondents (n) or Mean (M) and standard deviations (SD) across the total sample as well as differentiated between those exposed for sexual harassment (Exposed) and those not exposed to sexual harassment (Non-exposed).

MAIN ANALYSES

Main analyses showed that sexual harassment was significantly associated with level of PTSD symptoms even when adjusted for other well-known risk factors of PTSD (see Table 2). In the stratified analysis, an exposure – response pattern was indicated in frequency of exposure. The high exposure group had higher effect sizes than the low exposed group even when adjusted for multiple factors (see Table 3).

Furthermore, both of the groups exposed had a higher mean of PTSD symptoms compared to the non-exposed group (see Table 5). The high exposed group also reported

statistically significantly higher levels of PTSD symptoms compared to the low exposed group (see Table 5).

A similar pattern emerged when assessing exposure based on perpetrator source. Both groups of perpetrators were associated with staff reporting statistically significant higher levels of PTSD symptoms compared to non-exposed staff (see Table 4). When comparing groups of perpetrators, sexual harassment from colleagues and leaders was associated with higher levels of PTSD symptoms compared to both non exposed and those exposed by clients, although this difference was not statistically significant (see Table 5).

MODEL SPECIFICATION		LIKELIHOOD RATIO- $\chi^2(7) = 581.3, P < .001$			
		B	STD. ERROR	WALD - χ^2	P
Intercept		0.2	0.4	0.2	.637
Sexual Harassment	Exposed	0.8	0.2	21.4	<.001
	Non exposed (ref)	-	-	-	-
Age		.0	.0	1.8	.178
Gender	Female	0.6	0.2	10.7	.001
		-	-	-	-
Violence		0.2	0.1	3.6	.056
Threats		1.1	0.1	215.1	.000
Lifetime civil trauma		0.2	0.0	29.1	<.001
Somatic disease		0.5	0.1	41.2	<.001

Table 2 Association between Exposure to Sexual harassment as a dichotomous measure yes/no and PTSD symptoms. Note: Presented with exposed and non-exposed in two levels of adjustment, with overall model specification and parameter estimates: Beta coefficient (B) and standard error (Std. error), Wald chi-square test statistics (Wald - χ^2) and level of significance (p).

MODEL SPECIFICATION		LIKELIHOOD RATIO $\chi^2 (8) = 584.6, P > .001$			
		B	STD. ERROR	WALD - χ^2	P
Intercept		0.2	0.4	0.2	.648
Sexual Harassment	High exposed	1.2	0.3	17.8	<.001
	Low exposed	0.6	0.2	10.9	<.001
	Non exposed (ref)	0	-	-	-
Age		0.0	0.0	2.0	.157
Gender	Female	0.6	0.2	10.8	.001
	Male				
Violence		0.2	0.1	3.3	.071
Threats		1.1	0.1	211.3	<.001
Lifetime civil trauma		0.2	0.0	28.4	<.001
Somatic disease		0.5	0.1	41.1	<.001

Table 3 Association between low-medium and high frequency of Sexual Harassment and PTSD symptoms. Note: Presented with low-medium and high exposed in two levels of adjustment, with overall model specification and parameter estimates: Beta coefficient (B), standard error (Std. error), Wald chi-square test statistics (Wald - χ^2) and level of significance (p).

MODEL SPECIFICATION		MODEL 2			
		LIKELIHOOD RATIO χ^2 (8) = 580.6, P > .001			
		B	STD. ERROR	WALD $-\chi^2$	P
Intercept		0.2	0.4	0.2	.703
Sexual Harassment	Perpetrator colleague/leader	1.6	0.5	8.9	.003
	Perpetrator client	0.7	0.2	16.2	<.001
	Non exposed (ref)	0	-	-	-
Age		0.0	0.0	2.2	0.136
Gender	Female	0.6	0.2	12.1	<.001
	Male (ref)	0	-	-	-
Violence		0.2	0.1	4.3	.038
Threats		1.1	0.1	211.3	<.001
Lifetime civil trauma		0.2	0.0	27.4	<.001
Somatic disease		0.5	0.1	27.4	<.001

Table 4 Association between Source of Sexual Harassment and PTSD symptoms.

Note: Presented with difference in perpetrators such as colleague/leader, client and non-exposed in two levels of adjustment, with overall model specification and parameter estimates: Beta coefficient (B), standard error (Std. error), Wald chi-square test statistics (Wald $-\chi^2$) and level of significance (p).

	MEAN/MEAN DIFFERENCE	95% CI	P
Estimated mean high exposed	5.6	[5.0-6.2]	-
Estimated mean low exposure	4.1	[3.7-4.5]	-
Estimated mean non exposure	2.9	[2.7-3.1]	-
Estimated mean difference high exposed vs. non exposed	2.7	[2.0-3.4]	<.001
Estimated mean difference low exposed vs. non exposed	1.2	[0.7-1.7]	<.001
Estimated mean difference high exposed vs. low exposed	1.5	[0.6-2.3]	<.001
Estimated mean perpetrator colleague or leader	4.6	[3.5-5.6]	-
Estimated mean perpetrator client	3.7	[3.4-4.0]	-
Estimated mean non exposed	3.0	[2.8-3.2]	-
Estimated mean difference perpetrator colleague or leader vs. non exposed	1.6	[0.4-2.2]	.009
Estimated mean difference perpetrator client vs. non exposed	0.7	[0.3-1.1]	<.001
Estimated mean difference perpetrator colleague or leader vs. perpetrator client	0.9	[-0.4-2.2]	.314

Table 5 Mean Level of PTSD symptoms and Difference in Estimated Means Among Stratified Groups of Exposure to Sexual Harassment.

Note: Presented as estimated overall mean and mean differences with 95% confidence intervals (CI) and Bonferroni adjusted level of significance (p). Adjusted for age, gender, workplace threats and violence, somatic disease and lifetime exposure for traumatic events outside of work.

Finally, both linking and bonding workplace social capital was inversely associated with level of PTSD symptoms, but no moderation effect was found in interaction with sexual harassment, Workplace social capital linking (WSC-L) model specification: Likelihood ratio χ^2 (9) = 719.0 p < .001. WCS-L Parameter estimates: $B_{(WSC-L)} = -0.03$ (Std. error = .0.0), Walds χ^2 (1) = 23.3, p < .001. Interaction Parameter estimates: $B_{(WSC-L *sex. haras.)} = 0.0$

(std. error = 0.0), Walds χ^2 (1) = 0,0 p = 821. Workplace social capital bonding (WSC-B) model specification: Likelihood ratio χ^2 (9) = 676.0 p < .001. WSC-B parameter estimates: $B_{(WSC-B)} = -0.04$ (Std. error = 0.0), Walds χ^2 (1) = 16.0, p < .001. Interaction parameter estimates: $B_{(WSC-B *sex. haras.)} = 0.0$ (std. error = 0.0), Walds χ^2 (1) = 0.3, p = 616. Thus, workplace social capital did not moderate the association between harassment and PTSD symptoms.

DISCUSSION

This study investigated the effect of workplace sexual harassment on PTSD symptoms in a sample of Danish social educators. We identified that 22% of the sample reported experiences of sexual harassment. In total, 6.2% of the sample reported being harassed frequently (every month, week or daily) and 15.4% reported having experienced harassment once in a while. This result supports the fact that sexual harassment continues to be a problem in many workplaces (Jenner et al., 2019; Thurston et al., 2019).

Supporting hypothesis 1, we replicated the finding that exposure to workplace sexual harassment was significantly associated with PTSD symptoms even when adjusting for other well-known risk factors such as, lifetime civil trauma and workplace violence and threats. These findings are consistent with existing literature confirming that exposure to workplace sexual harassment may be traumatizing and associates with increased PTSD symptoms (Avina & O'Donohue, 2002; Koss, 1990; Malic & Farooqi, 2014). Also, supporting hypothesis 2 and consistent with previous findings (Malic & Farooqi, 2014), our results indicated a dose-response relationship, where a higher level of exposure to sexual harassment was associated with increased severity of PTSD symptoms. This finding supports the theoretical assumption that repeated exposure to sexual harassment poses a threat to victims' physical and sexual integrity, although the abusive act may not be life threatening (Koss, 1990). The results partly supported hypothesis 3, as we identified that groups exposed to sexual harassment from a colleague/leader reported higher levels of PTSD symptoms compared to employees exposed by clients and those who were non-exposed, but the difference was only statistically significant compared to the group of non-exposed. This indicates that the power relation between harasser and victim is of importance to the effects of the sexual harassment, as suggested by Lenhart (2004). Social educators may experience to have a stronger position of power in relation to clients and therefore, the harassment is experienced as less harmful when coming from a client compared to a colleague or leader. Also, the social educator may interpret the harassment from the client as less intentional and with no intention to cause harm, as clients of this sample had mental and physical disabilities. Victims of sexual harassment may also have a previous history of work collaboration with leaders or colleagues, which may influence the ability to seek out support or increase the perceived risk of negative evaluations from other colleagues. Overall, these findings indicate that situational factors such as the frequency of the harassment and the harassment source may have a significant effect on the association between workplace sexual harassment and PTSD symptoms. In practice, it is therefore important to avoid repeated exposure to sexual harassment at the workplace. When working

with disabled clients it may not be possible to reduce the harassing acts and thus it may be necessary to regroup employees or rotate in functions to avoid a high dose exposure of sexual harassment on the same employee. Furthermore, the importance of having a procedure at the workplace of how and where to report exposure of sexual harassment from coworkers is important as also indicated in previous studies (Papantoniou, 2021).

The interpersonal relations at the workplace may have a significant preventive effect. We did find a significant inverted association between workplace social capital bonding and linking and the level of PTSD symptoms. This indicates that linking and bonding workplace social capital may have a protective effect on PTSD symptoms in general. Thus, workplace social capital appears to have an important effect in terms of preventing mental health problems among employees as also shown in other studies (Driller et al., 2011; Kouvonen et al., 2008; Oksanen et al., 2008, Török et al., 2020). Surprisingly, though, we were unable to identify a significant buffering effect on PTSD symptoms following sexual harassment (contrasting hypothesis 4). Thus, results of this study indicate that a known protective factor such as, workplace social capital may not be effective in terms of preventing the negative effects of sexual harassment on employee's mental health. Feelings of guilt and shame often accompany sexual assaults and influences the person's willingness to disclose their experiences with colleagues and leaders, and thus reduces the employee's possibility to seek support at the workplace (Saraiya & Lopez-Castro, 2016). The findings of this study, thus, may be indicative of shame and guilt following sexual harassment reducing the workers readiness to seek out available support at the workplace even though the working relations may generally be characterized by a high level of cohesion, trust, and fairness. As such the results indicate that reactions to sexual harassment is less affected by social relations than other occupational strains and may pose a problem to general preventive strategies that often involves strategies of social support based on formal disclosure or reporting. To our knowledge, no previous studies have explored the protective aspect of workplace social capital in relation to workplace sexual harassment. We need more studies to reveal the barriers behind this effect and to uncover why victims of sexual harassment may not seek or benefit from the available social network at the workplace.

LIMITATIONS AND CONCLUDING REMARKS

Findings of the present study need to be considered in the perspective of some study limitations. The results are based on a cross-sectional study design and thus the temporal relationship between exposure and symptoms

is not confirmed. A longitudinal study design is required to confirm the temporal causality between workplace sexual harassment and PTSD symptoms. Further, even though we found a significant linear relationship between workplace sexual harassment and PTSD symptoms, our study did not include PTSD as a diagnosed disorder or a symptom disorder threshold for PTSD. Therefore, studies need to confirm that link between sexual harassment and the PTSD disorder and not only levels of PTSD symptoms as in this study.

In addition, although we set out to investigate the effect of some situational factors surrounding sexual harassment exposure (e.g., frequency and harassment source), we only used a single question to examine exposure to workplace sexual harassment. Thereby, we are unable to examine the individual effects of different types of workplace sexual harassment such as exposure to a verbal comment, a sexist joke, or unwanted physical touching. Also, workers may have different perceptions of what constitutes sexual harassment and studies have shown that prevalence rates of workplace sexual harassment vary according to the methodology of investigating the phenomena. Research has shown that using a single question produce a lower incident rate of sexual harassment as workers often only use the label sexual harassment in relation to the more severe types of acts (Timmerman & Bajema, 1999). Accordingly, the risk of underreporting workplace sexual harassment is increased in this study.

Furthermore, common method bias might affect results from the present study since data relied on self-report measures only. It is a well-known argument that use of common method data might inflate associations between measures (Podsakoff et al., 2013). However, recent discussions point to the fact that very little is known on how this type of bias affects the statistical results, and whether it favors the null hypothesis (George & Pandey, 2017). More importantly, both sexual harassment and PTSD symptoms are partly intra psychic phenomena, why self-report measure is pivotal to understand how these phenomena might affect each other. It is important that future studies are based on designs that minimizes the risk of common method bias while at the same time secure the subjective experience. This could for example be in a study design based on exposure measures with more explicit and precise descriptions of types of sexual harassment combined with clinical assessment of PTSD symptomatology.

Finally, there were some indications in our analyses on sample bias that the sample might not fully represent younger employees. Younger employees might be differently exposed and react differently to sexual harassment. Also, it is worth mentioning the exclusion of non-native speakers who might be differently exposed to sexual harassment than their native colleagues and, more importantly, are not able to tap into the network of workplace social relations in the same way as their native colleagues. Our study was not able to assess these

potential differences and further studies focusing on different cultural and ethnic groups within the workplace, are important to secure workplace prevention measures for all groups of workers.

Despite these limitations, the results of the present study support the effect of workplace sexual harassment exposure on PTSD symptoms. Higher frequency of workplace sexual harassment was an aggravating circumstance and repeated exposure to sexual harassment should be avoided. This is an important consideration in work function where harassment from for instance disabled clients is difficult to lower, and thus regrouping or job rotations are recommended to avoid a high dose of exposure on the same employee. There were also indications that harassment from a colleague or leader was an aggravating circumstance and associated with a higher level of PTSD symptoms following exposure to workplace sexual harassment. Power positions, perceptions of intentionality, previous work history and the perceived risk of negative evaluations from other colleagues may be potential explanations for this finding. Having an organized procedure at the workplace of how and where to report workplace sexual harassment from a colleague or leader is recommended. Also, an organizational culture with the possibility of disclosure and support following sexual harassment seems to be important. Future studies, however, need to uncover barriers that prevent employees from seeking and benefitting from available social support at the workplace following exposure to workplace sexual harassment. Prospective studies are needed in the area, and it is recommended to use a multi-item questionnaire to examine workplace sexual harassment as this reduces the risk of underreporting.

COMPETING INTERESTS

The authors have no competing interests to declare.

AUTHOR CONTRIBUTIONS

NBH and JPT developed the original idea for the study and discussed the idea with MLV and MBL. JPT conducted the statically analyses. The manuscript was drafted by NBH and followed by a critical reading from MVL, MBL and JPT. Thus, all authors have read and approved the manuscript and are responsible of its accuracy.

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