

# WORKPLACE BULLYING AND POST-TRAUMATIC STRESS SYMPTOMS AMONG FAMILY PHYSICIANS IN LITHUANIA: AN OCCUPATION AND REGION SPECIFIC APPROACH

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## Abstract

**Objectives:** The study investigated associations between workplace bullying and post-traumatic stress symptoms as compared to and controlled for associations between the latter and other psychosocial stress factors at work and in everyday life. The study employed a representative sample of Lithuanian family physicians, hence investigated a particularly resourceful occupational group in a geographical region earlier found to have a high risk context for exposure to bullying at work. **Material and Methods:** With a response rate of 89.2%, a total of 323 family physicians filled in an anonymous questionnaire on workplace bullying, post-traumatic symptomatology (IES-R), other psychosocial stressors at work and in everyday life, personal health resources (sense of coherence), behavioral characteristics and demographic variables. The statistical software SPSS 14.0, Windows was used in the analysis. Associations were tested using a multivariate logistic regression analysis. **Results:** A high prevalence of bullying was found among family physicians in Lithuania, with 13% of them experiencing severe workplace bullying and 17.3% experiencing more occasional incidents of bullying. The prevalence of post-traumatic stress symptoms was also high with 15.8% scoring above the standardized cut-off thresholds for post-traumatic stress disorder. The odds ratio (OR) of severe bullying for post-traumatic stress after adjustment for age and gender was 8.05 (95% confidence intervals (CI): 3.80–17.04). In the fully adjusted model it increased to 13.88 (95% CI: 4.68–41.13) indicating cumulative effects of all the investigated stressors. **Conclusions:** Workplace bullying is particularly prevalent among Lithuanian family physicians, as are the symptoms of post-traumatic distress. Strong associations between post-traumatic stress and exposure to severe bullying indicate that bullying is a significant source of mental health.

## Key words:

Physicians, Sense of coherence, Bullying, Post-traumatic stress, Occupational, Psychosocial

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## INTRODUCTION

Over the last decade or two, a range of studies have shown that victimisation, caused by extensive exposure to bullying and harassment while at work, is related to elevated levels of stress symptoms in those exposed, including depressive and psychosomatic symptoms [1,2] and even symptoms of a post-traumatic nature. In a critical incident, immediate stress reactions enable the victims to adequately deal with these situations. However, a prolonged stress reaction, e.g., produced by ongoing exposure to workplace bullying, has been found to be particularly detrimental to the victims' health and well-being.

A sudden, unexpected and potentially harmful event or series of such events with a strong emotional impact sufficient to overwhelm the usually effective coping skills of an individual, such as exposure to ongoing workplace bullying, may cause significant and critical psychological stress in those exposed [3], resembling that of a traumatic experience, possibly leading to a range of post-traumatic stress symptoms. Post-traumatic stress involves repeated and intrusive memories related to the trauma (thoughts, dreams/nightmares), avoidance of situations that are reminders of the trauma, and hyperarousal (irritability, reduced concentration, exaggerated startle response) [4].

A range of studies have shown such symptomatology among targets of workplace bullying [1,2,5]. Yet, majority of the studies have employed self-selected samples of severely affected victims recruited from newspaper ads, clinical populations or victims recruited from peer support groups [2,5], with community samples still being rare in this research field. Furthermore, most studies have been conducted in geographical areas where bullying is found to be rather infrequent, e.g., in the Scandinavian and other North European countries [6,7]. Hence, neither do we have knowledge on the prevalence of post-traumatic stress symptoms among victims of bullying in general, nor we know whether it is only prevalent among a certain subgroups of victims. In addition, we do not know if the

relationship between exposure to bullying and its theorized outcomes are the same in cultures where bullying is scarce and in cultures where bullying is abundant and constitutes a more integrated part of social interactions in organisations [7].

Furthermore, victims of workplace bullying, in comparison with the non-victims, more often claim to suffer from other stressful and potentially traumatic events both at work and in their everyday life. Research has also shown that victims of workplace bullying generally describe their psychosocial work environment and their job characteristics as far more negative and stressful than other employees do [8]. Hence, the present study investigates the relationship between workplace bullying and symptoms of post-traumatic stress as compared to and controlled for the cumulative effect of other potentially stressful events at work and in the subjects' daily life, employing a representative community sample of Lithuanian family physicians. The investigated sample allows for a more occupation specific approach to the study of workplace bullying and its outcomes [9], as well as it is an opportunity to investigate the relationship between victimization from bullying and its outcomes in a cultural context where bullying is claimed to be particularly prevalent [7,10].

Workplace bullying, that is, systematic and long term exposure to aggression and social exclusion by other organisation members, is prevalent in contemporary working life [11], at least in some regions of the world [7]. Typically, victims of bullying are exposed to harsh treatment by their tormentors over a long period of time and in a situation where they initially or at least eventually experience great difficulties defending themselves from these ongoing attacks and instances of social exclusion, with the result that they gradually become even more victimized and stigmatized. Studies have shown that this may go on for months and years and tend to become as something of a continuous shock to those exposed [12], with potentially traumatic effects on them [1].

At the beginning of the process the negative behaviours are often indirect and subtle being difficult to recognize and confront, often leading to much confusion and anxiety in those exposed. The next phase tends to involve more direct and openly aggressive acts, often leaving the target humiliated, ridiculed and increasingly isolated [13], with the process sometimes resulting even in a situation with acts of physical abuse or at least threats of such abuse. Research has shown that work situation of the victims may become so difficult that they finally either choose to leave work, or they are forced out of the workplace by means of dismissal or redundancy [14].

Health care workers seem to be more at risk of workplace bullying as compared to other occupations, yet majority of the data so far come from the studies of nurses [15,16]. Some studies investigating bullying arising from patients, colleagues and supervisors among medical doctors during training, residents, emergency physicians, ambulance personnel [17], young doctors and specialists with long career experience exist; including studies conducted in the United States [18–21], in some European countries [22–25] as well as in Japan [26]. Harassment and abuse of family physicians in the workplace by patients or colleagues is also an emerging issue in health care environment in Canada [27,28], USA [29], and Australia [30].

Similar studies in the former eastern European countries, after transition from Soviet republics to market economies, are scarce, even though studies on variations of workplace bullying around the globe concluded that the risk of such problems is particularly high in these countries. It is so due to particular climate-economic conditions of the regions, which are characterized by a rather low wealth in the population and harsh climatic conditions with warm summers and particularly cold winters [7]. In a Polish study, 19% of doctors working in an outpatient setting had experienced acts of disrespectful behaviour, such as being yelled at, with another 1% being subjected to more severe abuse, including assaults and being hit [31].

A representative study on teachers from Lithuania showed that as many as 25.6% of them felt victimized by bullying while at work during the last 6 months [10], a number substantially higher than the global average estimated to be around 10% [32].

As most of the existing empirical research on workplace bullying interestingly originates in countries with a relatively low frequency and intensity of workplace bullying [7], we are definitely in need for more data on workplace bullying from the regions where bullying may be particularly prevalent and therefore, it may be also something which is less unexpected, more common and therefore, also potentially less traumatic.

Furthermore, as medical doctors are normally seen as a highly resourceful occupational group, often being in charge of their own working situation as well as that of other employees, we may find even less impact of bullying than one would find among other occupational groups. Even more, medical doctors face a range of various, other workplace-related stressors: a diversity of demands, time pressure, long working hours [33], coping with life-threatening situations and compatibility with other demands, e.g., work-home interference [34], which may be as stressful and traumatic as workplace bullying. The proportion of chronically stressed physicians is remarkably consistent over time and amounts up to about 30% of doctors, leading to a reduced health status for those most exposed [35]. The investigations on post-traumatic stress disorder (PTSD) and post-traumatic stress symptoms among doctors are limited, as are the studies on their exposure to bullying. However, studies examining PTSD rates in physicians exposed to the atrocities of war [36,37] and in emergency medicine residents [38] suggest a general high rate of PTSD in these populations. Yet, in a study conducted in rural, remote and medically underserved areas of Canada the authors did look at the symptoms of PTSD among family physicians in regular practice [39]. This study investigated only the prevalence of PTSD (4.4%) and did not

identify specific stressful life experiences, though several respondents commented on the relationships with both other professionals as well as patients as a major source of stress.

In the case of chronic stress, leading to underperformance [40], high satisfaction with career support, high sense of coherence [34,41], occupational self-efficacy [34], and low values regarding being overcommitted to ones work [35] seem to act as protective factors.

### **Aim of the study**

There are multiple reasons for the present study. First of all, the scarcity of empirical findings on the prevalence of bullying and its possible mental health outcomes in the Baltic countries after transition to market liberalism encouraged us to carry out the present study. Another motivator for the study was the lack of community samples in investigations of the relationship between exposure to bullying and PTSD symptoms, as well as the lack of other potential work and life stressors included in such studies. As family physicians constitute a particularly resourceful and independent occupational group with a high risk of other stressors and traumatic events, it is an open question how strong the hypothesized association between victimization from bullying and symptoms of post-traumatic stress may be compared to the association between such symptoms and other potential stressors. Last but not least, research on medical doctors regarding symptoms and antecedents of PTSD is scarce. Therefore, the current study was designed to test a comprehensive model of psychosocial work environment, personality factors, everyday life stressors and the inclusion of post-traumatic stress symptoms as a possible consequence of victimization from bullying. The present study follows up prior calls for more occupation specific [9] and region specific approaches [7] to the study of work-related stress in general and workplace bullying, in particular.

Hence, the aim of the study was to examine the level of post-traumatic stress symptoms among family physicians

in Lithuania and to investigate the associations between workplace bullying and post-traumatic stress taking into account both the possible influence from other psychosocial factors at work (high job demands, low job control, low social support at work) and everyday life (the occurrence of life-threatening events in the past 12 months that were associated with a long-term psychological threat: unemployment, divorce, financial crisis, death of a 1st degree relative or a close friend), the victims' personal health resources (sense of coherence), their health behaviours in terms of leisure physical activity level, smoking, alcohol consumption, and demographic variables (age, gender, living with partner or spouse and having children living at home), which are known to influence health and well-being. In the studies on victimisation from exposure to workplace and subsequent post-traumatic stress symptoms, personal characteristics, e.g., negative affectivity [1] or sense of coherence [2] cannot be disregarded, as people with, e.g., a high sense of coherence are presumed to regain health and remain healthy after experiencing stressors.

## **MATERIAL AND METHODS**

### **Participants**

This representative cross-sectional study was conducted among family physicians in Lithuania based on a total population of 1792 family physicians being employed in Lithuania. Random sampling was performed from the registry of family physicians and 362 family physicians were selected and invited via a letter to participate in the study while attending a professional seminar organized by the Lithuanian University of Health Sciences and the Faculty of Medicine of the Vilnius University. Three hundred and forty physicians agreed to participate in the study. Seventeen of these had job duration of less than 1 year, and were, therefore, excluded.

Data were gathered by means of an anonymous questionnaire distributed among the participants during

the seminar. The questionnaire contained questions on post-traumatic stress symptoms, experiences with workplace bullying, exposure to other psychosocial stress factors at work and in everyday life. Three hundred and twenty three physicians filled in the questionnaire (response rate: 89.2%). The mean age of the participants was 53.54 years (standard deviation (SD): 8.67). Two hundred sixty five (82%) were female and 58 (18%) were male. According to the Lithuanian Health Ministry Registry, male family physicians in Lithuania comprise 17% and female – 83% of all the family physicians. The mean age of the physicians was 52.82. As we did not find gender differences in workplace bullying and post-traumatic stress symptoms' prevalence, the pooled data are presented in the results' section.

### Measures

Impact of Event Scale-Revised (IES-R) is a self-report measure designed to assess current subjective distress for any specific life event [42]. The questionnaire contains 22 items and assesses 3 categories of post-traumatic stress symptoms: hyperarousal, avoidance behavior and intrusive thoughts and/or feelings with reference to the past 7 days. A score over 33 could be regarded as cut off for "probable PTSD case" [43]. The scale was translated into Lithuanian and cultural adaptations were performed. Internal consistency for the total ISE-R scale was high (Cronbach's  $\alpha = 0.95$ ).

Victimization from workplace bullying was measured by a single-item measure of perceived victimization, indicating if the respondents have experienced bullying during the last 6 months and classified it into occasional and severe (weekly and more frequent) bullying [44]. Exposure duration contrasted from 6–12 months to 1–3 years, 3–5 years and more than 5 years with the reference group "never." A list of 22 negative acts were administered to each participant according to the Negative Acts Questionnaire [44], assessing the variety of bullying

behaviours from managers, colleagues and patients (data are not presented in the article).

Psychosocial job stressors were measured with the Swedish version of the Karasek Demand-Control questionnaire. The questionnaire was previously adapted in Lithuanian and consists of 6 items for the assessment of job control, psychological demands (5 items), supervisor support and co-worker support (6 items) [45]. The internal reliability in the present study was 0.73 for job demand, 0.74 for control, and 0.82 for social support as measured by Cronbach's  $\alpha$ .

Sense of coherence was measured by a 3-item version questionnaire. Based on the theoretical reasoning underlying Antonovsky's [46] original instrument, this measure consists of 3 questions, each corresponding to one of the dimensions (i.e., manageability, meaningfulness, and comprehensibility). Previous studies of the 3-item measure have shown satisfactory test-retest reliability ( $\kappa = 0.61$ ) and factor analyses have shown that the items constitute a single factor similar to that of the original sense of coherence measure [47]. The index was evaluated according to the methodology of simplified measurement of a sense of coherence, so that 3 points or more constituted the category of a weak sense of coherence.

The participants were asked about the occurrence of life-threatening events that were associated with a long-term psychological threat in the past 12 months: unemployment, divorce, financial crisis, death of a 1st degree relative or a close friend.

### Behavioral factors

Tobacco use was categorized as no smoker, smoker and former smoker. Those who had stopped smoking < 2 years before inclusion into the study were considered current smokers. Alcohol consumption was evaluated on a 6-point scale ranging from "never" to "daily." Leisure physical activity was assessed by a single question: "How often in leisure time are you physically active (sports, running, etc.), no less



than 30 min in the way that your breathing becomes hard and sweat appears?" with possible 7 answers, categorized into 3 variables ("daily," "weekly," "less than weekly").

The following demographic variables were included in the analysis: age, gender, having a partner or spouse, divorced, single, widow(er) and a number of children living at home. SPSS version 19.0 was used to analyze the data. Descriptive statistics displayed in a form of frequencies and percentages were used to describe the characteristics of the study participants.

Multivariate logistic regression models were used to investigate the association between the dependent variable (post-traumatic stress symptoms as measured by the IES-R) and all the independent variables included in the study. The results are presented as age and gender adjusted odds ratios (OR) with 95% confidence intervals (CI). Three models were estimated:

1. To test the hypothesis that the associations between workplace bullying and post-traumatic stress symptoms might be mediated by stressful work and everyday life conditions and personal resources, Model I adjusted simultaneously for age, gender, job demands, job control, social support, sense of coherence, life-threatening events.
2. To test the hypothesis that health behaviors might affect the investigated associations, Model II further adjusted for alcohol, smoking, low physical activity.
3. Finally in Model III demographic variables: marital status (married, co-habitant, single, divorced, bereavement) and the number of children living together was included.

All the models were repeated with bullying exposure duration of 12 months, 1–5 years, more than 5 years.

The Bioethics' Center of the Lithuanian University of Health Sciences approved the protocol. All the persons gave their informed consent prior to their inclusion in the study. Details that might disclose the identity of the subjects under the study were omitted.

## RESULTS

The prevalence of bullying among the physicians was high as exposure to occasional bullying was 17.3% and severe bullying – 13%, hence, all 30.3% claimed to be victims of workplace bullying. 15.8% had symptoms indicative of post-traumatic stress disorder. A total of 36.8% of the study group witnessed bullying rarely while another 18.6% had often been witnesses of bullying while at work. Bullying from patients was experienced by 11.8% of the family physicians, from colleagues by 8.4% of them and from superiors by 26.6%. Hence, bullying mainly takes place in the hierarchical relationship of a leader-subordinate, with some also reporting simultaneous bullying from colleagues and patients. The duration of bullying exposure was 6–12 months for 9.2%, 1–5 years for 7.3% and more than 5 years for 13.8%.

Table 1 presents distribution of the independent variables divided into groups with or without post-traumatic stress symptoms, and with age and gender adjusted odds ratios and their 95% CI. As shown in the table, severe exposure to workplace bullying is by far the factor with the highest odds ratio for portraying post-traumatic symptoms.

Table 2 presents 3 models. It is interesting to note that the values of odds ratios for severe bullying increase after all the adjustments, indicating that the relationship between workplace bullying and post-traumatic symptoms is actually suppressed by other stressful events in the lives of some of the victims. In the final, Model III, the adjusted odds ratio for severe bullying was 13.88 (95% CI: 4.68–41.13).

The age and gender adjusted odds ratio for 6–12 months bullying exposure duration was 3.99 (95% CI: 1.66–9.61); 3.56 (95% CI: 1.39–10.18) for 1–5 years duration and 3.76 (95% CI: 1.73–8.17) for more than 5 years of exposure to workplace bullying. Yet, after adjustment for all the independent variables mentioned in the Model III, the odds ratio for 6–12 months' exposure duration was 3.61 (95% CI: 1.22–10.71) and increased to 3.98 (95% CI: 1.22–12.94) for 1–5 years and 6.03 (95% CI: 2.14–17.01) for more

**Table 1.** Distribution of the study variables among family physicians with and without post-traumatic stress symptoms, age and gender adjusted odds ratios (OR) and their 95% confidence intervals (CI)

Variable	Post-traumatic stress		No post-traumatic stress		Age and gender adjusted	
	n	%	n	%	OR	95% CI
Gender						
men	10	17.6	48	19.6	–	–
women	41	73.4	224	80.4	0.86	0.40–1.85
Workplace bullying						
no	23	45.1	202	74.3	–	–
occasional	8	15.7	48	17.6	1.47	0.62–3.50
severe	20	39.2	22	8.1	8.05	3.80–17.04
Bullying exposure duration						
no	20	39.2	193	71.0	–	–
12 months	10	19.6	23	8.5	3.99	1.66–9.61
1–5 years	7	13.7	19	7.0	3.56	1.39–10.18
> 5 years	14	27.5	37	13.5	3.76	1.73–8.17
Patients as bullies						
no	42	82.4	243	89.3	–	–
yes	9	17.6	29	10.7	1.74	0.77–3.95
Superiors as bullies						
no	26	51.0	211	77.6	–	–
yes	25	49.0	61	22.4	3.62	1.92–6.82
Colleagues as bullies						
no	41	80.4	255	93.7	–	–
yes	10	19.6	17	6.3	3.64	1.52–8.70
Bullying witnessing						
no	14	27.5	130	47.8	–	–
occasional	18	35.3	101	37.1	1.60	0.76–3.39
frequent	19	37.2	41	15.1	4.20	1.93–9.13
Threatening life events						
no	24	47.1	207	76.1	–	–
yes	27	52.9	65	23.9	3.69	1.97–6.92
Job demands						
low	22	43.1	185	68.0	–	–
high	29	56.9	87	32.0	2.82	1.52–5.24
Job control						
high	24	47.1	151	55.5	–	–
low	27	52.9	121	44.5	1.37	0.75–2.49
Social support						
high	22	43.1	158	58.1	–	–
low	29	56.9	114	41.9	1.82	0.99–3.38
Sense of coherence						
strong	6	11.8	46	16.9	–	–
average	20	39.2	166	61.0	0.92	0.35–2.43
weak	25	49.0	60	22.1	3.23	1.22–8.56

**Table 2.** Associations between post-traumatic stress symptoms and workplace bullying, psychosocial factors at work and daily life among family physicians in the logistic regression models

Psychosocial factors	Model I		Model II		Model III	
	OR	95% CI	OR	95% CI	OR	95% CI
<b>Bullying</b>						
no (reference)						
occasional	1.83	0.73–4.62	1.90	0.72–5.01	2.07	0.76–5.62
severe	9.74	3.76–25.22	10.70	3.89–29.48	13.88	4.68–41.13
Life threatening events	2.64	1.30–5.37	3.11	1.47–6.60	2.96	1.37–6.38
High job demands	2.22	1.09–4.54	1.86	0.88–3.95	1.85	0.85–4.02
Low job control	0.90	0.44–1.88	0.78	0.36–1.71	0.82	0.37–1.81
Low social support	0.70	0.30–1.62	0.89	0.37–2.16	0.75	0.30–1.88
<b>Sense of coherence</b>						
strong (reference)						
average	0.70	0.24–2.08	0.66	0.21–2.12	0.67	0.20–2.23
weak	2.84	0.96–8.36	2.79	0.86–9.07	2.94	0.86–10.07

Model I – adjusted for age, gender, life threatening events, job demands, job control, social support, sense of coherence; Model II – adjusted for age, gender, life threatening events, job demands, job control, social support, sense of coherence, physical activity, alcohol, smoking; Model III – adjusted for age, gender, life threatening events, job demands, job control, social support, sense of coherence, physical activity, alcohol, smoking, marital status, number of children in the family.

OR – adjusted odds ratios; 95% CI – adjusted for 95% confidence intervals.

than 5-years exposure duration (data not presented in the tables). Hence, duration of the bullying episode does matter when it comes to the duration of the menace.

## DISCUSSION

The objective of the present study was to examine associations between exposure to workplace bullying and post-traumatic stress symptoms among family physicians taking into account the possible influence of other psychosocial work-related and everyday life stressors, health related behavioral habits, personal characteristics, and possible buffering health resources, and employing a representative community sample. To our knowledge, this is the 1st study on the relationship between bullying and post-traumatic symptoms employing such a sample and controlling for so many possible confounding factors.

First of all, the findings show that the prevalence of post-traumatic stress was as high as 15.8%, while the prevalence

of occasional bullying was 17.3% and severe bullying 13%. In both cases the observed prevalence rates were very high. We found only 1 study with comparable results for post-traumatic stress conducted among family physicians in regular practice, yet from an underserved (rural and remote) area in Canada, indicating a prevalence of PTSD of 4.4% [39]. Hence, the present observed prevalence rate is almost 4 times higher.

Population – based studies conclude that lifetime prevalence of PTSD was 7.3% in the general population of the USA [48], 5.6% in the general population of Sweden [49] while 1% self-reported being diagnosed by health professionals in Canada [50] and 1.3% of the Australian population meeting the criteria for PTSD [51], again underscoring the high prevalence rates found in the present sample. A possible explanation for this high prevalence rate of stress symptoms revealed in the present study is exposure to workplace bullying, coming in particular from the subjects' superiors.



A prevalence rate of 30.3% bullying is extremely high compared to most other studies [32,52]. A meta-analysis based on some 90 studies looking at methodological moderators of the prevalence of bullying, has shown that the mean prevalence of bullying employing this specific method was about 11% – around a 3rd of that in the present study [32]. Hence, the study supports prior studies showing high prevalence rates in this region [10]. In other studies, severe bullying is normally in the area of 2–5%, while occasional bullying seems to affect 10–15% of the working population [11,52]. Yet, it is exposure to severe and frequent bullying that is a particularly significant predictor of such symptoms, with an odds ratio of almost 13 after controlling for other factors. Hence, physicians who are exposed to severe bullying are more than 13 times more likely to score above the cut off criterion for having symptoms indicative of PTSD. A total of 13% of the physicians reported such exposure, as compared to 1–4% in most other studies [11].

Other studies have shown that post-traumatic stress symptoms are prevalent in 63–76% of all victims of severe bullying [1,53]. A Swedish study based on patients at a rehabilitation clinic for victims of workplace bullying showed that 59 out of 64 patients were diagnosed with PTSD [13]. Hence, the present study supports the theoretical notion that bullying at work is an extreme social stressor with threat potentials comparable to those inherent in other traumatic life events, far expanding ordinary life events [1,2,5].

Definition of bullying includes the condition of being exposed to seemingly everlasting experiences of aggression and social exclusion. This set of repetitive stressful life events leads to a severe psychological discomfort including strong feeling of fear or even hopelessness [5]. In line with this, earlier studies have also shown that symptoms found among targets of workplace bullying can be compatible with that of post-traumatic stress [1], and numerous studies confirm the associations between workplace bullying and severe mental health problems including post-traumatic stress symptoms [2,53]. Such findings, and not

just the findings of the present study, indicate that exposure to bullying may be experienced more as an ongoing trauma than as a daily hassle and an ordinary life stressor, and that frequent exposure to workplace bullying shows an odds ratio for having post-traumatic symptoms far above those of other such life and work-related stressors. In line with earlier studies [2], our data also shows that a sense of coherence, normally seen as a protective factor regarding effects of exposure to life stressors, does not explain the association between exposure to bullying and post-traumatic symptoms, again indicating that bullying theoretically must be seen more as a traumatic than as a stressful event.

#### **Strengths and limitations of the present study**

The present study has some notable strengths. First of all, it is conducted in a representative community sample as opposed to the self-selected samples of severely affected victims. Secondly, the family physicians as an occupational group should be seen as a rather resourceful group of workers, both on an individual level as well as in terms of their work situation being characterized by high control and decision latitude. The latter is theoretically seen as an important buffer against stressful circumstances [46].

Furthermore, the study employs well known and much used measures of both bullying and post-traumatic symptoms. The IES-R measure has been used in studies on post-traumatic stress after bullying experience [1–3,17,53] and has shown good psychometric properties [43]. Perceived victimization from workplace bullying in the present study was assessed by a self-report method according to a given bullying definition [2,44] asking if the physicians experienced bullying during the last 6 months, followed by a question regarding the frequency of the experienced bullying (occasional, severe (if it was experienced on the weekly basis)). The questionnaire included information on sources of bullying (patients, colleagues, and supervisors) as well as questions on witnessing bullying. Although the

method used for the bullying assessment was based on self-report, this method has been shown to provide a rather conservative estimate of the prevalence of workplace bullying [52]. Furthermore, employing this method makes it possible to compare the results with a range of studies employing the same evaluation method.

Our study has demonstrated quite high levels of bullying among the family physicians (13% of severe bullying and 18.6% frequent bullying witnessing), while a study in a representative sample of Norwegian employees found that 2% were categorized as targets of severe bullying, while another 2.5% were categorized as targets of occasional bullying. In that study 11.5% had witnessed bullying over the last 6 months [52]. The present study showed a prevalence rate of 55.4% for observed bullying, resulting in a conclusion that bullying is a severe problem among Lithuanian physicians. In a representative sample of UK employees, 10.6% of the respondents reported being a victim of either severe or occasional bullying during the last 6 months [12], while 5% of hospital staff in Finland reported being victims of bullying [54]. A total of 9.4% in a sample of US workers were victims of some level of bullying based on the same estimation method [55].

Another vital strength of the present study is the fact that we controlled for a wide range of potential confounders. The majority of earlier studies on workplace bullying and health outcomes have not considered such potential confounders, moderators and control variables [56]. The current study was designed to test a comprehensive model of work environment and everyday life stressors including job demands, job control, social support at work, workplace bullying, and personality factors, examination of both traditional stressors and buffering resources and the inclusion of post-traumatic stress symptoms as a possible consequence of victimization. This study among the family physicians in Lithuania shows high OR (8.05, 95% CI: 3.80–17.04) of post-traumatic stress symptoms for severe bullying victims.

The adjustment for other stressful work (high job demands, low job control, low social support at work) and everyday life risk factors (the occurrence of life-threatening events in the past 12 months that were associated with a long-term psychological threat: unemployment, divorce, financial crisis, death of a 1st degree relative or a close friend), personal health resources (sense of coherence), and behavioural characteristics (leisure physical activity level, smoking, alcohol consumption), demographic variables (age, gender, living with partner or spouse and having children living at home) increased the OR for bullying to 13.88 (95% CI: 4.68–41.13), as exposure to many traumatic events may increase victims' vulnerability [5,57]. These results may indicate a cumulative effects of exposure to several stressors, including workplace bullying, that have contributed to the victimization and developing post-traumatic stress symptoms.

Yet, it also shows that experiences and outcomes of workplace bullying may be hidden within other health related problems at work or in one's daily life or personal habits and characteristics. Hence, the possible outcome of bullying may actually be more severe than what hits the eye, as indicated by this revealed suppressor effect. Other researches have also concluded that influence of possible mediators in the relationship between critical incidence and post-traumatic stress symptoms in health professionals should be established by including variables that may increase the vulnerability such as psychiatric (family) history, previous trauma, social support and additional life stress [58].

Yet, some limitations of the study should be also mentioned. The study only investigates symptoms of post-traumatic stress and does not contain a diagnostic interview necessary to qualify the individual for a full PTSD diagnosis. Hence, the study investigates the symptoms only. Secondly, the study was based on a cross-sectional design. Longitudinal studies in the work stress are surely needed and would also enable to detect paths through which different stressors affect the bullying-post-traumatic stress associations.

Yet, a range of longitudinal studies have shown bullying to predict subsequent symptoms of depression [6,59], while also showing tendencies of a reversed effect in line with the hypothesis of the gloomy perception mechanism [6].

## CONCLUSIONS

In conclusion, the prevalence of both workplace bullying and post-traumatic stress symptoms was high among the family physicians in Lithuania, with exposure to workplace bullying proving to be a substantial risk factor for having post-traumatic symptoms far exceeding the risk associated with other work and everyday life stressors. Furthermore, this strong relationship cannot be explained by the victims' lack of personal resources to cope with the stress. On the contrary, it shows that the relationship is stronger when controlling for such factors. Hence, the study contributes to our understanding of potential severe outcomes of workplace bullying, underscoring the need for both preventive measures in the workplace as well as interventions focusing on the treatment and rehabilitation of those already exposed. It is necessary to stress the importance of recognition of post-traumatic stress symptoms in the victims of workplace bullying and the necessity to help them. As illness can adversely affect the physicians' quality of life as well as patients' care, it is hoped that these results will improve the recognition of symptoms in those exposed as well as to assist physicians to seek appropriate treatment and help for their problems.

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