Psychological terror at work and cardiovascular diseases among teachers

Vilija Malinauskienë, Vytautas Obelenis, Diana Dopagienë

Aims: To investigate the prevalence of workplace psychological terror (bullying) in a representative sample of secondary school teachers in Kaunas, Lithuania (formerly part of the Soviet Union) and the effect of bullying on stress symptoms and some reported outcomes diagnosed by a physician over the previous six months.

Methods: 738 teachers of 7 Kaunas secondary schools were included into the study. Of them, 475 (64.4%) were asked to answer the Norwegian version of the Negative Acts Questionnaire and some questions on perceived stress, some reported outcomes diagnosed by a physician over the previous six months, smoking habits, body height and weight. SPSS 10.0 for Windows was used in the statistical analysis, and the logistic regression models were applied for the estimation of odds ratios of bullying on the dependent variables (cardiovascular diseases, stress symptoms).

Results: 470 teachers answered the questionnaire (response rate 63.4%). The prevalence of regular bullying was 2.6% and occasional bullying 23.0%. The age–gender adjusted odds ratio of bullying for stress symptoms was 2.97, 95% CI being 2.11–4.17. The odds ratio of bullying for cardiovascular diseases was 1.31, 95% CI 1.01–1.72; after adjustment for age, gender, smoking and overweight it was 1.32; 95% CI being 0.99–1.77.

Conclusions: This first study on workplace bullying in the former Soviet Union, East Europe and Baltic countries confirmed that the phenomenon of bullying is of importance in the onset of cardiovascular health problems.

Key words: workplace bullying, teachers, stress, health outcomes, psychological terror, cardiovascular diseases
payers must take reasonable action to prevent psychological harassment and stop it whenever they become aware of such behavior.

In Norway, "Act relating to worker protection and working environment" has been accepted in 2001 (6). Section 12 on workplace arrangements declares, "Employees shall not be subjected to harassment or other improper conduct".

Though the phenomenon of bullying is well known in the welfare societies and has been a subject of scientific investigations, it is quite new in the countries of the previous Soviet Block.

Harassment in the families and the problem of equal rights between men and women have been an issue discussed in Lithuanian Parliament. Nevertheless, investigations on bullying in the workplace only came to a start position.

We made some efforts to find international studies on bullying in the countries of the previous Soviet Block. We managed to find only investigations in Hungary among army and bank employees and bank inspectors with the prevalence of bullying from 2.5% to 5.6% (7).

The study on occupations and the prevalence of major depressive disorder showed that some occupational categories are at extreme risk of depression. They are lawyers, teachers and secretaries (8). Bullying was prevalence was 10.3% in the study on teachers in Norway (9) and 6% in a study of nursery school teachers conducted in Sweden (10).

On the other hand, Scandinavian studies (11) indicate that with regards to bullying, the health sector and the educational sectors are low-risk sectors, while high-risk organizational settings appear to be large, male-dominated manufacturing companies.

Research on the association between workplace bullying and health is of great importance. Workplace bullying was related to 25–90% of increase in the risk of sickness absence (12).

A strong association between workplace bullying and subsequent depression, found in a large cohort of hospital employees, suggests that bullying is an etiological factor for mental health problems (13). Prolonged stress through metabolic and neuroendocrine mechanisms contributes to the development of the diseases. The victims of bullying also seem to be at a greater risk of cardiovascular diseases.

The lack of findings in the investigation of bullying in the countries of Central and Eastern Europe encouraged us to carry out the present study.

The aim of the study was to investigate the phenomenon of bullying in teachers in Kaunas, Lithuania, and its possible effects on stress and some reported outcomes diagnosed by a physician over the previous six months.

METHODS
Sample and procedure

Kaunas is a second largest city in Lithuania with the population of approximately 400,000. The city is divided into 12 administrative districts. Totally 738 teachers of 7 secondary schools from 2 districts of the Kaunas city were included into the study (3 schools in the Dainava district and 4 schools in the Šilainiai district). The able-bodied inhabitants of these two districts compose 34.1% of the 25–64 year old Kaunas population, i.e. one third of the Kaunas population. It should be noted that there is no strict division of the districts in accordance with socioeconomic status in Lithuania or in other countries of the previous Soviet Union as compared to the welfare societies. These differences are only appearing when people with higher income make efforts to live outside the cities, far away from city centers in private houses. The process is really going, but it is only at the beginning. Consequently, there are no socioeconomic differences among teachers working in one or another district of the Kaunas city.

Seven secondary schools in two Kaunas districts were randomly selected with the help of the Educational Department of the Kaunas city. As there are no socioeconomic differences among the Kaunas districts, we could state that those seven secondary schools are representative of all Kaunas secondary schools.

The interview was performed when the teachers gathered at the meeting. The participation rate at the meeting was 64.4% (475 teachers). They were informed about the confidentiality of the study; the questionnaire was anonymous and nobody would be informed about the results in definite schools; also, that the study was part of an international program and that their open answers would serve for the international comparisons on bullying. They were asked to have enough space for open answering, i.e. not to sit close to one another. The response rate was 63.4% (470 teachers answered the questionnaire).

The questionnaire

The questionnaire information included Negative Acts Questionnaire (NAQ) (S. Einarsen & H. Hoel) with 23 items, 22 items describing negative behavior with no reference to the term ‘bullying’ with response alternatives over the previous six months (never, now and then, monthly, weekly, daily) (1). The scale reliability was measured by means of Cronbach’s alpha and was 0.88. And the 23rd item was measuring the overall feeling of victimization according to a definition: “Have you been bullied at work? We define bullying as a situation where one or several individuals persistently over a period of time perceive themselves to be on the receiving end of negative actions from one or several persons, in a situation where the target
of bullying has difficulty in defending him or herself against these actions. We will not refer to one-off incident as bullying. Using the above definition, please state whether you have been bullied at work over the last six months? The respondents were asked to indicate how often they were bullied with possible answers (no; yes, but only rarely; yes, now and then; yes, several times per week; yes, almost daily).

The “frequency” categories were combined to create three experience groups: not bullied, bullied occasionally, and bullied regularly, by limiting the “regularly bullied” group to include those cases where the target had been bullied on a weekly or more frequent basis. The group “occasionally bullied” included 2 possible answers: “yes, but only rarely; yes, now and then” (3).

The respondents were asked to answer one question on perceived stress according to the recommendations of the Finnish Institute of Occupational Health (14): “Stress means a situation when a person feels tense, restless, nervous, anxious, or unable to sleep at night because his mind is troubled all the time. Do you feel that kind of stress?” There were four possible answers (not at all, only a little, rather much, very much). Answers “very much” were evaluated as an undoubted presence of perceived stress.

The questionnaire included the information on several health outcomes, reported by the participants, diagnosed by the physician over the previous six months (cardiovascular diseases, including arterial hypertension, ischemic heart disease; bronchial asthma, low back pain, diabetes, non-allergic skin diseases, arthritis, liver diseases, renal diseases). For each disease, the respondent was requested to indicate whether or not a physician had diagnosed him or her as having the disease.

The participants were asked on their smoking habits (non-smoker, smoker, ex-smoker) and height and weight. Body mass index was calculated according to the WHO recommendations as the ratio kg/m² and classified into normal (≤ 25.0 kg/m²), increased (>25.0–≤ 30.0 kg/m²), obesity (>30.0 kg/m²).

Statistics

The data were coded and processed using the SPSS 10.0 statistics package. The following statistical procedures were employed: frequency analysis, correlation analysis, and logistic regression analysis. In the frequency and correlation analysis, statistical significance was determined using the p value.

Associations between bullying and stress, some outcomes (cardiovascular diseases, etc.) were analyzed in the logistic regression and expressed in terms of odds ratios (OR). Stress, outcomes, smoking, gender were included into logistic regression models as binary dependent variables; bullying, body mass index and age as continuous covariates. Statistical significance was determined using a 95% confidence interval (CI) level.

RESULTS

Totally 475 teachers were questioned in seven schools of the Kaunas city, five did not respond to the definition of bullying. The mean age of the respondents was 42.08 ± 10.35 years.

The prevalence of self-reported bullying according to the definition (23rd question of the NAQ) in the total sample is shown in Table 1. The “frequency”

<table>
<thead>
<tr>
<th>Bullying*</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Never</td>
<td>350</td>
<td>74.4</td>
</tr>
<tr>
<td>Rarely</td>
<td>90</td>
<td>19.2</td>
</tr>
<tr>
<td>Now and then</td>
<td>18</td>
<td>3.8</td>
</tr>
<tr>
<td>Several times per week</td>
<td>9</td>
<td>1.9</td>
</tr>
<tr>
<td>Almost daily</td>
<td>3</td>
<td>0.7</td>
</tr>
</tbody>
</table>

* Bullied teachers perceiving themselves as victims (question 23 of the NAQ).

Table 1. Frequency of self-reported bullying (N = 470)

Statistics

\[ \chi^2 = 6.496 \quad df = 6 \quad p = 0.37 \]

\[ \chi^2 = 8.488 \quad df = 12 \quad p = 0.75 \]

Table 2. Characteristics of teachers from the study cohort

<table>
<thead>
<tr>
<th>Number of school</th>
<th>Cases</th>
<th>Gender</th>
<th>Regularly bullied teachers</th>
<th>Occasionally bullied teachers</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>Per cent</td>
<td>M men</td>
<td>Women</td>
</tr>
<tr>
<td>1</td>
<td>85</td>
<td>18.1</td>
<td>7</td>
<td>76</td>
</tr>
<tr>
<td>2</td>
<td>74</td>
<td>15.6</td>
<td>6</td>
<td>66</td>
</tr>
<tr>
<td>3</td>
<td>59</td>
<td>12.8</td>
<td>9</td>
<td>50</td>
</tr>
<tr>
<td>4</td>
<td>59</td>
<td>12.4</td>
<td>10</td>
<td>48</td>
</tr>
<tr>
<td>5</td>
<td>59</td>
<td>12.4</td>
<td>10</td>
<td>47</td>
</tr>
<tr>
<td>6</td>
<td>53</td>
<td>11.4</td>
<td>4</td>
<td>45</td>
</tr>
<tr>
<td>7</td>
<td>81</td>
<td>17.3</td>
<td>12</td>
<td>69</td>
</tr>
<tr>
<td>Total</td>
<td>470</td>
<td>100</td>
<td>58</td>
<td>401</td>
</tr>
</tbody>
</table>
categories among victims of bullying were combined to create three experience groups: not bullied, bullied occasionally, and bullied regularly, and are presented in Table 2.

Twelve teachers (2.6%) reported being “regularly bullied” in the workplace, 108 (23.0%) experienced “occasional bullying”. There were no significant gender differences in respect to bullying among the respondents.

We calculated the correlations between the study variables. Bullying was positively associated with stress ($r = 0.332$, $p < 0.01$). The body mass index was associated with age ($r = 0.457$, $p < 0.01$).

Table 3 shows the prevalence of reported, diagnosed by a physician over the previous six months outcomes among the respondents. The frequency differences among regularly, occasionally bullied and non-bullied teachers were statistically significant for cardiovascular diseases. We found differences in stress symptoms among the bullied and non-bullied teachers ($p < 0.0001$).

The mean score for BMI was $24.26 \pm 4.09$ for women and $25.43 \pm 4.37$ for men. We found statistically significant differences among men and women in perceived stress ($p = 0.025$), BMI ($p = 0.005$) and smoking habits ($p = 0.006$).

In the logistic regression model, we investigated the effect of bullying on the symptoms of stress and some reported outcomes (dependent variables). The results are shown in Table 4, with bullying as a continuous covariate. The odds ratio for bullying on the reported, diagnosed by a physician, onset of cardiovascular diseases over the previous six months was $1.31$; $95\%$ CI $1.01$-1.72; after adjustment for age, gender, smoking and body mass index it was $1.32$; $95\%$ 0.99-1.77. Symptoms of stress were also associated with bullying experienced at the workplace.

### DISCUSSION

We investigated workplace bullying in a representative sample of teachers from Kaunas secondary schools, Lithuania by means of the Negative Acts Questionnaire. We found that 2.6% of the interviewed teachers perceived themselves as victims of bullying regularly (weekly or daily) over the previous six months. 23.0% of the respondents were bullied occasionally (less than weekly).

This study on workplace bullying is the first study in the countries of the former Soviet Union / Eastern Europe, and definitely the first in the Baltic countries. Our previous report has shown that psychosocial factors at work in terms of the Demand–Control Model and their effect in myocardial infarction risk vary in the societies with different socioeconomic structure (15). Low job control was a more important risk factor than job strain and predicted myocardial infarction risk in all the occupational categories of Kaunas men, Lithuania.

As Lithuania is a country from the former Soviet Union, we could expect the reported prevalence of bullying experience to be lower as compared to industrialized countries. In a strictly “authoritarian regime” it was shame to be assumed as an unwanted, unloved, unacceptable person. Strong characters were often called “conflicting”, and the bullying behavior of supervisors was a means of controlling the employee's actions and inspirations. Hence, the bullying experience in our study might be underestimated because of an underreporting bias.

However, the results of our study are similar with those in the industrialized societies. The overall percentage of 25.6 of workplace bullying found in this study correspond with other studies reporting the prevalence of occasional bullying or negative acts beha-
behavior up to 20% (4). The strong methodological site of our study was that the interview had been performed at a school meeting and the questionnaires were collected by the researchers, so nobody could get acquainted with the answers as the questionnaires were anonymous.

We investigated health effects of workplace bullying in a sample of teachers and found a significant effect of bullying on stress and some diseases diagnosed by a physician over the previous six months. We found a significant increase in odds ratios on stress, cardiovascular diseases. A study on bullying among hospital staff in Finland also found an association between bullying and cardiovascular diseases (13), though it lost statistical significance after adjustment for overweight. In our study, the effect of bullying on the onset of cardiovascular diseases remained stable even after adjustment for cardiovascular risk factors such as smoking and overweight.

In conclusion, our study has confirmed that the phenomenon of bullying takes place not only in welfare societies, but in the post-transition countries as well. The prevalence of bullying corresponds with the data from Western countries. In the logistic regression analysis we received the confirmation that bullying might influence the onset of cardiovascular diseases, taking into account the possible effects of traditional cardiovascular risk factors such as smoking and overweight. Thus, the phenomenon of bullying is of great importance in planning the preventive strategies of stress-related diseases in Baltic and Eastern European countries as well as in the welfare societies.

ACKNOWLEDGMENTS

The investigation was sponsored by the Nordic Council of Ministers information office in Vilnius (project code DVP/13).

References


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PSIKOLOGINIS TERORAS DARBE IR JO ĖTATA MOKYTOJO DIRDIES BEI KRAUJAGYSLIØ SISTEMOS LIGOMS

Santrauka

Audas. Pastaroja meta moksliniai tyrinëjimai Vakarø Europos ályse rodo, kad psikologinis teroras darbe (bulinës) turi reikëms dirbanës sëvelikatai. Mûsá darbo tikslas – iêirti psikologinio teroro paplitimà tarp Kauno vidurinio mokyklo mokytojø ir ávertinti jo átaka streso bei kai kurio gydymo patvirtintà ligg per pastaruosius dingusës merginio atsidirëmës.

Tiriamieji ir darbo metodai. Mûsá tyrime dalyvavo 738 Kauno vidurinio mokyklo mokytojai. 475 (64,4%) atsakë á norvegáus mokslininkà sukurtà Negatyvaus elgesio darbe klaušimynà, taip pat á klausimø apie patiriamà stresà bei kai
kurias gydytojø nustatytas ligas per pastaruosius ðeðis mëne-
sius. Duomenys apdoroti taikant SPSS 10.0 statistinæpro-
gramà ir logistinës regresijos analizæ.

Rezultatai. 470 mokytojai uþpildë visà klausimynà (63,4%). Reguliariai (keletà kartø per savaitæir daþniau) 
psichologinà terorà darbe patyrë 2,6%, atsitiktinai – 23,0%
mokytoja. Patyrusieji psychologinà terorà darbe beveik tris 
darbe beveik tris 
kartus daþniau skundësi streso simptomais, palyginus su jo 
nepatyrusiais (ðS = 2,97; 95% PI 2,11–4,17). Galimybës su-
sirgti ðirdies ir kraujagysliø sistemos ligomis santykis buvo 
1,31; 95% PI 1,01–1,72; logistinës regresijos analizës bûdu 
atmetus amþiaus, lyties, rûkymo ir antsvorio ãakà, jis buvo 
1,32; 95% PI 0,99–1,77.

Iðvados. Ði pirmoji Baltijos ir Rytø Europos ðalyse atlik-
ta studija parodë, kad psychologinis teroras darbe yra papli-
tas reiðkinys ir turi ãakos ðirdies bei kraujagysliø ligoms at-
sirasti.

Raktapodðiai: psychologinis teroras darbe (bulingas), mok
tyøjai, stresas, sveikatos sutrikimai, ðirdies ir kraujagysliø 
sistemos ligos.