

Psychological terror at work and cardiovascular diseases among teachers

Vilija Malinauskienė¹,

Vytautas Obelenis²,

Diana Ðopagienė¹

¹ *Epidemiology, Institute of Cardiology,
Kaunas University of Medicine,
Kaunas, Lithuania*

² *Environmental Medicine,
Kaunas University of Medicine,
Kaunas, Lithuania*

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

INTRODUCTION

Recent studies in welfare societies have shown that psychological terror (bullying) in the workplace seems to be a phenomenon that prevails in many organizations (1). Taking all studies together, a percentage of between 1 and 4% serious bullying has emerged in Europe, when using strategy to give a precise definition of what bullying is and ask respondents whether they consider themselves victims

of bullying according to the definition and the frequency of bullying at least “once a week” (2). For somewhat less severe cases (bullying less often than weekly), frequencies between 8 and 10% have been repeatedly reported (3). Moreover, studies which simply assess if negative social behavior at work occurs (4) suggest that in many organizations, up to 20% or more of the employees are occasionally exposed to negative social acts, such as being yelled at, teased or humiliated, *i.e.* exposed to intensive social stressors at work.

Since June 2004, a law has been implemented in Quebec (Canada) against bullying at work (5). It declares that every employee has a right to a work environment free from psychological harassment. Em-

Correspondence to: V. Malinauskiene, Laboratory of Environmental Epidemiology, Institute of Cardiology, Kaunas University of Medicine, Sukilėliø 17, Kaunas 50009, Lithuania. E-mail: vilimali@med.kmu.lt

ployers 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 undoubtful 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 ($> 25.0 - \leq 30.0$ 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 1. Frequency of self-reported bullying (N = 470)

Bullying*	N	%
Never	350	74.4
Rarely	90	19.2
Now and then	18	3.8
Several times per week	9	1.9
Almost daily	3	0.7

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

Table 2. Characteristics of teachers from the study cohort

Number of school	Cases		Gender		Regularly bullied teachers		Occasionally bullied teachers	
	N	Per cent	Men	Women	N	Per cent	N	Per cent
1	85	18.1	7	76	2	2.4	25	29.4
2	74	15.6	6	66	1	1.4	13	17.6
3	59	12.8	9	50	0	0	13	22.0
4	59	12.4	10	48	2	3.4	16	27.1
5	59	12.4	10	47	2	3.4	12	20.3
6	53	11.4	4	45	2	3.8	9	17.0
7	81	17.3	12	69	3	3.7	20	24.7
Total	470	100	58	401	12	2.6	108	23.0
			$\chi^2 = 6.496$ df = 6 p = 0.37		$\chi^2 = 8.488$ df = 12 p = 0.75			

Table 3. The prevalence of reported outcomes diagnosed by a physician over the previous six months

Outcomes	Regularly bullied		Occasionally bullied		Non-bullied		p value
	N	%	N	%	N	%	
Arthritis	1	8.3	16	14.8	42	12.0	0.672
Bronchial asthma	0	0	3	2.8	10	2.9	0.839
Cardiovascular diseases	4	33.3	44	40.7	86	24.6	0.005
Diabetes	0	0	1	0.9	2	0.6	0.886
Liver diseases	0	0	1	0.9	4	1.1	0.919
Low back pain	0	0	10	9.3	17	4.9	0.157
Non-allergic skin diseases	2	16.7	6	5.6	10	2.9	0.028
Renal diseases	1	8.3	3	2.8	6	1.7	0.256
Stress symptoms	8	66.7	31	28.7	27	7.7	0.0001

Table 4. Adjusted odds ratios for bullying in the logistic regression model

Dependent variables	Bullying		Bullying	
	OR	95% CI	OR*	95% CI
Cardiovascular diseases	1.31	1.01–1.72	1.32**	0.99–1.77
Stress	2.88	2.08–3.99	2.97	2.11–4.17

* OR adjusted for age and gender.

** OR adjusted for age, gender, smoking and overweight.

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 ± 4.09 for women and 25.43 ± 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 socio-economic 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-

viour 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).

Received 4 January 2005

Accepted 15 March 2005

References

- Einarsen S, Hoel H, Zaph D, eds. *Bullying and Emotional abuse in the Workplace. International Perspectives in Research and Practice*. London and New York: Taylor & Francis; 2003.
- Einarsen S, Skogstad A. Prevalence and risk groups of bullying and harassment at work. *European Journal of Work and Organizational Psychology* 1996; 5: 185–202.
- Hoel H, Cooper CL, Faragher B. The experience of bullying in Great Britain: The impact of organisational status. *European Journal of Work and Organizational Psychology* 2001; 10: 443–65.
- Hubert AB, van Veldhoven M. Risk sectors for undesired behaviour and mobbing. *European Journal of Work and Organizational Psychology* 2001; 10: 415–24.
- Soares A. Bullying, post-traumatic stress disorders, and social support. Proceedings of the fourth international conference on bullying and harassment in the workplace, June 28–29, 2004, Bergen, Norway, p. 112.
- Act relating to worker protection and working environment No 117, Norway, 2001.
- Kauscek G, Simosn P. Psychoterror and risk management in Hungary. Paper presented as a poster at the 7th European Congress of Work and Organizational Psychology, 19–22nd April, 1995, Győr, Hungary.
- Eaton WW, Anthony JC, Mandel W et al. Occupations and the prevalence of major depressive disorder. *J Occup Med* 1990; 32(11): 1079–87.
- Matthies SB, Raknes BJ, Rökkum O. Mobbing på arbeidsplassen (Bullying in the workplace). *Tidsskrift for Norsk Psykologforening* 1989; 26: 761–74.
- Lindroth S, Leymann H. Bullying of a male minority group within child-care. On men's equality in a female-dominated occupation. Stockholm: Arbetarsyddstyrelsen 1993.
- Einarsen S, Skogstad A. Bullying at work: Epidemiological findings in public and private organizations. *European Journal of Work and Organizational Psychology* 1996; 5: 185–201.
- Kivimäki M, Elovainio M, Vahtera J. Workplace bullying and sickness absence in hospital staff. *Occup Environ Med* 2000; 57: 626–60.
- Kivimäki M, Virtanen M, Vartia M et al. Workplace bullying and the risk of cardiovascular disease and depression. *Occup Environ Med* 2003; 60: 779–83.
- Occupational stress questionnaire: user's instructions. Institute of Occupational Health, Helsinki, Finland, 1992, 43.
- Malinauskene V, Theorell T, Grazuleviciene R et al. Low job control and myocardial infarction risk in the occupational categories of Kaunas men, Lithuania. *J Epidemiol Community Health* 2004; 58: 131–5.

Vilija Malinauskienė, Vytautas Obelenis,
Diana Dopagienė

PSICHOLOGINIS TERORAS DARBE IR JO ĄTAKA MOKYTOJŲ ĄIRDIES BEI KRAUJAGYSLIŲ SISTEMOS LIGOMS

S a n t r a u k a

Āvadas. Pastarøj metøj moksliniai tyrinėjimai Vakarøj Europos ōalyse rodo, kad psichologinis teroras darbe (bulingas) turi reikōmės dirbanėjøj sveikatai. Mūsø darbo tikslas – ištirti psichologinio teroro paplitimà tarp Kauno viduriniø mokyklø mokytojøj ir àvertinti jo àtakà streso bei kai kuriøj gydytojøj patvirtintøj ligøj per pastaruosius dešis mēnesius atsiradimui.

Tiriamieji ir darbo metodai. Mūsø tyrime dalyvavo 738 Kauno viduriniø mokyklø mokytojai. 475 (64,4%) atsakė á norvegøj mokslininkø sukurtà Negatyvaus elgesio darbe klausimynà, taip pat á klausimus apie patiriamà stresà bei kai

kurias gydytojų nustatytas ligas per pastaruosius dešis mėnesius. Duomenys apdoroti taikant SPSS 10.0 statistinę programą ir logistinės regresijos analizę.

Rezultatai. 470 mokytojai užpildė visą klausimyną (63,4%). Reguliariai (keletą kartų per savaitę ir dažniau) psichologinį terorą darbe patyrė 2,6%, atsitiktinai – 23,0% mokytojų. Patyrusieji psichologinį terorą darbe beveik tris kartus dažniau skundėsi streso simptomais, palyginus su jo nepatyrusiais ($\text{DS} = 2,97$; 95% PI 2,11–4,17). Galimybės susirgti širdies ir kraujagyslių sistemos ligomis santykis buvo

1,31; 95% PI 1,01–1,72; logistinės regresijos analizės būdu atmetus amžių, lyties, rūkymo ir antsvorio įtaką, jis buvo 1,32; 95% PI 0,99–1,77.

Išvados. Ši pirmoji Baltijos ir Rytų Europos dalyse atlikta studija parodė, kad psichologinis teroras darbe yra paplitęs reiškinys ir turi įtakos širdies bei kraujagyslių ligoms atsirasti.

Raktažodžiai: psichologinis teroras darbe (bulingas), mokytojai, stresas, sveikatos sutrikimai, širdies ir kraujagyslių sistemos ligos