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SEÇÃO: ARTIGO

Effects of school violence and work context on teachers' health

Efeitos da violência escolar e do contexto de trabalho na saúde de docentes

Efectos de la violencia escolar y del contexto laboral en la salud de los profesores

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Abstract: The presented study aimed to understand how school violence and work context affect teachers' health. The study included 744 teachers of public schools. The instruments used for data collection were: Victimization Questionnaire, Work Context Assessment Scale, and Work-Related Harm Scale. Multinomial logistic regression analyses were performed. The results indicate that a high percentage of the participants considered the psychological and social harms as bearable. More than a third of the teachers evaluated physical harm more negatively. Gender and employment status were associated with physical harm. Physical aggression affected psychological harm. Verbal harassment and work organization were predictors of all types of harm. We concluded that models of work structuring, management practices, and being a victim of verbal harassment have a central role in teachers' health.

Keywords: school violence, work context, health, teachers

Resumo: O presente estudo visou compreender como a violência escolar e o contexto de trabalho repercutem sobre a saúde de professores. Participaram da pesquisa 744 docentes de escolas públicas. Os instrumentos utilizados foram: Questionário de Vitimização, Escala de Avaliação do Contexto de Trabalho e Escala de Danos Relacionados ao Trabalho. Foram realizadas análises de regressão logística multinomial. Os resultados indicaram que um percentual alto de participantes considerou os danos psicológicos e sociais como suportáveis. Mais de um terço dos professores avaliaram os danos físicos de forma mais negativa. Gênero e vínculo empregatício se mostraram associados aos danos físicos. As agressões físicas incidiram sobre os danos psicológicos. Assédio verbal e organização do trabalho foram preditores de todos os tipos de danos. Conclui-se que os modelos de estruturação do trabalho, as práticas gerenciais e o assédio verbal desempenham um papel central para a saúde docente.

Palavras-chave: violência escolar, contexto de trabalho, saúde, professores

Resumen: La encuesta presentada tuvo como objetivo comprender cómo la violencia escolar y el contexto laboral impactan en la salud de los docentes.

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Participaron del estudio 744 docentes de escuelas públicas. Los instrumentos utilizados fueron: Cuestionario de Victimización, Escala de Evaluación del Contexto Laboral y Escala de Daños Relacionados con el Trabajo. Se realizaron análisis de regresión logística multinomial. Los resultados indicaron que un alto porcentaje de los participantes consideraba soportables los daños psicológicos y sociales. Más de un tercio de los docentes evaluó los daños físicos de manera más negativa. El género y la situación laboral se asociaron con los daños físicos. Las agresiones físicas afectaron a los daños psicológicos. El acoso verbal y la organización del trabajo fueron predictores de todos los daños. Se concluye que los modelos de estructuración del trabajo, prácticas gerenciales y acoso verbal juegan un papel central en la salud docente.

Palabras clave: violencia escolar, contexto laboral, salud, profesores

School violence harms the health and workforce of teachers (Reddy et al., 2018). Most studies on this subject around the world have focused on aggression suffered by students (Espelage et al., 2013). In Brazil, there is also a predominance of research focusing on the aggression students suffer (Nesello et al., 2014), although violence is a problem affecting the whole school community. Studies conducted in Belgium, Canada, the United States, and South Korea showed that students are the main perpetrators of violent acts against teachers. In these countries, verbal victimization (threats, insults, among others) occurs with higher frequency (Galand et al., 2005; Wilson et al., 2011; McMahan et al., 2014; Moon & McCluskey, 2016; Kapa et al., 2018). Research conducted in Brazil presented similar results (Lima et al., 2017).

School violence has several effects on teachers, such as negative repercussions on their teaching effectiveness, classroom management (Wilson et al., 2011), work ability (Ceballos & Carvalho, 2019), and quality of life (Won & Chang, 2019). Additionally, other possible consequences of these aggressions are professional disengagement (Galand et al., 2007), burnout (Koga et al., 2015), job turnover, and even giving up the profession (Curran et al., 2017).

Negative repercussions for teachers' physical and mental health due to violence against them in school have been documented. In a study with teachers in French-speaking Belgium, Galand et al. (2005) indicated that depression was linked to student indiscipline, verbal victimization, and

a sensation of insecurity at school. They also observed that women showed more symptoms of depression. In a study conducted with the same public, Galand et al. (2007) concluded that teachers' reports of anxiety and depression were associated with student misbehavior, perceived violence at school, and verbal victimization.

Wilson et al. (2011) showed that, for Canadian teachers, covert violence, such as personal insults or name-calling, obscene gestures, and intimidation, as well as persecution attitudes, were associated with both physical (e.g., headache, fatigue) and psychological symptoms (e.g., guilt and sadness). In turn, overt violence, including threats and aggression attempts with or without weapons, were predictors of physical symptoms. They also found that women were more prone than men to report psychological symptoms when subjected to covert violence.

In an investigation with teachers in South Korea, Moon et al. (2015) found that emotional distress was associated with verbal victimization and non-contact physical aggression (for example: kicking or destroying objects in front of the teacher). Moreover, they noticed that women that suffered verbal victimization were more prone to emotional distress. In situations of noncontact physical aggression, teachers with a good relationship with students and those whose victimization involved a more significant number of students had a higher probability of showing emotional distress.

Studies in Brazil also indicate negative repercussions of school violence on teachers' health. Lima et al. (2017) noticed that teachers' physical and verbal victimization, aggression or threats with knives and firearms, and drug use at school were predictors of common mental disorders (CMDs). Machado and Limongi (2019) showed that CMDs were associated with gender, working two shifts, being a regular teacher in the education network, and having suffered psychological and moral aggression by students more than once.

It is also necessary to consider the work context to understand a teacher's health. Monteiro et al. (2019) showed that teachers' most significant risks of developing CMDs were associated with the

worst work context evaluations. Vivian et al. (2020) found that physical and psychic symptoms were associated with work organization. Investigations also showed that psychological harm was linked to stable employment status (Tundis & Monteiro, 2018) and professional exhaustion (Hoffmann et al., 2017). Physical harm was more present in female teachers (Hoffmann et al., 2017) and associated with longer careers (Vivian et al., 2020). Social harm, in turn, occurred more frequently among female teachers (Hoffmann et al., 2017) and regular teachers (Tundis & Monteiro, 2018).

Despite the evident repercussion of school violence on the teachers' health, only a few Brazilian studies approached this issue, which calls for further investigations to improve our understanding of these relationships and help build effective interventions and policies for promoting health. It is also fundamental to adequately characterize and measure the violence experienced by teachers. Brazilian studies are stuck with calculating the frequency with which perpetrators carry out aggressions but do not depict the victimizations. In another approach, the investigations present only a restricted set of aggressions putting together distinct categories.

The work context also needs to be precisely characterized. The distinction between professional relationships, working conditions, and work organization is fundamental to clearly define how the work context contributes to the teachers' illness. Considering these limitations, the current study examined how school violence impacts physical, psychological, and social damage suffered by teachers as a result of their professional activity. We also considered the work context and participants' demographics.

Method

Participants

The research was conducted through a partnership with the administration of a city in the state of Ceará, Brazil's Northeast region. According to Brazilian legislation, the municipalities are primarily responsible for early childhood education and

elementary school. The investigation was directed to a population of 2144 teachers that worked at public schools. This group was divided into the following levels of education: Elementary School II – ESII (n = 813); Elementary School I – ESI (n = 670); Early Childhood Education – ECE (n = 555); Adult Education – AE (n = 70); Special Education Service – SES (n = 36). The instrument used in the study was sent to all teachers. There was a response rate of 34.7%, and all answered questionnaires were used in the research.

Thus, the study included a sample of 744 teachers. Most participants were women (77.3%) aged 18 to 59 ($M = 35.67$; $SD = 8.94$). The mean monthly family income was R\$ 2383.22 ($SD = 1426.61$). Most teachers had temporary contracts with the public-school network (71.9%). The mean time working as a teacher was 12.21 years ($SD = 7.56$) and working in the municipal network was 9.34 years ($SD = 6.99$). Regarding the level of education, 39% worked in ESII, 31.3% in ESI, 25% in ECE, 3.1% in AE, and 1.6% were dedicated to the SES, which serves students with disabilities.

Measures

The measurements included four main categories: school violence, work context, work-related harms, and participants' demographics (gender, age, race, monthly family income, time working as a teacher, time working in the municipal network, employment status and level of education). All the instruments were self-reports.

School violence. The aggressions suffered by the teachers were measured using the victimization questionnaire (Galand et al., 2004; Galand et al., 2005). The questionnaire has a list of 12 violent acts. We also included a question on theft, totaling 13 sentences. We requested the participants to indicate how often they suffered each of the aggressions listed (from "never" to "four times or more"), considering the current and the previous school semester. Such acts were grouped into four categories to perform the analyses: verbal harassment, attacks on property, physical aggressions, and drug offers (Galand et al., 2004). Furthermore, they were asked to name

the perpetrators of each aggression (student, parent or guardian, teacher, school principal or coordinator, school staff member, someone from the local community, and others).

Verbal harassment includes being the target of rumors, mockery, racist and sexist insults, threats, intimidation, and moral harassment ($\alpha = .75$; e.g., "Have someone ever mocked you—tried to make fun of you through play or gestures?"). Attacks on the property include theft, robbery, and damage to personal objects ($\alpha = .73$; e.g., "Have you ever been a victim of theft—someone took an object without your consent but there was no contact with the thief and there was no aggression or threat against you?"). Physical aggression refers to being threatened with weapons or everyday objects and extortion. It also includes being assaulted with slapping, punching, kicking, and non-consensual sexual touches or caresses ($\alpha = .71$; e.g., "Have you ever been threatened with everyday objects — knife, scissors, chairs... — or weapons — dagger, brass knuckles or gauntlet, firearm, etc.?"). Drug offer at school was measured with only one item ("Has someone ever offered you drugs?").

Work context. The work context is characterized by three dimensions: work organization, working conditions, and socio-professional relationships (Mendes et al., 2007). Work organization includes the activity carried out by the workers, the distribution of work hours, and imposed quality and productivity goals, among others. Working conditions refer to the infrastructure and the support given to production, including working tools, furniture, remuneration, and access to information. Finally, socio-professional relationships include workers' interactions with colleagues, managers, and the (internal or external) customers. We measured participants' perception of work context with the Work Context Assessment Scale (WCAS).

The WCAS (Mendes et al., 2007) is a five-point frequency scale (from "never" to "always") with three factors: work organization ($\alpha = .91$; e.g., "The pace of work is extreme"), working conditions ($\alpha = .95$; e.g., "The physical environment is uncomfortable") and socio-professional relationships (α

= .92; e.g., "Lack of integration in the workplace"). Obtaining higher values implies a more negative perception of the work context. The WCAS allows the classification of the respondents as follows: means above 3.7 indicate "more negative evaluation, severe"; between 2.3 and 3.6 imply "moderate evaluation, critical"; and below 2.2 suggest "more positive evaluation, satisfactory".

Work-related harms. We approached work-related health harm from three dimensions: physical, psychological, and social (Mendes et al., 2007). Physical harm can appear as body aches, respiratory and digestive disorders, and changes in sleep patterns. Psychological harm is indicated by mood swings, irritability, a sense of loneliness, and other symptoms. Social harm materializes as aggressive behavior, and family conflicts, among others.

We measured work-related harms with the Work-Related Harms Scale (WRHS). The WRHS (Mendes et al., 2007) includes the factors physical harm ($\alpha = .92$; e.g., "Body ache" and "Changes in appetite patterns"), psychological harm ($\alpha = .96$; e.g., "Sadness" and "Bad mood") and social harm ($\alpha = .91$; e.g., "Conflicts in family relationships" and "Willing to stay alone"). The WRHS is a 7-point Likert scale (from "never" to "six times or more") so that higher scores indicate that the subjects perceived a higher occurrence of the corresponding harm. The scale also allows a qualitative evaluation of the results so that the respondents were grouped considering the following screening: means above 4.1 indicate "more negative evaluation, presence of occupational harm"; between 3.1 and 4.0 indicate "moderate to frequent evaluation, severe"; between 2.0 and 3.0 indicate "moderate evaluation, critical"; and below 1.8 indicate "more positive evaluation, bearable".

Procedures

Data collection. Teachers fulfilled a self-administered questionnaire sent through e-mail. The city's education department released the study among the teachers, presented its objectives, and explained that the researchers were available to clarify any doubt about the investigation.

Data Analysis. We ran the analyses with IBM SPSS version 22.0. We initially used descriptive statistics to evaluate teachers' perceptions regarding victimization, work context, and work-related harm. We utilized multinomial logistic regression (Fávero et al., 2009) to predict work-related harm.

Besides participants' demographics, we included in the model work context and victimization variables. The outcome variables, physical, psychological, and social harm, had four categories (1 = "more positive evaluation, bearable"; 2 = "moderate evaluation, critical"; 3 = "moderate to frequent evaluation, severe"; 4 = "more negative evaluation, presence of occupational harm"). These categories were kept for physical and psychological harm. Regarding social harm, levels 3 and 4 were joined ("severe to the presence of occupational harm") to avoid an almost complete separation of the data. This procedure allowed the adequate calculation of the estimations of maximum likelihood. Aiming to facilitate visualization, we included only the statistically significant variables in tables 1, 2, and 3 ($p < .05$).

Compliance with Ethical Standards

The project was evaluated by the Research Ethics Committee of the Federal University of Ceará and authorized under the number 2.266.460 according to all directives and regulatory norms described in the resolution CNS 510/2016. Informed consent was obtained from all individual

participants included in the study.

Results

Concerning victimization, 62.2% of the teachers suffered at least one aggression at school. Students were the most frequent perpetrators (42.5%). Besides, more than half sustained verbal harassment (53.6%).

Most teachers (56.3%) evaluated work organization as satisfactory, 32% as critical, and 11.7% as severe. Almost three-quarters (73.5%) of the participants perceived the working conditions as positive, 19.4% as moderate, and 7.1% as negative. Regarding socio-professional relationships, 82.4% of the teachers considered them satisfactory, 13.7% critical, and 3.9% severe.

Concerning the evaluation of physical harm ($M = 1.66$; $SD = 1.35$), almost two-thirds of the participants (63.0%) considered them bearable, 18.3% critical, 12.8% severe, and 5.9% showed occupational harm. The model for this variable ($\chi^2(54) = 278.95$, $p < .001$) had an explanatory power of 37% (pseudo $R^2 = .37$). The predictors were gender ($\chi^2(3) = 21.79$, $p < .001$), employment status ($\chi^2(3) = 8.32$, $p = .04$), work organization ($\chi^2(6) = 25.72$, $p < .001$) and verbal harassment ($\chi^2(3) = 20.72(3)$, $p < .001$). Teachers with regular contracts, those who perceived work organization as inadequate, who suffered verbal harassment more frequently, and women were likelier to have the worst evaluation of physical harm.

Table 1 – Estimations of the parameters predicting physical harm

		OR	95% CI
Moderate evaluation, critical ^a			
Gender (female)	Male	0.40**	[0.22, 0.72]
Employment status (temporary)	Regular	1.80*	[1.08, 3.00]
Work organization (satisfactory)	Critical	1.77*	[1.09, 2.89]
	Severe	2.10	[0.74, 5.91]
Verbal Harassment	-	1.10	[0.99, 1.22]
Moderate to frequent evaluation, severe ^a			
Gender (female)	Male	0.20***	[0.09, 0.47]
Employment status (temporary)	Regular	2.09*	[1.15, 3.79]
Work organization (satisfactory)	Critical	2.76***	[1.48, 5.12]
	Severe	5.06**	[1.70, 15.01]
Verbal Harassment	-	1.28***	[1.14, 1.42]

More negative evaluation, presence of occupational harm^a

Gender (female)	Male	0.21**	[0.06, 0.72]
Employment status (temporary)	Regular	1.62	[0.67, 3.94]
Work organization (satisfactory)	Critical	5.86**	[1.93, 17.75]
	Severe	15.18***	[3.36, 68.61]
Verbal Harassment	-	1.20*	[1.04, 1.39]

Note. OR = odds ratio, CI = confidence interval.

^aThe reference category is: "more positive evaluation, bearable".

* $p < .05$. ** $p < .01$. *** $p < .001$.

As for psychological harm ($M = 0.87$, $SD = 1.27$), 85.9% of the teachers evaluated them as bearable, 5.6% as critical, and 3.8% as severe. For 4.7%, the results pointed to the existence of occupational harm. The predictors for this type of harm were work organization ($\chi^2(6) = 26.62$, $p < .001$), verbal harassment ($\chi^2(3) = 14.93$, $p = .002$), and physical

aggression ($\chi^2(3) = 9.48$, $p = .02$). The model ($\chi^2(54) = 222.57$, $p < .001$) had an explanatory power of 39% (pseudo $R^2 = .39$). Teachers with a worse perception of work organization, that sustained more verbal harassment, and who suffered more physical aggressions were likelier to evaluate psychological harm more negatively.

Table 2 – Estimations of the parameters predicting psychological harm

		OR	95% CI
Moderate evaluation, critical ^a			
Work organization (satisfactory)	Critical	5.67***	[2.09, 15.43]
	Severe	4.44*	[1.06, 18.51]
Verbal Harassment	-	1.15*	[1.01, 1.32]
Physical aggressions	-	1.05	[0.08, 1.37]
Moderate to frequent evaluation, severe ^a			
Work organization (satisfactory)	Critical	3.90*	[1.09, 13.97]
	Severe	6.71*	[1.26, 35.6]
Verbal Harassment	-	1.22**	[1.05, 1.40]
Physical aggressions	-	1.38**	[1.08, 1.77]
More negative evaluation, presence of occupational harm ^a			
Work organization (satisfactory)	Critical	2.26	[0.59, 8.74]
	Severe	9.66**	[1.95, 47.80]
Verbal Harassment	-	1.23**	[1.08, 1.41]
Physical aggressions	-	1.33*	[1.04, 1.71]

Note. OR = odds ratio, CI = confidence interval.

^aThe reference category is: "more positive evaluation, bearable".

* $p < .05$. ** $p < .01$. *** $p < .001$.

For social harm ($M = 0.73$, $SD = 1.10$), the evaluations were as follows: 87.5% more positive, 7.7% moderate, 2.2% moderate to frequent, and 2.7% more negative. With an explanatory power of 44% (pseudo $R^2 = .44$), the model ($\chi^2(36) = 221.84$, $p < .001$) had the following predictors: work organization ($\chi^2(4) = 12.42(4)$, $p = .01$) and verbal harass-

ment ($\chi^2(2) = 20.41$, $p < .001$). The increase in the likelihood of having worse results in social harm was associated with more inadequate perceptions of work organization and a higher frequency of verbal harassment.

Table 3 – Estimations of the parameters predicting social harm

		OR	95% CI
Moderate evaluation, critical ^a			
Work organization (satisfactory)	Critical	3.83**	[1.48, 9.89]
	Severe	6.22**	[1.76, 21.92]
Verbal Harassment	-	1.23***	[1.09, 1.38]
Severe to the presence of occupational harm ^a			
Work organization (satisfactory)	Critical	2.68	[0.73, 9.92]
	Severe	4.23	[0.85, 21.16]
Verbal Harassment	-	1.30***	[1.13, 1.49]

Note. OR = odds ratio, CI = confidence interval.

^aThe reference category is: "more positive evaluation, bearable".

* $p < .05$. ** $p < .01$. *** $p < .001$.

Discussion

This study aimed to understand the repercussion of school violence on teachers' health considering work context and sociodemographic variables. As for school violence, more than half of the sample stated to have been victimized more than once. The main perpetrators were students, and the most recurrent aggressions were related to verbal harassment. These findings were similar to those of Galand et al. (2005). One can find a more detailed presentation of these results and an amplified discussion about them in Pinheiro et al. (2020). The findings also showed that work organization was the factor of work context with the worst teacher evaluation. Tundis and Monteiro (2018) and Hoffmann et al. (2019) found similar results.

Moreover, the results indicate that most participants considered the psychological and social harms bearable. In turn, more than a third of the teachers evaluated physical harm more negatively. These findings are similar to those of Tundis and Monteiro (2018). One can explain the worst perception of physical symptoms by the difficulty in associating psychological and behavioral symptoms as resulting from work, which may underestimate them. This type of symptom is generally treated as personal and, therefore, understood as having to be managed outside working hours. This is added to the fact that it is unusual for organizations to diagnose and take responsibility for mental illness (Borsoi, 2007).

Gender was a predictor of physical harm. This

study found a higher probability of women evaluating such harm more negatively. For Hoffmann et al. (2017), female teachers are more likely to suffer physical and social harm. Although most of the teachers are women (Vianna, 2002; Siqueira & Ferreira, 2003; Neves et al., 2019), men still have more prestigious positions such as school management (Araújo et al., 2006; Neves et al., 2019). Thus, the devaluation of the teaching profession contributes to higher cases of illness among female teachers (Neves et al., 2019).

The findings indicate that physical aggressions predicted psychological harm. This may be related to disorders caused by exposure to traumatic or stressful events, such as being physically attacked. These psychiatric conditions are characterized by anxiety, fear, and aggressiveness. They harm social relationships and work ability (Martins-Monteverde et al., 2017).

Employment status predicted physical harm. Teachers with regular contracts were more likely to have physical harm. This result goes against what Tundis and Monteiro (2018) found. They showed that regular employment status correlates to psychological and social harm. This finding of the present study may be related to the systemic precariousness of the labor market.

Despite the losses to social security and the lack of labor guarantees, precarious employment improves workers' living conditions in regions where the job market does not offer formal contracts (Lima, 2010). We conducted the study in a

medium-sized city in one of the poorest regions of Brazil. The city's employability conditions are bad. Thus, even a precarious job would be desirable in the face of unemployment or occupations with lower remuneration and worse working conditions. Consequently, temporary teachers would associate less health damage with their work context. Moreover, the private school network is small, therefore unable to absorb this workforce.

Work organization predicted physical, psychological, and social harm. These findings are corroborated by Monteiro et al. (2019) and Vivian et al. (2020), who observed similar results regarding physical and psychological symptoms in teachers. In other investigations dealing with the repercussion of teachers' work on health (Carlotto & Câmara, 2015; Tostes et al., 2018), only occasional aspects of work organization were linked to teachers' health problems. This discrepancy in results is justified since those investigations not clearly defined the work organization, so they only addressed some of its characteristics. In the study herein presented, we examined together several of its facets.

Verbal harassment was also a predictor of physical, psychological, and social harm. This finding is in line with several studies that considered the relationship between school violence and teachers' health (for example, Galand et al., 2005; Wilson et al., 2011; Moon et al., 2015).

Strengths and Limitations

The investigation included a well-defined list of aggressions, which allowed an adequate characterization of the violence against teachers. There was also a proper definition of the dimensions of work context, which allowed a more precise measurement. Concerning limitations, the support of the City's Education Secretariat in promoting the research may have decreased the number of volunteers. It also may have led the participants to better evaluate the work context and violence indicators because they may have perceived the investigation as an institutional evaluation. Thus, they may have felt intimidated to point out negative aspects, even with the guarantee of anonymity when answering the questionnaires.

Finally, by considering only the teachers' reports, we limited the possibility of measuring contextual data of the community and the school that would allow the performance of multilevel analyses. Among other things, the socio-economic indicators of the community in which the schools were inserted could have been considered.

Recommendations for Future Research

The findings of this study offer several possibilities for future investigations. Further studies may be conducted with teachers that suffered physical aggression to understand in more detail the psychological effects caused by a such attack. It is also possible to investigate whether aggressions from students, principals, and other perpetrators have distinct repercussions on teachers' health. Given the relevance of verbal harassment shown by the results of this research, it would also be relevant to design investigations on the prevalence of workplace bullying and its repercussion on health.

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