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Abstract

Background: Exposure to violence during childhood can have an adverse effect on health and well-being.

Aims: To determine the frequency of exposure to violence among ninth-grade high school students in Kars, Turkey, and violence-related factors. Also, to examine whether frequency of exposure to violence differed with respect to school type.

Methods: We included 1730 ninth-grade high school students in Kars in this cross-sectional study that used stratification and cluster sampling methods, and 2 questionnaires. The first questionnaire was used to determine the socioeconomic and sociodemographic characteristics of the students. The second questionnaire was the Exposure to Violence Scale. $\chi 2$ and backward logistic regression analyses were performed to determine the independent variables among potential risk factors and exposure to violence.

Results: Exposure to violence was found to have a prevalence of 65.8% among ninth-grade high school students. Binary analysis revealed that frequency of exposure to violence was differed significantly by type of high school, place of residence, type of family, and parents' occupational status. Backward logistic regression showed that type of high school and type of family were risk factors for exposure to violence.

Conclusion: The rates of exposure to violence were high among ninth-grade high school students in Kars. Preventive, protective and ameliorating intervention steps should be taken more seriously.

Keywords: high school, students, Turkey, violence

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Introduction

The World Health Organization defines adolescent as any individual between the ages of 10 and 19 years (1). This age group constitutes 17.2% of the total population of Turkey (2). Adolescence is a complicated and problematic period, in which several mature characteristics are gained, and physical, mental and social changes are experienced simultaneously (3). Adolescents see changes in both their bodies and personal characteristics, which begin to be shaped at this time. Although these changes are personal, the effects on family and the environment cannot be ignored (4).

Violence is an important problem in many countries and is an important cause of mortality and morbidity (5–10). Despite a drop in the number of deaths caused by firearms and violence, firearm injuries are the second most common cause of death among adolescents and young adults in the United States of America (USA) (5). In Turkey, there are no programmes to monitor adolescents' violent behaviour and exposure to violence. The US Centers for Disease Control and Prevention (CDC) in the U.S. developed the Youth Risk Behavior Surveillance System (YRBSS) in 1989 to observe the health risk behaviours that lead to mortality, morbidity and social problems among adolescents and adults. The YRBSS observed behaviours in 6

categories: (1) behaviours that contribute to unintentional injury and violence; (2) sexual behaviours related to unintended pregnancy and sexually transmitted diseases (human immunodeficiency virus); (3) alcohol and other drug use; (4) tobacco use; (5) unhealthy dietary behaviour; and (6) inadequate physical behaviour (11).

Unfortunately, schools are environments that are central to the acquisition of violent behaviours. Violence is internalized through social learning and is taken for granted, as it is frequently encountered in the school environment (12–14). In a study conducted by the Turkish Parliamentary Investigation Committee in 2007, data collected in high schools and equivalent institutions showed that 35.5% of students engaged in physical violence, 48.7% in verbal violence, 27.6% in emotional violence and 11.7% in sexual violence (15). Some studies have indicated that engagement in violence and exposure to violence vary significantly by school type (16–18). Despite the importance of the issue and various field studies, the results obtained have only been implemented recently in educational policies (14).

This study aimed to detect the frequency at which high school students were exposed to violence in the province of Kars, Turkey, to determine the factors that are related to exposure to violence, and whether violence varies by school type.

Methods

Study design and participants

This cross-sectional study included 5085 ninth-grade students in the province of Kars, Turkey, between 2017 and 2018. The formula $n = Nt^2pq / (d^2(N–1) + t^2pq$ was used to calculate the sample size necessary. The sample size was calculated to be 1634 students, considering 50% prevalence, 95% confidence level and 2% deviation. The sample was distributed based on school type and number of students in the school: 720 students in Anatolian high schools, 541 in vocational high schools and 373 in Islamic divinity high schools. However, the sample was enlarged by 10% due to absences and refusals to participate. Therefore, the sample size was set at 1798 students. The study was limited to the ninth grade, as it was difficult to reach students and classes in terms of time and facilities.

Instrumentation

The research data were collected using the data collection form and The Exposure to Violence Scales. A data collection form was administered to all of the classrooms during lessons and took 45–60 minutes to complete. The data collection form was developed by the researchers and consisted of 15 questions that evaluated individual and parental characterizations of the students. In the students' individual characterizations, age, gender, residential area and high school type were evaluated. In the students' parental characterizations, family type, number of

persons living in the family, number of siblings, whether the parents were biological, occupation of parents, educational level of parents and income status of parents were evaluated. High school types were Islamic divinity high school, Anatolian high school and vocational high school. Islamic divinity high schools are institutions that provide education for students who are interested in religious issues. Anatolian high schools are institutions that prepare students for higher education and provide foreign language education. Vocational high schools are institutions that provide vocational education together with general cultural lessons. The period of study in each high school is 4 years. For family income status, the students were asked to select one of the following expressions: 'total income coming home is insufficient for the home's subsistence:, "it barely suffices for the home's subsistence" and "it comfortably suffices for the home's subsistence".

The Exposure to Violence Scales consisted of 2 4-point Likert-type scales: the Recent Exposure to Violence Scale (REVS; 26 items) and the Past Exposure to Violence Scale (PEVS; 12 items). There were a total of 38 items, ranging from "never" to "almost every day". The scales were first developed by Singer et al. in 1995 (19), who later added some items and finalized the scales (20). The validity and reliability of the Exposure to Violence Scale were verified for the Turkish context by Kaya and Bilgin in 2012 (21). The reliability coefficients of the factors encompassing different types of violence in the REVS were: witnessing violence in the school environment (α = 0.89); being exposed to violence at home (α = 0.76); witnessing violence at home (α = 0.67); being subjected to violence in the school environment (α = 0.86); being subjected to/witnessing violence with a knife or firearm (α = 0.84); and sexual abuse (α = 0.65) (19). The reliability coefficients of the factors encompassing different types of violence in the PEVS were: witnessing violence in the past (α = 0.84); being subjected to violence in the past (α = 0.81); and being exposed to/witnessing violence with a knife or firearm (α = 0.81) (21).

Ethics

Approval was first obtained from the Ethics Committee of the Faculty of Medicine at Kafkas University (dated 1 February 2017, number 80576354-050-99-14) between April 2017 and May 2017. Prior to implementation, the researchers informed the students about the content of the study and that participation would be on a voluntary basis.

Data analysis

SPSS version 22.0 software was used to analyse the data. Frequencies and percentages were used in the descriptive table, and the $\chi 2$ test was used for binary comparisons (at a confidence level of P

Results

The student participant sample comprised 807 (46.6%) students from Anatolian high schools, 582 (33.6%) students from vocational high schools and 341 (19.7%) from Islamic divinity high

schools (Table 1). It was found that 897 (53.6%) were male and 777 (46.4%) were female; 708 (41.2%) were from provincial or district centres and 1012 (58.8%) were from villages or small towns; 511 (29.7%) lived with their extended family and 1210 (70.3%) lived in an nuclear family unit; 1704 (98.8%) had a biological mother and 20 (1.2%) had a stepmother; and 1695 (99.4%) had a biological father and 11 (0.6%) had a stepfather. The mothers of 139 (8.1%) worked in the private sector, for the state, or whenever they could find work; the mothers of 242 (14.1%) were artisans or farmers; and the mothers of 1335 (77.8%) were unemployed. The fathers of 382 (22.4%) worked in the private sector or for the state; the fathers of 977 (57.3%) were artisans or farmers; and the fathers of 346 (20.3%) were unemployed. The income of 155 (9.0%) was insufficient; the income of 679 (39.5%) was barely enough; and the income of 884 (51.5%) was comfortable enough. The mothers of 493 (28.7%) did not complete primary school; the mothers of 650 (37.8%) were primary school graduates; and the mothers of 576 (33.5%) were middle school or above graduates. The fathers of 150 (8.7%) did not complete primary school; the fathers of 535 (31.1%) were primary school graduates; and the fathers of 1035 (60.2%) were middle school and above graduates. The average students' age, number of persons living in the family and number of siblings were 15.25 (standard deviation 0.68) years, 6.18 (2.52) and 3.26 (1.85), respectively. Type of high school, place of residence, family type and parental occupation all had a significant effect on students' exposure to violence (all P 0.05).

Of the students who responded yes to at least one of the items of each dimension in the REVS (Table 2), 398 (23.0%) had witnessed violence at home; 303 (17.5%) had been exposed to violence at home; 964 (55.7%) had witnessed violence in the school or environment; 506 (29.2%) had been exposed to violence in the school or environment; 339 (19.6%) had witnessed or been exposed to violence with a knife or firearm; and 292 (16.9%) had witnessed or been exposed to sexual abuse. In response to the PEVS (Table 3), these rates were: 749 (43.3%) had witnessed violence in the past; 427 (24.7%) had been exposed to violence in the past; and 304 (17.6%) had witnessed or been exposed to violence with a knife or firearm.

Backward logistic regression analysis showed that when Islamic divinity high school was taken as a reference, students attending Anatolian high schools were exposed to 3.54-fold more violence (Table 4). When the nuclear family type was taken as a reference, students with an extended family type were exposed to 1.31-fold more violence. The model explains 11.1% of exposure to violence.

Discussion

This is the first study to analyse the prevalence of exposure to violence among adolescents (at home, at school or in the environment where they live) in the province of Kars, Turkey. The aim was to evaluate the frequency of exposure to violence and the effect of some variables on exposure to violence.

We found that 23% of students had witnessed violence at home and 17.5% had been exposed to violence at home. This is similar to a study of the United Nations Children's Fund, which found that > 20% of participants were exposed to severe punitive treatment at home (22). The home is a place where teenagers internalize values that will form their behaviours and attitudes in the following years. In societies in which violence is used as a form of discipline and problem-solving at home, an expected finding would be that children are exposed to violence as witnesses and victims from a young age upward.

We found that 55.7% of the students were witnesses to violence at school or the environment in which they lived, and 29.2% were exposed to violence directly at school/the environment in which they sat in the past year. In El Salvador, about 23% of students reported that they could not go to school one or more days due to their concerns about safety (23). According to data from the CDC in 2019, in the USA, 1 in every 5 adolescents is exposed to bullying at school (24). According to the results of the YRBSS (2007–2017), 19% of students were bullied at school (25). Half of seventh- to ninth-grade students in Yemen have stated that they were exposed to physical abuse at school at least once (26). In Lebanon, 76.4% of teenagers aged 10–18 years were exposed to physical violence, and 81.2% of them were exposed to verbal/emotional violence at least once (27). The present study found lower rates than those carried out in Yemen and Lebanon, which can be explained by the conflicts in these regions. The low rates in the USA and El Salvador could be explained by the fact that the data only reflect bullying.

The present study showed that 19.6% of students witnesses or were exposed to armed/knife attacks in the past year. In the USA, 6% of school students have been threatened or injured at school at least once with a weapon (gun, knife or stick) (25). This rate was higher among boys (7.8%) than girls (4.1%). In another study, the rate for ninth-grade students was 8.5%; 9.3% among boys and 7.7% among girls (28). In the present study, the rate of exposure to knife and firearm attacks was 4.4% and 3.6%, respectively, for boys and girls. This difference, however, may stem from the inclusion of sticks as weapons in the American data (28).

The present study found that 9.4% of the students were exposed to sexual abuse and 13.9% witnessed sexual abuse. A study in Turkey in 2007 found that 15.8% of cases of sexual violence occurred in the previous 3 months (29). YRBSS found that 10.4% of students in the USA in 2013 were forced by their beloveds or people they had dated to engage in kissing, touching or sexual intercourse, through the use of physical violence and against their wishes (28). In the same study, this rate was found to be 10.9% for ninth-grade students. YRBSS found that 9.7% of students in 2017 had been forced against their wishes, through the use of physical violence, to engage in kissing, touching or sexual intercourse at least once during the 12

months before the survey (25). In a study conducted in Kolkata, India, 12.7% of teenagers experienced instances of sexual violence towards them (30). The results of the present study are similar to the American studies but lower than the Indian study. The high rate of child abuse in Kolkata may be due to cultural beliefs and practices in Indian society.

We found that ~50% of the students witnessed violence, and ~25% were exposed to it in the past. This is lower than in the study of Wagner et al. who found that 47% of students were exposed to violence and 71% of them witnesses it (31). The reason for the lower results in the present study could be linked to the ongoing occupation and conflict in Israel and Palestine, since the study of Wagner et al. was conducted in the West Bank and East Jerusalem. Additionally, violence by police or soldiers might have increased exposure to violence in that study.

The students' demographic characteristics, type of school, socioeconomic status and school type were among the factors affecting students (16,32,33). The present study found a relationship between high school type, residential area, family type and parental occupation and being exposed to violence. According to logistic regression analysis, high school type and family type were also shown to be predictive factors for exposure to violence. Accordingly, the students studying at the Anatolian high schools and those with extended families were at risk of exposure to violence. The Anatolian high schools have more students compared with other types of high school. Having a high number of students can cause teachers to spend less time with them and therefore not educate each student sufficiently. The students who do not receive sufficient education and interest may exhibit less responsible behaviours. Therefore, the rates of students being exposed to violence at the Anatolian high schools may be more than in the other high schools. Being subject to violence in the extended family can be explained by the social learning theory. Students living in extended families may be exposed to more violence or witness it more often since they live with more people. This condition can also leave students living in an extended family unprotected against violence in other areas. In a study in Yemen, the important precursors of physical abuse were male gender and extended family type, which is similar to the present study (26). In a study in Lebanon, gender, residential area and school type were determined as predictive factors for exposure to violence (27).

One of the strengths of the present study was that it included a high number of students to analyse the prevalence of exposure to violence among high school students in Eastern Turkey. Another strength was that it provided information about not only the existence of violence, but also the extent of different types of violence (verbal, physical, with a knife or firearm, or sexual) and the place of exposure (home, school, or the environment where they live). This study had some limitations. First, the study sample was limited to the ninth grade. This meant that we were not able to compare exposure to violence among students in other grades. Second, we reached only 91.67% of the students targeted in the Islamic divinity high schools (341/372) since the

students did not attend lessons, were in practice, did not want to participate in the study, or incompletely filled in the data forms, although a 10% loss rate was added to the study sampling. This resulted in the ratio of students belonging to other high school types to be higher than those belonging to the Islamic divinity high schools. Finally, violence frequency was limited by the characteristics of the exposure to violence scales.

Conclusion

There was a high level of exposure to violence among high school students in Kars. The rate of exposure to violence was greater for students who attended Anatolian high schools and had extended families. Violence is a problem that can be prevented, and this study emphasizes the need for a 4-stage public health approach: identifying the problem; identifying its reasons and risk factors; designing and testing interventions; and increasing the number of measurement tools to evaluate the effectiveness of the interventions (34).

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Prévalence de l'exposition à la violence et facteurs associés parmi les élèves du secondaire en Turquie

Résumé

Contexte : L'exposition à la violence pendant l'enfance peut avoir un effet négatif sur la santé et le bien-être.

Objectifs : Déterminer la fréquence de l'exposition à la violence parmi les élèves de neuvième classe d'enseignement (correspondant à l'âge de 15 ans) à Kars, en Turquie, et les facteurs liés à la violence. Il s'agissait par ailleurs d'examiner si la fréquence de l'exposition à la violence différait en fonction du type d'école.

Méthodes : Nous avons inclus 1730 élèves de cette classe du secondaire à Kars dans cette étude transversale qui a utilisé des méthodes de stratification et d'échantillonnage en grappes, ainsi que deux questionnaires. Le premier questionnaire a été utilisé pour déterminer les caractéristiques socioéconomiques et sociodémographiques des élèves. Le deuxième

questionnaire était l'échelle d'exposition à la violence. Des analyses du χ2 et de régression logistique ascendante ont été réalisées afin de déterminer les variables indépendantes parmi les facteurs de risque potentiels et l'exposition à la violence.

Résultats : Il a été constaté que la prévalence de l'exposition à la violence s'élevait à 65,8 % chez les élèves de la neuvième classe d'enseignement. L'analyse binaire a révélé que la fréquence de l'exposition à la violence différait considérablement selon le type d'école secondaire, le lieu de résidence, le type de famille et le statut professionnel des parents. La régression logistique inverse a montré que le type d'école secondaire et le type de famille étaient des facteurs de risque pour l'exposition à la violence.

Conclusion : Les taux d'exposition à la violence étaient élevés parmi les élèves de cette classe du secondaire à Kars. Les mesures de prévention, de protection et d'amélioration des interventions devraient être prises plus au sérieux.

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