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Beena Shawki,[1] Tariq Al-Hadithi[2] and Nazar Shabila[2]

[1]Erbil Directorate of Health, Erbil, Iraq. [2]Department of Community Medicine, Hawler Medical University, Erbil, Iraq (Correspondence to: N. Shabila: nazarshabila@gmail.com).

Abstract

Background: Substance use and bullying are prevalent among adolescents and have a wide range of adverse outcomes. The association of bullying with substance use has not been examined in Kurdistan and Iraq, which have suffered from the effects of long-term conflict and economic hardship.

Aims: To examine the association between each form of bullying among adolescents and substance use.

Methods: This cross-sectional study was conducted in a sample of public schools in Erbil City, Iraq in 2017. The study involved 1070 adolescents selected from 35 schools using a multistage cluster sampling method. A self-reported close-ended questionnaire was used for data collection. Male and female students attending grades 7–12 and aged 13–18 years were included.

Results: The overall prevalence of bullying behaviour was 60.0%; 30.8% were victims, 26.2% were bully-victims, and 3.0% were bullies. There was a significant association between different forms and categories of bullying and substance use. The strongest association was with the students involved in sexual bullying, followed by racial and cyber bullying. The strongest association between bullying and substance use was found in the bully-victim category, followed by victims and bullies.

Conclusions: Substance use and bullying behaviour seem to be widespread problems among

adolescents in Erbil schools. Substance use is significantly associated with different categories of bullying behaviour. There is a need for effective school-based preventive interventions to tackle these problems. Future research needs to examine the likely direction of the association between bullying and substance use.

Keywords: school bullying, school violence, adolescent bullying, victimization, substance use.

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Introduction

Bullying is a frequent and recognized problem for children and adolescents (1). Children and adolescents are often surveyed in schools where they spend most of their time, and they are easily accessible (2). The prevalence of bullying varies significantly among countries as well as among sex and age groups. The global prevalence of bullying among children and adolescents varies from 8% to 32% (3). Bullying is not just a social problem but also a health problem (4,5). There is strong evidence for a causal association between bullying victimization and health problems, including anxiety, depression, poor health, different forms of substance use and their consequences, and suicidal ideation and behaviours (6).

Smoking, alcohol use, and the use of other substances is a worldwide problem that affects many children and adolescents (7). Research has independently established the high occurrence of bullying and substance use and their harmful consequences among adolescents (8,9). Research assessing the association between bullying and substance use in adolescents has suggested some inconsistencies and identified variables affecting the inconsistencies

(6,8–12). Most of the research in this field indicates that there is a link between bullying and substance use (8,9,13). Most of the previous studies that have assessed the relationship between bullying and substance use have been cross-sectional studies. One clear research gap is the directionality of the association (9). Research assessing the temporal association between the 2 events has suggested bidirectional and causal paths related to the existence of an interactive process (6,11).

Minimal research exists about bullying and its association with substance use in Iraq and the Kurdistan Region. In a study from Baghdad, around 39% of secondary school students reported bullying victimization, and 21.5% reported sexual victimization. Bullying and victimization were significantly associated with substance use and failure in school (14). Iraq, and the Kurdistan Region, in particular, have experienced structural violence and long years of conflict that might have affected people's behaviour. The region has witnessed issues related to population displacement, economic hardship, widening of the economic gap, and a rapid rise in the use of poorly controlled technology and social media. This type of environment can trickle down into schools and behaviours of individuals and might affect violence and substance use. Even if consistent evidence has suggested the presence of an association between bullying and substance use elsewhere, the contextual differences suggest the importance of exploring this association, specifically in the Kurdistan Region. Therefore, this study aimed to examine the association between each form of bullying among adolescents and substance use (smoking, alcohol use and drug use) in a representative sample of school adolescents in Erbil City.

Methods

Setting

This cross-sectional study was conducted in secondary schools in Erbil City in the Kurdistan Region of Iraq. There were 214 public secondary schools in Erbil in 2017, with a total of 84 378 students in grades 7–12.

Participants

This study involved students of both sexes aged 13–18 years in grades 7–12 attending public schools across Erbil. The students were recruited by a 3-stage cluster-sampling technique. The schools in Erbil were divided into 6 groups according to the city municipalities. From each municipality, schools were selected using a random number table. The number of schools selected from each municipality was proportional to the number of students within that municipality. A total of 35 schools were selected. The sample size was calculated using a population size of 84 378 students in grades 7–12, a 95% confidence interval, 5% allowed error, a prevalence rate of bullying of 39.1% as reported previously (14), and a design effect of 3. The calculated sample size was 1092. The sample was increased to 1350 to account for nonresponse, recording errors, and parenteral refusal of consent. From each selected school, a single class was selected randomly, and all students in that class were included in the study.

Measures

A closed-ended questionnaire was specifically designed based on literature review and expert opinion. We used the standard questions from 3 other studies that had assessed the association of bullying with substance among adolescents in different settings in Italy and the United States of America (USA) (9,13,15). The questionnaire included 5 parts. (1) Demographic characteristics of the participants. (2) Socioeconomic characteristics. The data from this part were used to determine the socioeconomic status of each student using a reliable and validated method for the Iraqi context designed by Omer and A-Hadithi (16). (3) Students' smoking, alcohol use, and use of tramadol, trihexyphenidyl or carisoprodol. These specific drugs were included in the questionnaire, as research has shown that the diverted or illicit drugs are the leading drug problem in Iraq (17,18). The questions about substance use were dichotomized (Yes/No). Smoking on a daily basis, ever drinking alcohol, and ever using any illegal drugs were considered Yes answers. (4) Students being victims of bullying. (5) Students being bullies. In-school bullying was classified into 6 primary forms of physical, verbal, relational, cyber, racial and sexual (13). Students were categorized into 4 groups of bullies, victims, bully-victims and uninvolved (19). The questionnaire was translated to the local Kurdish language and Arabic to ensure all students correctly understood it. The translation was verified by a native Kurdish speaker and a native Arabic speaker fluent in English through back-translation to English. The validity and applicability of the questionnaire were tested by a pilot study, which showed an internal consistency (Cronbach's) estimation of 0.77 for the Kurdish version and 0.75 for the Arabic version. The reliability coefficient was 0.80 for the Kurdish version and 0.77 for the Arabic version.

Procedure

The counselling specialist at the school attended the data collection in each class. The researcher explained the nature of the research, and a definition of bullying was given to the students. Written informed consent was distributed to the students to be signed by their parents or other household guardians and returned the day after. On the next day, students were asked to complete the closed-ended questionnaire after obtaining their assent. The questionnaires were anonymously completed to ensure confidentiality and to obtain honest answers. Data collection was conducted from January to March 2017. The Research Ethics Committee at Hawler Medical University approved the research protocol. Institutional approval to access the schools was obtained from Erbil Directorate of Education.

Analysis plan

SPSS version 19 was used for data entry and analysis. The $\chi 2$ test of association was used to compare proportions, and Fisher's exact test was used if the expected count of > 20% of the cells was

Results

Demographic characteristics

Of the 1350 students from the 35 schools invited to participate in the study, 1150 completed the questionnaire, with a response rate of 85.2%. Of the 200 refusals, 144 (72%) were due to parental lack of consent. Eighty (6.95%) questionnaire forms were discarded because of improper filling, making the sample 1070 students and reducing the response rate to 79.3%. The mean (standard deviation) age was 15.56 (1.41) years, and there were 554 (51.8%) male and 516 (48.2%) female students, with a female to male ratio of 0.9:1 (Table 1). Students aged 15–16 years comprised the highest proportion of the participants (518; 48.4%). All students were Muslims, and most of them were Kurds (988; 92.3%). Most of the students were from the middle socioeconomic class (581; 54.3%).

Prevalence of substance use in relation to form and category of bullying

Of the 1070 students, 642 were involved in general bullying behaviour with an overall prevalence of 60.0%; 330 students (30.8%) were victims, 280 students (26.2%) were bully-victims, and 32 students (3.0%) were bullies

(Table 2). The prevalence of smoking and alcohol use among students involved in bullying [159 (24.8%) and 23 (3.6%), respectively] was significantly higher compared to that in students not involved [31 (7.2%) and 1 (0.2%), respectively]. All 12 drug users were involved in bullying. The highest prevalence of smoking, alcohol use and drug use were in the bully-victim category, followed by victims and bullies. The prevalence of substance use was significantly higher in students involved in bullying than in those not involved in all forms of bullying. The highest prevalence of all types of substance use was among students involved in sexual bullying, followed by racial and cyberbullying.

Association of substance use with form and category of bullying

Univariate logistic regression analysis showed that bullying behaviour categories of victim and bully-victim in general and physical bullying were significantly associated with substance use (P Table 3
). For all other forms of bullying behaviour, all categories of bullying were significantly associated with substance use. In multiple logistic regression, the strength of the association was slightly lower for all the categories. However, most of the significant associations were maintained, except for that between substance use and the bully only category in social bullying, cyberbullying, and racial bullying.

Discussion

In this study, students who were victims of bullying, bullies, and bully-victims had a significantly higher prevalence of substance use, including smoking, alcohol use and drug use. Similar results were reported in low- and middle-income countries (4), Italy (13), and the USA

(5,20,21). The literature has reported a similar significant association between bullying only and smoking (22,23), and other studies have concentrated on alcohol use (20) or drug use (9,24). Although most researchers reported an increased rate of substance use among students who were involved in different categories of bullying, the details of the relationship between substance use and bullying is unclear and varies greatly throughout the literature (5).

Similar to other studies, our study revealed that the highest prevalence of the 3 types of substance use was in the bully-victim category (13,21,25,26). Other studies have reported that bully-victims had a significantly higher risk for only cigarette smoking (27), alcohol use (28), or drug abuse (9) than had victims and those not involved in bullying. The highest rate of substance use in the present study was among the bully-victims category, followed by victims and bullies. Another study reported that bullies were at a higher risk for substance abuse than were victims, making the sequence bully-victims, followed by bullies and victims (20). This finding is in contrast to the results of other studies that reported higher substance use among bullies than victims (9,21). The highest rate of substance use among the bully-victims category alone without including victims suggests some interactive or moderator/mediator effect rather than a triggering effect.

Being a bully in general, and physical bullying, were not significantly associated with substance use, which is in contrast to the results of other studies (29,30). A previous cross-sectional study maintained that smoking might be a marker to identify bullies (26). Lack of such a significant association in our study could be related to having a small number of participants in the bully-only category.

There is no clear evidence regarding victims (5), and the correlation between victimization and substance use has been inconsistent in the literature (5,12). Our results showed that being a victim was significantly associated with substance use. This agrees with other studies that have revealed that victims of bullying display a higher risk for cigarette smoking (25), alcohol use (9,13,24), drug abuse (31), or all substance use (9,21,25). However, researchers have found that victims were less likely to be engaged in cigarette smoking (28) or alcohol use (27) than students not involved in bullying. However, other studies revealed no association at all, as being a victim did not predict substance use (29,32). Among victims, it may be that students smoke cigarettes to reduce the anxiety produced by the constant aggression, or that they use substances to improve their social image among their peers (5). Another explanation is that victimized adolescents might turn to substance use to become more accepted by their peers or as a means to become members of “the group”, and ultimately, avoid victimization (13). Also, victims might turn to substance use as a coping mechanism with the strong emotional feelings that they experience, such as sadness or irritability, and dealing with the anxiety resulting from

attacks and rejection by their peers (21).

In all forms of bullying, bullies, victims and bully-victims had a significant association with smoking, alcohol use and drug use. Similarly, a previous study showed that physical, verbal and relational bullying had reciprocal relations with substance use (33). Other studies have revealed a positive association between substance use and physical bullying (34) and victimization (24). Similar findings have also been reported for relational victimization and cyberbullying and cyber victimization (24,35).

In the current study, the high prevalence of substance use, particularly smoking, and bullying behavior, in Erbil City was accompanied by significant associations between substance use and the different categories and forms of bullying behaviour. These alarming findings might be related to different contextual factors that have affected the Kurdistan Region and Iraq as a whole. The long years of conflict and structured violence, together with the unstable security situation, economic uncertainty, and social and demographic changes due to population movement and displacement might have influenced such behavioural change, particularly among vulnerable adolescent groups. Interventions directed at preventing or reducing substance use and bullying behaviour in the Region should consider the importance of these contextual factors and need to adopt socially and culturally acceptable and effective methods.

Our study provides an insight into the problems of bullying and substance use and the association between these problems in Iraq. These findings may help with designing effective preventive interventions such as school-based interventions involving classroom curricula and social skills training. Our study can be used as a case study for other countries potentially facing similar problems of bullying and substance use. When examining the association between bullying and substance use, it is essential to find out the likely direction of this association. As the current study was cross-sectional, it cannot establish causality. Several prospective studies have determined the association between bullying and substance use after a few years of follow-up (25, 31). Even though it seems that bullying victims are more prone to risky behaviour like substance use, it is not possible to determine the temporality or the causality direction of these associations. While these findings suggest that bullying behaviour may develop first, future longitudinal research is needed to truly test mediation and establish the temporal relationship between these variables. The current study also relied exclusively on self-reporting, which can be subjected to intentional distortion, inattention, and faulty recall. Another limitation of this study was the use of multiple assumptions for calculating the sample size; some of which were not clearly specified, such as using one reference for estimating the prevalence of bullying. We have used substance use as one variable for testing the association with bullying. However, it was mainly smoking that contributed to the weight of this variable as the sample included 190 smokers with only 24 alcohol users and 12 drug users. Therefore, the tested association of bullying is primarily with smoking rather than the use of other substances. Finally, a multinomial

logistic regression model can be used by which the 4 categories of bullying are analysed at the same time.

Conclusion

Substance use, mainly smoking, and bullying behavior, seem to be widespread problems among adolescents in schools in Erbil City. Substance use among students was significantly associated with bullying behaviour. There is a need to design and implement effective school-based preventive interventions to tackle these problems. Future research needs to determine the factors associated with bullying in Iraqi Kurdistan and understand the complex inter-relations and the direction of the association between bullying and substance use. Such a complex association might be related to the triggering effect of substance use for future violence and aggression because of physiological changes. However, it could also be related to substance use as a coping mechanism against stressful life experiences, such as bullying.

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Association des comportements de harcèlement avec le tabagisme, la consommation d'alcool et de drogues dans un échantillon d'élèves de la ville d'Erbil (Iraq)

Résumé

Contexte : L’utilisation de substances psychoactives et le harcèlement sont prévalents chez les adolescents et ont un large éventail d’effets néfastes. Le lien entre le harcèlement et l’utilisation de substances psychoactives n’a pas été examiné au Kurdistan et en Iraq, qui ont souffert des effets d’un conflit à long terme et de difficultés économiques.

Objectifs : Examiner le lien entre chaque forme de harcèlement chez les adolescents et l'utilisation de substances psychoactives.

Méthodes : La présente étude transversale a été menée dans un échantillon d’écoles publiques de la ville d’Erbil (Iraq) en 2017. L’ étude a porté sur 1070 adolescents sélectionnés dans 35 écoles selon une méthode d’ échantillonnage en grappes à plusieurs degrés. Un

questionnaire auto-administré comprenant des questions fermées a été utilisé pour la collecte des données. Des élèves de sexe masculin et féminin du secondaire âgés de 13 à 18 ans ont été inclus.

Résultats : La prévalence globale du harcèlement était de 60,0 % ; 30,8 % étaient des victimes de harcèlement, 26,2 % étaient à la fois auteurs et victimes de harcèlement et 3,0 % étaient des harceleurs. Il existe une association significative entre différentes formes et catégories de harcèlement et d'utilisation de substances psychoactives. L'association la plus forte concerne les élèves impliqués dans le harcèlement sexuel, suivi du harcèlement racial et du cyberharcèlement. La plus forte association entre le harcèlement et l'utilisation de substances psychoactives a été trouvée dans la catégorie des personnes qui sont à la fois auteurs et victimes de harcèlement, suivie par les victimes de harcèlement et les harceleurs.

Conclusions : L’utilisation de substances psychoactives et le comportement d’intimidation semblent être des problèmes répandus parmi les adolescents des écoles d’Erbil. L'utilisation de substances psychoactives est fortement associée à différentes catégories de comportement d’intimidation. Il faut mettre en place des interventions préventives efficaces en milieu scolaire pour s’attaquer à ces problèmes. La recherche future devra examiner l'orientation probable du lien entre l'intimidation et l'utilisation de substances psychoactives.

WHO EMRO | Association of bullying behaviour with smoking, alcohol use and drug use among school s

مدينة أربيل، العراق . وشملت الدراسة 1070 مراهقًا اختيروا من 35 مدرسة باستخدام طريقة أخذ العينات المتعددة المراحل . واستُخدم استبيان قائم على الإبلاغ الذاتي وذو أسئلة مغلقة لأغراض جمع البيانات . وشمل الاستبيان طلابًا من الذكور والإناث في الصفوف 7-12 وتتراوح أعمارهم بين 13-18 عامًا .

: بلغت النسبة الكلية لانتشار سلوك التنمر 60.6% ؛ 30.8% منهم كانوا منالنتائ ج الضحايا، و 26.2% من المتنمرين - الضحايا، و 3.0% من المتنمرين . وكان هناك ارتباط قوي بين مختلف أشكال وفئات التنمر وتعاطي المواد . وكان الارتباط الأقوى في الطلاب المشاركين في التحرُّش الجنسي، يليه التنمر على أساس العرق والتحرُّش الإلكتروني . ووُجد أقوى ارتباط بين التنمر وتعاطي المواد في فئة المتنمرين - الضحايا، يليها فئتا الضحايا والمتنمرين .

: يبدو أن تعاطي المواد، خاصة التدخين، وسلوكيات التنمر من المشكلاتالاستنتاجات المنشرة انتشارًا واسعًا بين المراهقين في مدارس أربيل . ويرتبط تعاطي المواد ارتباطًا كبيرًا بفئات مختلفة من سلوكيات التنمر . وهناك حاجة إلى تدخلات وقائية مدرسية فعالة لمعالجة هذه المشاكل . وينبغي أن تدرس البحوث التي ستُجرى في المستقبل الاتجاه المحتمل للارتباط بين التنمر وتعاطي المواد .

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