

ORIGINAL ARTICLE

VIOLENCE-RELATED BEHAVIORS AMONG SCHOOL GOING ADOLESCENTS IN PENINSULAR MALAYSIA

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ABSTRACT

Violence among adolescents is a significant public health issue. The focus was on school-going adolescents because of the life-long negative impact at an individual level both for the perpetrator and victim. Besides, it increases the costs to provide health, welfare, and criminal justice as well as decreases general productivity at the community level. The study aims to determine the prevalence of violence-related behavior, characteristics of both victims and perpetrators, in addition to inter and intrapersonal factors associated with violence-related behaviors. A study was carried out in 2013, which involved all upper secondary school students (aged 16 to 17 years). It was a part of the Malaysian Adolescent Health Risk Behavior (MyAHRB) study, which was conducted in 11 states in Peninsular Malaysia. Standardized, validated questionnaires were used for data collection. The prevalence of violence-related behaviors was 22.4%, and this was higher among male students as compared to females (29.1% vs. 16.3%). Multivariable analysis revealed that the odds of violence-related behaviour increased among males, Malay race, drug use, smoking, had exposure to sex, which sometimes and always felt lonely and had attempted suicide. Agreeable to ensure that their lifestyles do not transgress religious limit and belief was significantly protective. This study provides evidence for a targeted approach to combat violence-related behaviors among adolescents.

Keywords: Violence behaviors, school going, adolescents, Malaysia, associated factors

INTRODUCTION

Violence among adolescents is a significant public health issue. Violence is defined by the World Health Organisation in the World Report on Violence and Health (WRH) as “the intentional use of physical force or power, threatened or actual, against oneself, another person or against a group or community, that either result in or has a high likelihood of resulting injury, death, psychological harm, mal-development or deprivation”¹. Globally, it is estimated that every year, 200,000 homicides occur among youth aged 10-29 years, making it the fourth leading cause of death for people in this group². In all countries, males constitute the main perpetrators in which 83% of youth homicide victims are male³.

The focus is concentrated on the adolescents because violence often results in a severe lifelong negative consequence on a person’s psychological and social well-being, whereby for each young person killed, about 20-40 more sustain injuries requiring hospital treatment¹. In addition to impact at an individual level, adolescent violence significantly increases the costs to provide health, welfare, and criminal justice as well as reduces productivity in general. In Malaysia, for the past few years, it became more difficult to ignore the problem as various newspapers had reported numerous cases of violence involving adolescents. As a part of the National Health Morbidity Survey (NHMS), the Global School Health Survey 2012 was

conducted in selected schools. The result showed that 27.8% of the students had been physically attacked with as high as 39.4% of students had been seriously injured⁴.

At the school level, it was well established that violence or bullying can lead to severe mental and physical consequences⁵. If the problem is not solved, the effect on the victims can persist well into adult life based on meta-analyses of longitudinal studies⁶. The analyses revealed a significant impact on victims of bullying over time resulting in illnesses such as depression, anxiety, and loneliness⁶. Thus, the factors associated with violence-related behaviors should be identified early at school so that that early targeted prevention programs can be initiated. The study was conducted to fill in this gap.

Currently, there are only a few local studies that investigate the factors associated with violence-related behaviors involving both the perpetrators and victims, especially on the protective factors. Moreover, nationwide studies were mainly focused on the prevalence and psychosocial or interpersonal factors. Previous studies have shown that higher cases of violence-related behavior are associated with male gender, smoking, usage of drugs and alcohol, sadness, and played truant⁷⁻⁹. Intrapersonal factors such as unsatisfactory academic achievement and religiosity were not given due importance. Therefore, the study aims to fill the knowledge

gap by determining the prevalence of violence-related behavior, characteristics of both victims and perpetrators, as well as inter and intrapersonal factors associated with violence-related behaviors.

METHODS

This study is a part of the Malaysian Adolescent Health Risk Behaviour (MyAHRB) study, which was conducted in 11 states involving 20 districts in Peninsular Malaysia from May to September 2013. It is a cross-sectional study. The sampling technique and the sample size were described in detail by Chan YY¹⁰, which resulted in a total of 40 schools selected, 20 schools in urban and another 20 schools in the rural area. All students aged 16 - 17 years that fulfill inclusion and exclusion criteria from selected schools of Malaysian citizenship were recruited as participants.

Study instrument

This study used validated self-administered questionnaires which consisted of four sections: 1. socio-demography (age, gender, and ethnicity), self-perceived academic achievement, parent/s' educational level, household size, parents' marital status (married/divorced), 2. health risk behaviour (alcohol consumption, smoking, and sexual behaviour), 3. Rosenberg's self-esteem scale, 4. religiosity.

Malay versions of questionnaires adapted from the Global School-based Student's Health Survey (GSHS)¹¹ and the Youth Risk Behaviour Surveillance (YRBS)¹² were used to evaluate health-risk behaviors. The questionnaire on Rosenberg's self-esteem scale was adapted from Jamil¹³, while religiosity was adopted from a health behavior study questionnaire developed by University Putra Malaysia.

Dependent and independent variables

The dependent variable in this questionnaire was involvement in violence-related behaviors, including either the perpetrators or the victims, which were evaluated using nine items. The nine items were; "During the past 30 days, how many days did you carry a dangerous weapon?", "During the past 30 days, how many days did you carry a dangerous weapon on school property?", "During the past 30 days, how many days did you not go to school because you felt you would be unsafe at school or on your way to or from school?", "During the past 30 days, how many times has someone threatened or injured you with a dangerous weapon?", "During the past 12 months, how many times were you in a physical fight", "During the past 12 months, how many times were you in a physical fight that required medical attention?", "During the past 12 months, how many times were you in a physical fight that involved college/school/institution's properties?", "During the past 12 months, did your boyfriend/girlfriend

ever physically abused you?", "Have you ever been physically forced to have sexual intercourse when you did not want to?". Respondents who answered "0 days", "0 times," and "No" were classified as not involved in violence-related behaviors while respondents who answered "1 day or more" or "1 time or more" or yes were classified as involved in violence-related behaviors. The independent variables included parents' education level, parents' marital status (whether their parents were married or divorced), size of household, and "perception of academic excellence." The protection factors were evaluated using four items (for example, "During the last 30 days, how frequent other students at school help and act kindly to you", "During the last 30 days, how many days missed classes or absence from school without permission"). Religiosity was measured using three items (for example, "Do you agree that religion is essential to guide your life?"). Both of these variables were measured using the 5-point Likert-type scale, which was grouped into three groups for analysis.

Data analysis

The data were cleaned before the analysis, whereby outlier values were detected using frequency analysis, and references were made against the original questionnaire if the investigators felt the answers given were doubtful. Descriptive statistics were used to illustrate the demographic status of the respondents, the involvement of violence-related behaviors as well as the comparison between male and female respondents. Chi-square analysis was used to determine the association between violence-related behaviors and possible associated factors, including social-demographic variables, mental health status, levels of physical activity, other high-risk behaviors, and protective factors as well as religiosity. All independent variables with $p < 0.05$ in bivariate analysis (Chi-square) were included in the Multivariable Logistic Regression model. It is done to determine the effect of each independent variable after controlling the influence of other independent variables. All statistical analyses were run at 95% confidence interval using IBM SPSS statistics software version 22.

RESULTS

A total of 2991 respondents participated in this study, which resulted in the overall response rate of 83.6%. Out of 2991 participants, only 2299 responded to the questions on violence-related behaviors and their related factors associated with analysis. Thus, the response rate was good, at 78.9%. The students composed almost equally by gender (47.9% were females and 52.1 were males). However, the age composition was not balanced in which most of the respondents (89.0%) were aged 16 years old while only 11.0% were aged 17 years old. The largest ethnic group consisting of more than three-quarters of the

respondents was Malays (79.3%), followed by Chinese (13.5), Indian (6.7%), and other ethnic groups (0.4%). The prevalence of violence-related behaviors that includes any of the nine questions in the questionnaires was 22.4% (516/2299) (95% CI: 20.7 - 24.2), and this was higher among male students as compared to females (29.1% vs. 16.3% $p < 0.001$).

Table 1 highlighted the components of violence-related behaviors and the comparison between male and female students. Male students were more likely than female students to engage in each of the behavior we investigated. Among the violence-related behavior, involvement in a physical fight within the last 12 months recorded the highest prevalence of 14.2% (326/2299) (95%

CI: 12.8 - 15.6), and this was higher among male students as compared to females (18.6% vs. 10.1% $p < 0.001$). However, only 4.0% (92/2299) (95% CI: 3.2 - 4.8) of the physical fight required medical attention and only 2.6% (66/2299) (95% CI: 2.2 - 3.6) involved college/school/institutions properties. Among the male student, the least violence-related behaviors were threatened or hurt by dangerous weapons (4.4%), while among the female student, it was brought a dangerous weapon into the school compound (0.8%). Both male and female students almost had equal prevalence in physical abuse by partners (6.7% vs. 5.0%), and a higher number of males was forced to perform a sexual act without consent as compared to females (4.4% vs. 1.7%).

Table 1: Components of violence-related behaviors and the comparison between male and female adolescents in each of the component

Violence related behaviors	Male n (%)	Female n (%)	Total n (%)
Brought dangerous weapon within the last 30 days	77 (7.0)	19 (1.6)	96 (4.2)
Brought dangerous weapon into school compound within last 30 days	51 (4.6)	9 (0.8)	60 (2.6)
Absence because of fear of safety at school or on the journey to school within the last 30 days	59 (5.4)	34 (2.8)	93 (4.0)
Was threatened or hurt by dangerous weapon within the last 30 days	44 (4.0)	23 (1.9)	67 (2.9)
Was involved in a physical fight within the last 12 months	205 (18.6)	121 (10.1)	326 (14.2)
Was involved in a physical fight that needs medical attention within the last 12 months	61 (5.5)	31 (2.6)	92 (4.0)
Was involved in a physical fight that involved college/school/institution's properties within the last 12 months	55 (5.0)	11 (0.9)	66 (2.9)
Was physically abused by partners within the last 12 months	74 (6.7)	60 (5.0)	134 (5.8)
Was forced to perform sexual act without consent	48 (4.4)	20 (1.7)	68 (3.0)
Overall involvement in violence-related behaviors	321 (29.1)	195 (16.3)	516 (22.4)

Prevalence of violence-related behaviors was significantly higher among males, Malay, those whose parents divorced, who had tried to use the drug and smoke cigarettes before, who had been exposed to sex, who always felt lonely and had attempted suicide. On the other hand, in terms of religiosity, agreeable to ensure that their lifestyles do not transgress religious limit and belief was significantly protected. However, all items on parents' or guardians' involvement were not significantly protective. Similarly, two items on religiosity were also not significantly protective. Generally, the prevalence of violence-related behavior is not significantly associated

with age, household size, parents' education level, and drinking alcohol (Table 2a&b).

Multivariable analysis revealed that the odds of violence-related behavior significantly increased among males, Malay race, drug use, smoke cigarettes, had exposed to sex, who felt lonely and had attempted suicide. However, from this model, parental marital status and parental concerns were not significantly associated with violence-related behavior. Religiosity item of agreeable to ensure that their lifestyles do not transgress religious limit and belief was significantly protective (Table 3).

Table 2a: Prevalence of violence-related behavior among adolescents in Peninsular Malaysia

Variable	Violence related to behavior		x ² value	p-value
	No N (%)	Yes N (%)		

Age				
16 years old	1590 (77.8)	455 (22.2)	0.41	0.53
17 years old	193 (76.0)	61 (24.0)		
Gender				
Female	1002 (83.7)	195 (16.3)	54.33	<0.001
Male	781 (70.9)	321 (29.1)		
Race				
Malay	1389 (76.2)	434 (23.8)	9.39	<0.001
Non-Malay	394 (82.8)	82 (17.2)		
Household size				
Less than 4	136 (73.5)	49 (26.5)	2.97	0.23
4 - 5	675 (76.8)	204 (23.2)		
More than 5	972 (78.2)	263 (21.3)		
Perceived academic performance				
Average & Above average	1725 (77.7)	494 (22.3)	1.22	0.27
Below average	58 (72.5)	22 (27.5)		
Father's education level				
College-educated and above	517 (77.4)	151 (22.6)	0.78	0.67
Secondary school	1069 (77.2)	315 (22.8)		
Primary school and below	197 (79.8)	50 (20.2)		
Mother's education level				
College-educated and above	424 (79.0)	113 (21.0)	0.85	0.65
Secondary school	1157 (77.0)	345 (23.0)		
Primary school and below	202 (77.7)	58 (22.3)		
Parental marital status				
Married	1702 (78.0)	481 (22.0)	4.19	<0.05
Divorced	81 (69.8)	35 (30.2)		
Consume alcohol at least once during a lifetime				
Yes	188 (74.0)	66 (26.0)	2.06	0.15
No	1595 (78.0)	450 (22.0)		
Trial of drug use at least once during a lifetime				
Yes	36 (45.6)	43 (54.4)	48.09	<0.001
No	1747 (78.7)	473 (21.3)		
Smoke cigarettes in the past 30 days				
Yes	293 (57.0)	221 (43.0)	160.63	<0.001
No	1490 (83.5)	295 (16.5)		
Exposure to sexual activities				
Yes	101 (49.8)	102 (50.2)	98.87	<0.001
No	1682 (80.2)	414 (19.8)		
Felt lonely for the past 12 months				
Sometimes and always	522 (69.0)	235 (31.0)	47.94	<0.001
Never or rarely	1261 (81.8)	281 (18.2)		
Attempted suicide within the last 12 months				
Yes	80 (58.8)	56 (41.2)	29.14	<0.001
No	1703 (78.7)	460 (21.3)		

Table 2b: Prevalence of violence-related behavior among adolescents in Peninsular Malaysia

Variable	Violence related to behavior		x ² value	p-value
	No N (%)	Yes N (%)		

Frequency of missed classes or school within the last 30 days				
Never	1355 (81.4)	310 (18.6)	57.21	<0.001
1-2 days	327 (70.0)	140 (30.0)		
Three days and more	101 (60.5)	66 (39.5)		
Frequency of parental or guardian Supervision within the last 30 days				
Sometimes, most of the time and always	736 (78.5)	201 (21.5)	0.90	0.32
Never or very rarely	1047 (76.9)	315 (23.1)		
Frequency of parents or guardians worries within the last 30 days				
Sometimes, most of the time and always	1161 (78.2)	324 (21.8)	0.95	0.50
Never or very rarely	622 (76.4)	192 (23.6)		
Lifestyle does not transgress limit and religious belief				
Agree	1329 (80.1)	331 (19.9)	18.53	<0.001
Disagree and neither agree nor disagree	427 (71.5)	170 (28.5)		
Religion is an essential guidance in life				
Agree	1680 (77.5)	489 (22.5)	0.22	0.64
Disagree, and Neither agree nor disagree	103 (79.2)	27 (20.8)		
Family emphasize on religious education				
Agree	1646 (77.2)	486 (22.8)	2.07	0.15
Disagree and neither agree nor disagree	137 (82.0)	30 (18.0)		

DISCUSSION

The prevalence of violence-related behaviors through physical fight from this study, which is 14.2% (Male 18.6%, female 10.1%) is lower than the national average of 27.4% (Male 34.8%, female 19.9%)⁴. It is also lower as compared to developed countries like the United States that reported a nationwide prevalence of 22.6% student involvement in a physical fight one or more times during the 12 months¹². However, the prevalence is higher in comparison to the European Union and China, in which the prevalence of physical fight is 12 % and 7.1% of students, respectively¹⁴.

Several studies on violence-related behaviors have shown consistently that higher rates of males are involved in violence-related behavior than females, particularly in physical fight^{5,11-12}. These gender differences may be due to the differences in several cognitive emotion regulation strategies between males and females¹⁴. Despite having cultural differences in viewing gender, risk factors may apply to all countries, as shown in a study done among Thai youths¹⁵. In most of the countries, it was also found that males are more prone to risk factors such as cigarette consumption, alcohol consumption, and drug use¹⁶⁻¹⁷. Social scientists revealed that one of the reasons females have lower rates of involvement in violence and its risk factors is because they

acquire social cognitive skills earlier in life than males do¹⁸. Thus, they have better pro-social skills. Many factors are contributing to superior social-cognitive skills such as better inter-hemispheric communication, fewer frontal lobe deficits, more exceptional verbal ability, and differential socialization by parents and peers.

The risk of substance abuse is one of the factors frequently associated with exposure to violence during adolescence¹⁴⁻¹⁵. The linkage between involvement in violence and substance abuse, such as the use of alcohol and other drugs, is well-established as a coping strategy for violence-related consequences. The feelings and traumatizing memories of violence may be retarded by techniques of self-medication, allowing the individuals to cope with situation¹⁹. However, in this study, drinking alcohol is not significantly associated with violence-related behavior because most of the respondents are Malays (79.3%) who are Muslims. For Muslims, drinking alcohol is prohibited, and therefore, this factor may explain the findings. Another kind of addiction that is significantly associated with violence-related behavior is smoking. It was found in a study that all forms of bullying, including physical, verbal, for relational, for sexual, for cyber, and racist bullying, are related to smoking²⁰.

Table 3 Factors related to violence-related behavior among adolescents using Multivariable Logistic Regression analysis

Variable	Wald value	Adjusted OR	95 CI	p-value
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Gender				
Female		1		
Male	8.13	1.43	1.12 - 1.83	<0.05
Race				
Non-Malay		1		
Malay	10.31	1.67	1.22 - 2.28	<0.05
Parental marital status				
Married		1		
Divorced	0.62	1.20	0.76 - 1.91	0.43
Trial of drug use at least once during a lifetime				
No		1		
Yes	6.14	1.95	1.15 - 3.30	<0.05
Smoke cigarettes in the past 30 days				
No		1		
Yes	53.07	2.61	2.01 - 3.37	<0.001
Exposure to sexual activities				
No		1		
Yes	33.95	2.68	1.92 - 3.72	<0.001
Felt lonely for the past 12 months				
Never or rarely		1		
Sometimes	22.88	1.80	1.41 - 2.28	<0.001
Always	26.01	2.84	1.90 - 4.23	<0.001
Attempted suicide within the last 12 months				
No		1		
Yes	10.46	1.97	1.31 - 2.96	<0.001
Frequency of missed classes or school within the last 30 days				
Never		1		
1-2 days	8.20	1.46	1.13 - 1.89	<0.001
3 days and more	3.21	1.42	0.97 - 2.09	0.07
Frequency of parents or guardians worries within the last 30 days				
Most of the time and always	0.01	0.99	0.75 - 1.30	0.92
Sometimes	1.23	1.16	0.89 - 1.50	0.27
Never or very rarely		1		
Lifestyle does not transgress limit and religious belief				
Agree	9.41	0.65	0.50 - 0.86	<0.001
Neither agree nor disagree	1.17	0.80	0.53 - 1.20	0.28
Disagree		1		

The data reported here has shown that violence-related behavior is also significantly associated with exposure to sex. This finding is in agreement with a study on the influence of exposure to violence on sexual risk among early adolescents²¹. From the study, adolescents experiencing a direct threat was significantly associated with a greater intention to engage in vaginal intercourse and sexual touching while witnessing violence alone is significantly associated with sexual touching²¹. Further pieces of evidence also support the co-occurrence of intimate partner violence (IPV) and sexual abuse from the same families²². Thus, an intervention designed to address violence should be done together with sexuality education programs and sexual health services due to their relatedness.

Various types of adverse childhood experiences, such as physical and sexual abuse by family members and non-family members as well as household dysfunction, should be considered as

risk factors for violence-related behavior^{23,24}. This factor could explain the mental health problems

such as feeling lonely and determination to commit suicide, which is significantly associated with violence-related behaviors in this study. Besides, young people exposed to violence are more likely to exhibit symptoms such as anxiety, depression, aggression, externalizing behavior, post-traumatic stress disorder, academic and cognitive difficulties, and other risky behavior^{25,26}. Some show resilience and adapt positively, but others may be deeply affected, exposing them to dire adverse effects²⁷.

Aside from time spent with immediate family members, adolescents spend a substantial amount of time in schools. Moon and colleagues have identified family, peer, and school connectedness as valuable, independent indicators of youth violence in adolescence²⁸. A previous study indicates that teacher support and positive relationships between a student and his or her school can serve to protect the student from negative behavioral and mental health outcomes²⁹. Indeed, when students felt a connection with their schools, it has been demonstrated that they were less prone to be exposed to weapon violence and would be less

engaged in violent behaviors over time³⁰. In the study, adolescents that never missed or absent from school without permission and perceived excellent peer support are 0.69 and 0.65 times less likely to get involved in violence-related behavior.

Religiosity is considered one of the protective factors. Even though there may be differences across race/ethnicity, gender, and family income, various components of adolescent religiosity are found to be associated with decreased probability of involvement in the fighting, group fighting, and to a lesser extent, violent attack³¹. However, in this study, only one component, which is ensuring they do not transgress religious limit and belief is significantly protective while another two are not. The result shows that religiosity is multi-dimensional, with each component prevents violence-related behavior to a different extent. Some findings suggest private religiosity alone does not serve to prevent youth effectively against involvement in problem behavior but rather that it is the combination of intrinsic and extrinsic adolescent religiosity factors³².

Limitations

This study is not without limitations. Firstly, these data on violent-related behaviors in adolescents are based on self-reporting and, thus, subject to either under-reporting or over-reporting. Secondly, the generalization of the data can be applied to adolescents who attend school, mainly aged 16 years old, who made up 89% of the respondents. A large number of adolescents quit schooling after form 5, and adolescents who have left and dropped out of schools differ substantially from school-going adolescents. Thirdly, the study is cross-sectional, which can only determine the association between dependent and independent variables but not cause-effect relationships. This type of research design does not allow a conclusion to certainty that changes in one characteristic cause changes in another. Longitudinal studies are required to explain whether causal relationships exist between particular variables and violence-related behavior.

Implication and contributions

This study provides empirical findings for the planning and implementation of policies to combat violence-related behaviors among adolescents. Various campaigns and preventive activities should target male adolescents, those of Malay descent with other high-risk behaviors such as drug use, smoking, and exposure to sex.

CONCLUSION

In conclusion, violence-related behaviors are significantly associated with male gender, Malay ethnicity, drug use, smoking, exposure to sex, felt lonely and had attempted suicide. One aspect of religiosity is significantly protective. For successful outcomes, adolescents should be

approached holistically in which the physical, mental, psychological, social, and spiritual needs are addressed equally and adequately. More importantly, mental health issues among adolescents, such as loneliness and depression, should not be taken lightly. Parents/guardians and teachers should also be invited to get involved in all preventive activities as their support is of utmost importance for maximum impact.

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Availability of data and materials

Please contact the author for data requests.

Competing interests

The authors declared that they have no competing interests.

Consent for publication

Director-General of Health, Malaysia granted permission for publication of the manuscript.

Ethics approval and consent to participate

The Ethical approval was received from the Medical Research Ethics Committee, Ministry of Health Malaysia (approval code: NMRR-12-1210-12399)

Abbreviations

WRH: World report on violence and health; NHMS: National health morbidity survey; GSHS: Global school-based Student's health survey; MyaHRB: Malaysian Adolescent Health Risk Behaviour; YBRS: Youth Risk Behaviour Surveillance; IPV: intimate partner violence;

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