

Prevalence and pattern of bullying victimization among early adolescent students in Sri Lanka: A School based cross-sectional study

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Abstract

Background

Bullying victimization has resulted in various forms of detrimental effects on mental and social wellbeing of adolescents. The study was designed to determine the prevalence and pattern of bullying victimization among early adolescent students in Sri Lanka.

Methods

A school based cross-sectional study was conducted among 2641 grade seven, eight and nine students in 43 government schools in an educational zone in Kegalle district in Sri Lanka selected by stratified random cluster sampling method. The validated Sinhala version of Olweus Bully/Victim Questionnaire (OBVQ) was used to assess the victimization status, its subtypes and patterns of victimization according to the category of schools.

Results

The response rate was 96.01%. The prevalence of bullying victimization among 12-14 years aged schooling adolescents in the Kegalle educational zone

was 59% (95% CI = 57.1-60.9). Verbal bullying was the commonest type of victimization 45.2% (95% CI = 43.24-47.16). Calling names teasing in a hurtful way (36.3%), trying to disrupt the friendship among friends (22.3%) pinching, scratching by nails, pulling from the hair, ear and dress (22.4%) were the most frequently existing bullying activities among victims. Overall bullying victimization and subtypes of bullying victimization were significantly higher among male students ($p < 0.001$), younger age group (12 years) ($p < 0.001$) and significantly less in category IAB schools ($p < 0.001$).

Conclusions

Prevalence of bullying victimization and subtypes of victimization among early adolescent students in the Kegalle educational zone was high. It was significantly more among males and in younger age and more observed in type 2 schools.

Keywords: prevalence, bullying victimization, school categories, early adolescents, Sri Lanka

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Background

Bullying victimization is a significant adolescent health problem which can lead to many undesirable mental health issues. In the most widely used definition, bullying is mentioned as a specific form of aggression which is intentional, repeated over time to bring negative actions on a part of one or more other persons and involves disparity of power between the perpetrators and victims (1). Physical and verbal bullying is classified under the direct bullying activities whereas relational and cyber bullying in the category of indirect bullying. Physical bullying includes hitting using limbs, hitting using objects, kicking, pushing; shoving and pulling the body parts such as hair and ears. Use of unpleasant nick names, using harsh words, saying hurtful things, making fun of the person, passing hints are categorized under verbal

bullying. Relational bullying includes spreading rumours, social exclusion, ignoring, purposefully leaving out from the group work and isolation of the student from the group of friends. Cyber bullying is carried out through electronic media (2).

Bully victimization is a major global adolescent health problem. Prevalence of bully victimization varies within and between regions. Many Southeast Asian countries exhibit considerable prevalence of bullying among adolescents (3,4). Global school-based health survey (GSBH) which is a collaborative surveillance conducted worldwide to access the key behavioural risks and protective factors among adolescents revealed the wide variations in prevalence of bullying across the countries. According to GSBH, fifty percent of students in Nepal

and Myanmar have become bully victims within previous one month (5,6). Scenario of bullying is different in developed, high income countries compared to African and Asian region (7,8). Prevalence of bullying victimization is more reported in younger age groups and prevalence of its subtypes change over the age of the students (2).

Schools in Sri Lanka have been classified into four main categories according to the functional grades in the school and existing subject streams in Advanced Level classes. Type 1AB schools which have all four subject streams in Advanced Level classes (science, commerce, arts and technology) possess favourable geographical locations, adequate teaching staff, facilities for extra-curricular activities, supportive facilities for academic activities, welfare activities for students and comprehensive contribution from parents and past pupils. Based on the facilities available in the schools, demand to enter a type 1AB school has been increased over last few decades. Compared to type 1AB schools, type 1C which have commerce and art subject streams in Advanced Level classes and type 2 schools have functional grades up to Ordinary Level include lesser facilities and a smaller number of students. Majority of the students in type 2 schools represent relatively low socio-economic background. Therefore, the study on variation of bullying victimization across the school categories facilitate to explore the unseen aspect of victimization and to develop targeted preventive and supportive programs.

Though the concept of bullying has been explored across the different study settings globally, the published literature in relation to Sri Lankan context is minimal. Detailed analysis of the available evidence related to bullying victimization reflected the magnitude of the problem (9,10). Few studies conducted among advanced level students on psychological stress and burnout, bullying victimization has identified as a significant correlate of them (11,12). In this background of research vacuum pertaining to bullying among adolescents in Sri Lanka, necessity of a comprehensive study on bullying victimization at school was raised. Hence, the present study was designed to determine the prevalence and pattern of bullying victimization among early adolescent school children in a selected educational zone in Sri Lanka.

Methods

School based descriptive cross-sectional study was conducted in the Kegalle educational zone, Kegalle district, Sabaragamuwa province, Sri Lanka from January 2019 to March 2019. There are 59269 students studying in 165 schools in the Kegalle educational zone. It includes 19 Type 1AB schools, 32 Type 1C schools and 51 Type 2 schools. The study population consisted of age cohorts of 12, 13 and 14 years who were studying in Grade 7, 8,

9 in Sinhala medium government schools in the Kegalle educational zone at the time of the study. Students who were unable to read, write and communicate in Sinhala were excluded. There were 13167 students studying in grade 7, 8, 9 classes in type 1AB, 1C and 2 Sinhala medium government schools (13).

Required sample size was calculated with standard normal deviation taken as 1.96 for a 95% confidence level and 5% absolute precision (14). According to the previous study, highest prevalence of bullying was shown for verbal bullying (57%) and the lowest prevalence is for relational bullying (30%) (15). As the prevalence of each type of bullying ranges 30-60%, 50% prevalence was considered to get maximum sample size. After assuming design effect as 2 and non-response of 5%, final sample size was calculated as 808. To determine the prevalence and pattern of bullying in each school category (1AB, 1C, 2), 808 students from each category of school were recruited with a total sample size of 2424. Stratified cluster sampling technique with probability proportionate to the size was used to select the study sample size. Cluster was defined as a class in grade 7, 8 or 9 in each type 1AB, 1C and 2 schools. Because of the great variation of the number of students in each class across the category of school, median number of students was determined for each type of school. Median number of students in each type of schools was defined as 37, 22 and 20 for type 1AB, 1C and 2 schools consecutively to determine the number of clusters from each type of school. There were 22 clusters from Category 1AB schools, 37 clusters from Category 1C schools and 41 clusters from Category 2 schools selected to recruit the required sample size. Clusters were selected from each school grade proportionate to the total number of students in each functional grade in each school. Finally, the study was conducted in 100 clusters from 43 schools selected according to the probability proportional to size.

Self-administered validated Sinhala version of Olweus Bully Victim Questionnaire was used for data collection to determine the prevalence of bullying (16). OBVQ has been used to determine the bullying victimization status among students worldwide. Sinhala version of the OBVQ found to be a valid, reliable instrument to assess the bullying victimization among adolescents. Frequency of experiencing each bullying act was assessed using five-point scale ranging from 'Not bullied' to 'Several times per week'. According to the definition used by Olweus, the students who were bullied by fellow students within the school environment, at least two times during last month from one or more act of bullying were considered as a victim of bullying (2).

Permission from the main administrative authority, Zonal Education Director, Kegalle was obtained prior to the data collection. The school principals were explained the purpose of the study, procedure of data collection and granted their authorization. With the support of the class

teacher, students were informed to obtain consent from parents prior to data collection and its necessity. Data collection in different schools was scheduled according to the convenience of each school to minimize the disturbance to the routine academic activities and other scheduled events. On the day of data collection, all the students in the selected classroom were made aware of the purpose of the study. Informed written consent from each participant was obtained followed by administering the questionnaire individually. Confidentiality of the data collected was adhered very strictly and anonymity of the participants was maintained thoroughly. Ethical approval to conduct the study was obtained from the Ethic Review Committee of Faculty of Medicine, University of Peradeniya, Sri Lanka.

Data entry was done using SPSS version 17 software and incompatible entries was checked. Bullying status of the study participants was determined based on the cut-off values of the OBVQ (2). Victimization by subtypes was determined by the cut-off values given by the original author. Victimization by at least one subtype was considered in prevalence estimation as a 'Victim'. Students who were subjected to verbal, physical and relational bullying activities more or equal to two times per month within past two months were considered as a victim of each subtype of bullying. Prevalence of bullying victimization with 95% CI was calculated. Prevalence of bullying victimization according to the category of school was calculated. Pattern of victimization according to the age, sex among school categories and severity of bullying according to the age, sex and school category were determined.

Results

Basic characteristics of the sample

Included 100 clusters to the sample comprised of total of 2749 students. Of them, 2641 completed the study. Therefore, the response rate was 96.01%. Basic characteristics of the sample are described in Table 1. Out of the sample, 1393 (52.7%) were females and majority were Buddhists (98.25%). Students included in each age groups were 859 (32.5%), 888 (33.6%), 894 (33.9%) in 12 years, 13 years and 14 years respectively. There were 906 (34.3%), 905 (34.3%) and 830 (31.4%) students from categories 1AB, 1C and 2 respectively (Table I).

Prevalence of bully victimization

Prevalence of bully victimization among the study participants was determined by validated Olweus Bully/Victim Questionnaire (OBVQ) – victimization component. According to the definition, there were 1558 (59%) victims. The prevalence of bullying victimization among school going early adolescents in the Kegalle educational zone was 59% (95% CI=57.14 - 60.96). Verbal bullying

was the commonest type of bullying among study participants which was found among 45.2% (95% CI=43.24-47.16) of students. From all, 34.7% (95% CI=33.14-36.46) students reported physical bullying and 34.9% (95% CI=32.94 - 36.66) students reported relational bullying. Among the 59% of total victimized students, there were 21.2% of students victimized only by one subtype of i.e. physical, verbal or relational bullying. There were 19.7% of the total participants subjected to two subtypes while 18.1% bullied by all three subtypes (Figure 1).

Majority (36.3%) of the students were bullied by calling names, teasing in a hurtful way and making fun of them. Trying to disrupt the friendships among students was the commonest form of relational bullying among victims which is found among 22.3% of students. Pinching, scratching by nails, pulling from the hair, ear and dress were the most frequently existing (22.4%) physical bullying activities among victims (Table 2). Bully victimization was commonest among students in age group of 12 years which is accountable for 62.9%. With increase of age, reduction in bullying victimization prevalence was observed. The observed difference is statistically significant ($p < 0.001$). Bullying victimization was more common among male students (67.6%) significantly compared to female students (51.3%) ($p < 0.001$). Similar pattern of significant difference was observed between bullying subtypes with age groups and sex (Table 3).

Pattern of bullying victimization among school categories

According to the educational facilities and subject streams in GCE Advanced Level of each school, schools are categorized into categories namely 1AB, 1C and type 2. Study sample represented an equal number of minimum participants (808) from each category of school. Due to cluster sampling method, 906, 905 and 830 students were included representing 1AB, 1C and 2 school categories respectively.

Category 1AB schools reported the least number of victims of bullying (49.2%). Category 1C and category 2 victimization of bullying were of 63.5% and 64.7% respectively. Better the category of school, lesser the bullying victimization by fellow students was observed. This pattern was observed in relation to all three types of bullying among school categories which exhibit a statistically significant difference (Table 4). Victimization by verbal, relational and physical bullying subtypes showed that students in category 1AB schools were less bullied by fellow students compared to students in category 1C and 2 schools. This statistically significant pattern was observed in relation to all three subtypes of bullying. Higher bully victimization by each subtype was noted among students attending category 2 schools (Table 5).

Table 1. Basic characteristics of the study sample of students in Grade 7, 8, 9 (n= 2641)				
Characteristic		No	Percentage (%)	Cumulative Percentage (%)
Sex	Female	1393	52.7	52.7
	Male	1248	47.3	100.0
Age	12	859	32.5	32.5
	13	888	33.6	66.1
	14	894	33.9	100.0
Religion	Buddhist	2595	98.25	98.25
	Hindu	6	0.22	98.47
	Christian	32	1.21	99.68
	Islam	5	0.19	99.88
	Other	3	0.11	100.00
School Category	1AB	906	34.3	34.3
	1C	905	34.3	68.6
	2	830	31.4	100.0
Total	2641	(100.0)		

Table 2. Reported bullying activities among victims of verbal, physical and relational bullying							
Type of bullying	Bullying activities	Bullied		Not bullied		Total	
		n	(%)	n	(%)	n	(%)
Verbal	Call names, teasing in hurtful way	959	(36.3)	1682	(63.7)	2641	(100.0)
	Call the names with hidden meaning, made verbal threat	592	(22.4)	2049	(77.6)	2641	(100.0)
	Humiliate using mean words	254	(9.6)	2387	(90.4)	2641	(100.0)
Physical	Disrupt the friendship among friends	589	(22.3)	2052	(77.7)	2641	(100.0)
	Spread rumors, lies to make the person embarrassed	464	(17.6)	2177	(82.4)	2641	(100.0)
	Purposefully leave out from the group	326	(12.3)	2315	(87.7)	2641	(100.0)
Relational	Pinching, scratching, pulling from hair, ears	592	(22.4)	2049	(77.6)	2641	(100.0)
	Hitting, kicking, shoved around	510	(19.3)	2131	(80.7)	2641	(100.0)
	Destroy the belongings and steal money	313	(11.9)	2328	(88.1)	2641	(100.0)

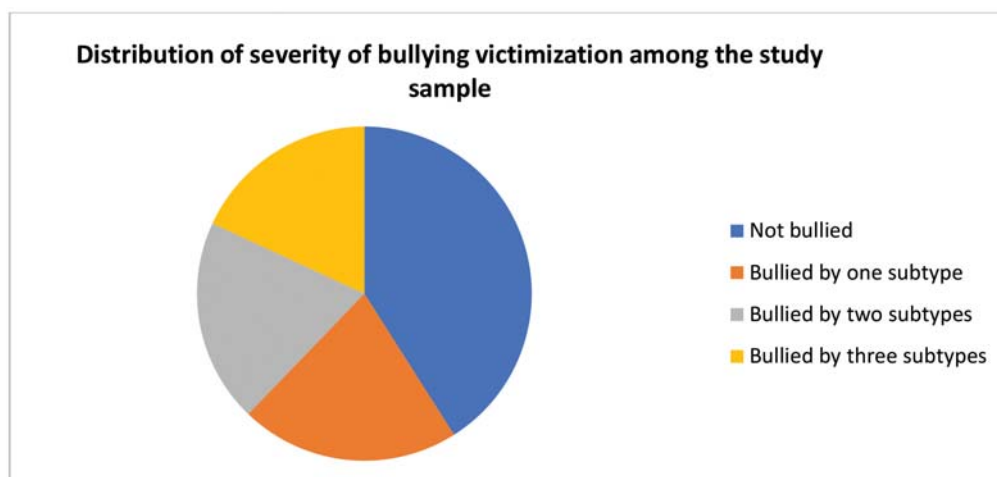


Figure 1. Severity of bullying victimization considering the subtype victimization.

Table 3. Distribution of overall bullying among study participants according to the age category and sex					
Age	Bullied		Not bullied		Significance
	n	(%)	n	(%)	
12 years	540	(62.9)	319	(37.1)	χ^2 (trend) = 18.949 df = 1 p<0.001
13 years	547	(61.6)	341	(38.4)	
14 years	471	(52.7)	423	(47.3)	
Sex	Bullied		Not bullied		Significance
	n	(%)	n	(%)	
Male	844	(67.6)	404	(32.4)	χ^2 (trend) = 72.908 df = 1 p<0.001
Female	714	(51.3)	679	(48.7)	

Table 4. Pattern of overall bullying victimization among school categories					
School Category	Bullied		Not bullied		Significance
	n	(%)	n	(%)	
1AB	446	(49.2)	460	(50.8)	χ^2 (trend) = 16.949 df = 1 p < 0.001
1C	575	(63.5)	330	(36.5)	
2	537	(64.7)	293	(35.3)	

Table 5. Distribution of subtypes of victimization among school categories

Characteristic		Bullied		Not bullied		Total		Significance
Type of bullying	Type of school	n	(%)	n	(%)	n	(%)	
Verbal	1AB	342	(37.7)	564	(62.3)	906	(100.0)	χ^2 (trend) = 23.923 df = 1 p < 0.001
	1C	444	(49.1)	461	(50.9)	905	(100.0)	
	2	409	(49.3)	421	(50.7)	830	(100.0)	
Relational	1AB	235	(25.9)	671	(74.1)	906	(100.0)	χ^2 (trend) = 48.689 df = 1 p < 0.001
	1C	341	(37.7)	564	(62.3)	905	(100.0)	
	2	347	(41.8)	483	(58.2)	830	(100.0)	
Physical	1AB	219	(24.2)	687	(75.8)	906	(100.0)	χ^2 (trend) = 52.305 df = 1 p < 0.001
	1C	361	(39.9)	544	(60.1)	905	(100.0)	
	2	336	(40.5)	494	(59.5)	830	(100.0)	

Pattern of overall bullying victimization among age groups within each school category was explored. There was no significant difference in victimization observed in between age groups of category 1 AB, and 1 C schools. But statistically significant pattern was observed among age groups in overall victimization in category 2 schools indicating younger age group was more victimized.

Overall victimization among male and female students within category expressed a significant association in 1 AB and 1 C school. It reveals that male students in both category 1 AB and 1 C schools are more victimized when compared with female students. But students in category 2 schools did not indicate significant association (Table 6).

Table 6. Distribution of overall bullying among school categories according to age and sex

School Category	Age (years)	Bullied		Not bullied		Total		Significance
		n	(%)	n	(%)	n	(%)	
1AB	12	172	(51.3)	163	(48.7)	335	(100.0)	χ^2 (trend) = 1.15 p = 0.56
	13	139	(48.9)	145	(51.1)	284	(100.0)	
	14	135	(47.0)	152	(53.0)	287	(100.0)	
	Sex	Bullied		Not bullied		Total		Significance
		n	(%)	n	(%)	n	(%)	
	Male	251	(64.7)	137	(35.3)	388	(100.0)	χ^2 = 33.37 p < 0.001
	Female	195	(37.6)	323	(62.4)	518	(100.0)	

(Continued)

1C	Age (years)	Bullied		Not bullied		Total		Significance
		n	(%)	n	(%)	n	(%)	
	12	158	(62.0)	97	(38.0)	255	(100.0)	$\chi^2(\text{trend})=2.93$ $p=0.23$
	13	235	(70.8)	97	(29.2)	332	(100.0)	
	14	182	(57.2)	136	(42.8)	318	(100.0)	
	Sex	Bullied		Not bullied		Total		Significance
		n	(%)	n	(%)	n	(%)	
	Male	316	(69.3)	140	(30.7)	456	(100.0)	$\chi^2 = 13.17$ $p < 0.001$
	Female	259	(57.7)	190	(42.3)	449	(100.0)	
2	Age (years)	Bullied		Not bullied		Total		Significance
		n	(%)	n	(%)	n	(%)	
	12	210	(78.1)	59	(21.9)	269	(100.0)	$\chi^2 (\text{trend}) = 37.66$ $p < 0.001$
	13	173	(63.6)	99	(36.4)	272	(100.0)	
	14	154	(53.3)	135	(46.7)	289	(100.0)	
	Sex	Bullied		Not bullied		Total		Significance
		n	(%)	n	(%)	n	(%)	
	Male	277	(68.6)	127	(31.4)	404	(100.0)	$\chi^2 = 1.1$ $p = 0.29$
	Female	260	(61.0)	166	(39.0)	426	(100.0)	

Discussion

The present study was designed to fulfil the objectives of determining the prevalence of bullying victimization among students who were in their early phase of adolescence and to observe the pattern of bullying victimization among various school categories in Sri Lankan context. This arena of study generates evidence to fill the gap of research findings in relation to bullying in South East Asian context. The findings of the study pointed out that nearly two third of early adolescents become victims of bullying and patterns of bullying victimization is significant among different school categories.

A school based cross sectional descriptive study was adopted to facilitate to determine the prevalence and pattern of bullying victimization in the Kegalle educational zone. Response rate was high and gives a satisfactory outcome. There were 43 schools selected randomly representing all categories of schools. School administration, education curricula, human resources and

infrastructure facilities available in school setting are almost equivalent to the other parts of the country except the geographical location. Therefore, the study setting indicates common characteristics to other educational zones throughout the country. Study population was selected from the students in the early adolescence based on the available evidence on maximum prevalence of victimization worldwide (2,17,18). The sample size was calculated adequately to determine an anticipated prevalence of bullying by fellow students among schooling adolescents and to detect anticipated prevalence of bullying by fellow students in categories of school. As no previous studies have been conducted using an international definition of bullying and a valid tool to determine the prevalence of bullying victimization in Sri Lanka, maximum sample size was determined based on an anticipated prevalence of bullying of 50% within expected level of confidence (95%) and precision (5%). Standard formula was used to calculate the required sample size to determine the prevalence of bullying victimization (14). Cluster sampling method was utilized

to obtain the necessary sample size. By making the correction using design effect, clustering effect was minimized within the sample. A few Sri Lankan studies conducted on emotional, psychosocial problems and mental health problems among school going adolescents prior to this study have utilized the value of 2 as the design effect (11,19). Based on the value of 2 as the design effect, required sample size from each category of school was determined. Stratified cluster sampling method in probability proportionate to the size was adapted to recruit the required sample size from each grade. Adaptation of probability sampling technique obtains a representative sample from the reference population. By using stratified cluster sampling method, possibility of getting selection bias into the sample has been minimized. Prior to the data collection, consent from parents and assent from the student participants were obtained after providing adequate information regarding the study. With the background facilitation of school, PI (principal investigator) was able to achieve high response rate among study participants in the study minimizing the non-response bias. Maintenance of privacy and confidentiality among study participants and availability of the PI at the time of data collection facilitated the students for further clarifications on questionnaire which further reduced the occurrence of non-response.

Valid data collection tools were used to gather data from the study participants. Locally adapted, translated, validated OBVQ was used to obtain the data to determine the prevalence of bullying victimization. OBVQ is a questionnaire used worldwide to determine bullying status among adolescents (20,21). Sinhala translated OBVQ retained two subscales with satisfactory reliability and validity indices (16). According to the literature, use of self-administered questionnaire (SAQ) obtains more valid information in socially sensitive issues than face-to-face interviews (22). Therefore, use of SAQ among students to get down the information on their experience on bullying by fellow students was comfortable for students. Almost all the researchers worldwide have assessed the bullying victimization through SAQ or by web-based self-administered questionnaires. Furthermore, the self-administered questionnaire has reduced the occurrence of interviewer bias. Victimization experiences during last month were encountered in the questionnaire. Due to the sensitive and possible traumatic nature of the outcome, there is a minimum chance of recall bias which can adversely influence the quality of data.

Few studies conducted in Sri Lanka related to bullying victimization revealed some evidence. Though there were some similarities related to study participants and study setting of them, few aspects in the methodology influence the validity of their research findings. Therefore, selection of representative sample, measures to minimize recall bias,

the use of validated tool and widely accepted definition to determine the victimization status were introduced during development stage. According to the findings of the study, overall prevalence of bullying among schooling adolescents was high. Few similar studies conducted in South East Asian region using validated tools have reported high values in bullying victimization (3,4). Although the background scenario on bullying victimization among schooling adolescents in South-east Asian countries expressed as high values, majority of studies conducted in American and European countries showed relatively low values of bullying victimization (23,24). This variation may be due to the discrepancies in ethnicity, socio-cultural background and organization of the education system among those countries. Countries in Europe and in American region possess existing bullying prevention programs and functional reporting systems for reporting bullying activities.

Distribution of each subtype of bullying among adolescents across the countries has shown a considerable variation. A study conducted to determine the prevalence of subtypes of bullying victimization in a representative sample of adolescents in United States revealed the relational victimization as the commonest form followed by physical and verbal victimization. Study conducted among group of adolescents with similar baseline characteristics to the current study in South Korea identified the exclusion among majority of participants with verbal abuse and physical abuse as next to it. Pattern of bullying victimization was assessed with the sex and age group of the students to find out their relationship. Male students were significantly more victimized when compared to the female students ($p < 0.001$). Many studies conducted worldwide showed the male students were more prone to be bullied compared to the female students (17,18,24,25).

Based on the bullying severity, highest percentage of students in the category 2 schools reported victimization by several subtypes. Misdistribution of teaching and learning facilities, manpower and other infrastructure facilities among schools leads to segregation of students coming from comparatively higher socio-economic status into more facilitated schools. It will lead to variation in the prevalence of bullying victimization among different categories of schools. Collegiate style existing in Sri Lanka is different from other countries. Literature available in Sri Lanka on studies related to categories of schools is scanty. Therefore, the study findings cannot be compared with the available studies in Sri Lanka.

Limitations

The study was conducted in Sinhala medium government schools in the Kegalle educational zone. Hence the findings cannot be considered valid to

students studying in Tamil medium and English medium. Similarly, the findings of this study are externally valid for the Kegalle educational zone, extrapolation of the findings to the other educational zones in the country should be done with caution considering the ethnic variation across the study population. Preliminary data collection done in a similar study setting during feasibility assessment of the study revealed a negligible amount of cyber-bullying among the target group of students in 2019. But its prevalence may have changed over the time due to widespread digital technology among students. Therefore, the study on cyber-bullying will give a snapshot on current situation. Victimization experience among adolescents has been encountered during current study which can be identified as a limitation. Therefore, the necessity of future research to identify bullying and bully-victim behaviour is pointed out to complete the ground level scenario on bullying.

Conclusions and recommendations

The prevalence of bullying victimization among grade seven, eight and nine students in the selected educational zone in Sri Lanka is high (59%, 95% CI=57.14 - 60.96). Verbal bullying was the commonest type of bullying among victims. Victimization is more observed among male students, students in grade seven and schools in category 2. In light of these findings, it is recommended to encourage and strengthen existing school based adolescent mental health supportive programs and counselling services to rectify problems and consequences related to bullying among school children in Sri Lanka.

Author Declarations

Competing interests

The authors declare that they have no competing interests.

Ethics approval and consent to participate

Ethics approval (2017/EC/09 V2) to conduct this study was obtained from the Ethical Review Committee of the Faculty of Medicine, University of Peradeniya, Sri Lanka. Administrative approval was obtained from the Zonal Education office, Kegalle, Sri Lanka.

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Author contributions

DSR designed the project, coordinated the interventional activities, collected and analyzed data and drafted the manuscript. DSD and NDW provided technical inputs and supervision throughout the study and manuscript writing.

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