Original Research

A school-based intervention to reduce bullying among adolescents – Experience from a rural setting in Sri Lanka

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Abstract

Introduction: Bullying is a widespread problem among school going adolescents which causes significant impact on their mental wellbeing. It is important to implement necessary action to reduce bullying and promote mental health of the students.

Objectives: To develop, implement a school-based intervention with multiple approaches and assess the effectiveness of it to reduce bullying among adolescent students of Kegalle District in Sri Lanka

Methods: Components of the intervention were developed involving different stakeholders related to adolescent mental health promotion in school setting. A quasi-experimental study was conducted in Kegalle Educational Zone and two schools were purposively selected for the intervention and control group.

Results: Developed and implemented intervention was effective in reducing overall bullying and physical, verbal and relational bullying victimization among students ($p \leq 0.001$).

Conclusions & Recommendations: The intervention developed with multiple approaches effectively improved the bullying victimization among school going adolescents in the intervention group after three months of the implementation.

Keywords: *bullying, adolescents, school-based, intervention, effectiveness*

Introduction

Bullying has emerged as a major problem negatively affecting the wellbeing of the affected groups which has attracted the wider attention of public health practitioners. Acts of bullying exist widely in the society such as in schools, universities and workplaces as well as in home environments and the type of bullying and nature of bullying may change according to the place. Power imbalance between the victim and perpetrator, intentionality of the act and its repetitive nature are the unique features that help to differentiate bullying from other types of harmful behaviours such as violence and peer aggression (1). Bully victimization is a major global adolescent health problem. Prevalence of bully victimization varies within and between regions remarkably. Global School Based Health Survey (GSBH) which is a collaborative surveillance conducted worldwide to assess the key behavioural risk and protective factors among adolescents revealed wide variations in the prevalence of bullying across the countries. According to GSBH, 50% of students in Nepal and Myanmar have become bully victims within previous one month (2-3). In Sri Lanka, a study conducted on negative peer pressure and bullying among school children aged 13-15 years has found out that 68% of boys and 51% of girls were victims of a bullying act during the past 3 years (4). The prevalence of bullying within the last three months by fellow students among 12-14-year-old school going adolescents in Kegalle Educational Zone was 59% (5). Being a victim of bullying during adolescence is associated with future mental health issues with a possibility of hindering the development of an independent adult (6). Impact on school performance, poor school attendance due to frequent psychosomatic complaints, lack of self-confidence, anxiety and suicidal ideation are some of the undesirable consequences of bullying (7). These findings explore the magnitude of the problem and existing gaps on an appropriate intervention on bullying prevention.

Most developed countries have introduced various prevention campaigns with evidence-based strategies to minimize the negative impact on the affected group (8-9). Those established programs are incorporated into the school curriculum. Norwegian Olweus Bullying Prevention Program in the United State schools and 'KiVa' Anti-bullying Program in Finland schools have been identified by other developed countries and well adopted in their school curricula (10-13). Scarcity of organized bullying prevention programs in low- and middle-income countries stagnate this burden and its undesirable consequences.

The current School Health Program in Sri Lanka is a comprehensive fruitful health program since the commencement of the public health system. Periodically, it is refreshed by introducing evidence-based interventions. Already there are mindfulness and mental health promotion programs and life skill-based training sessions conducted in schools. Having a program addressing bullying prevention is useful to enhance the quality of school children. Developing a program to prevent bullying using available resources at school level and testing its effectiveness among adolescents was justifiable. This study intended to develop and implement a school-based intervention with multiple approaches and to assess the effectiveness of it to reduce bullying among the adolescent students at government schools in a rural setting in Sri Lanka.

Methods

A quasi-experimental study with pre- and post-test components was conducted from January to March 2019 among adolescents in Kegalle Educational Zone in Sri Lanka. This is the largest educational zone in Kegalle- the administrative district in Sabaragamuwa Province in Sri Lanka which caters approximately to 59 000 students in 165 schools; and was selected for the study considering its operational, administrative and geographical feasibility.

Two schools belonging to the same category and having a similar socio-demographic profile, facilities for education, counselling and extracurricular activities were selected and randomly assigned to the intervention and control groups. To minimize the possibility of contamination of information, the two schools selected were with a considerable distance and defined draining areas. The sample size calculated was 86 in each group, using the appropriate formula with the prevalence of bullying taken as 57%, effect size of 30%, power of 80%, 5% significance and 10% non-response rate (14). However, since there were two classes each in Grade 8 and Grade 9 with an almost equal student population in the intervention and control schools, it was decided to include all of them in the study. Students were enrolled after informed consent, excluding those who were unable to read or write in Sinhala language.

Intervention package

Development of the intervention package was done in few steps. With the objective of identifying the different components on bullying prevention in the school curricula, subjects of civic education and health and physical education in Grades 7, 8 and 9 were reviewed. Evidence on programs conducted by the school health committee and preventive health sector on life skills and health promotion were evaluated. Intervention programs worldwide were referred to identify important activities related to bullying prevention (15-18). Key informant interviews were used to obtain the specialized knowledge and unique perspectives on bullying prevention from the relevant staff in public health, psychiatry, psychology, health education, counselling and educational administration. Three focus group discussions were conducted among the students in selected schools to obtain their views on possible ways of bullying prevention. Based on the findings of these activities, four main components with different approaches were included. Development of a supportive environment to reduce bullying in the school setting, establishment of a system to report bullying activities, improve the awareness of schoolteachers on bullying and bullying prevention and conducting a workshop for students in Grade 8 and 9 students on bullying and bullying prevention were in the intervention package (Table 1). Material which are necessary for the implementation of the intervention were developed based on the consensus of experts and literature (19).

School administration, parents and students were informed about the study prior to obtaining informed written consent. Banners and posters were displayed in appropriate places in the school environment. Introduction to the intervention package, awareness on bullying and its prevention strategies for schoolteachers was conducted by the principal investigator (PI) using a power point presentation, few video clips and a brochure with health education messages. System of reporting bullying incidents was introduced, and its functionality was discussed. One-day workshop for students on bullying, bullying prevention and development of resilience against bullying was done by the PI and an experienced health educator. Bullying process, contribution of each party on aggravating and conciliating it were discussed. Group activities based on real bullying incidents were conducted giving the opportunity to students on self-decision making. Application of life skills-based knowledge to overcome the bullying process and to improve the quality of life was delivered as an interactive session. Students were introduced to the reporting system of bullying incidents and its operational procedure. To monitor the progression of the intervention, the PI visited the intervention school once a month. The reported bullying incidents were managed with the help of the counselling teacher. The control group did not receive any educational or awareness program during the period. However, at the end of post-assessment data collection, the same workshop and awareness program were conducted for the control

group.

Assessment of outcomes

During pre-assessment, the prevalence of bullying victimization during last month was determined via Olweus Bully Victim Questionnaire (OBVQ) in both schools on the same day. OBVQ is a self-administered questionnaire used worldwide to determine bullying status among adolescents. Its validated form in the Sri Lankan context was used (5). Sinhala translated OBVQ retained two subscales with satisfactory reliability and validity indices (20). Victimization at least two times by one of physical, verbal or relational bullying act during last month was considered in the prevalence estimation as a 'victim'. Three months after the workshop, bullying prevalence was assessed using OBVQ in both the intervention and control groups.

Data analysis

Differences between the prevalence of bullying victimization and of each type of bullying in the intervention and control groups during the pre- and post-intervention stages were assessed. Mc-Nemar test was used to determine the significance in percentage difference of bully victimization between pre- and post-intervention assessments for both control and intervention groups (21).

Results

Intervention group consisted of 102 students and control group included 99 students. Pre- and post-intervention response rates were 100% in both intervention and control groups. Both groups showed similar socio-demographic characteristics (Table 2). There was no significant difference in overall bullying and subtypes of bullying between the two groups in pre-intervention assessment (Table 3).

Percentage reduction of overall bullying prevalence in the intervention group was statistically significant when compared to the control group in the three months post-intervention assessment ($p=0.02$) (Table 4). There was a significant difference in reduction of overall bullying victimization in the intervention group in pre- and post-intervention assessments ($p<0.001$) and no such difference observed in the control group. A significant difference in reduction of physical ($p=0.005$), verbal ($p<0.001$) and relational ($p=0.005$) bullying victimization observed among students in the intervention group in pre- and post-intervention assessments (Table 5).

Discussion

Based on the findings of this study, students who received the activities of developed intervention showed a significant reduction in the prevalence of bullying victimization at least one bullying type in pre- and post-intervention assessment ($p<0.001$). Compared to the control group, the intervention group revealed a significant reduction of bullying victimization in the pre- and post-assessment in relation to physical ($p=0.005$), verbal ($p<0.001$) and relational ($p=0.005$) types.

There were several strengths in this study. The two school settings were randomly selected as experimental and control groups from the same educational zone and showed no baseline differences with regards to major confounding factors. Hence, there was minimal selection bias that should be identified as a strength of the study. Two schools are situated geographically apart in considerable distance with defined draining population for schooling leading to a minimum possibility for contamination due to the exchange of information between two groups. This fact is further strengthening by highly significant reduction of bullying victimization in the intervention group compared to control group in post-intervention assessment. There was no loss to follow up in both groups. Hence, the compensatory equalization of treatment is unlikely to have influenced the results. With controlling of many such threats to internal

validity, it could be concluded that the effectiveness of intervention is purely due to the intervention conducted. Administrative support at school level, convenience in obtaining the required sample, availability of resource person to conduct the sessions in Sinhala and the ability to develop the health education material during the given time frame were considered when selecting the study setting. By the end of Grade 7, dynamics of school leaving, and new entries become stable, and therefore students were assumed to be well adapted to their school environment, with adequate peer relationships and social interactions. Further, adopting a self-administered questionnaire to gather data on their experiences enabled to maintain privacy among students and reduce social stigma. Due to the sensitive and possible traumatic nature of the outcome, the experiences were limited to that during last month, resulting in minimum recall bias. Further, the effect of the treatment on the same individual in before and after the intervention was tested when analysing the effectiveness.

The developed intervention is a practical, less-time consuming and student-friendly program which consisted of multiple approaches to address the problem of bullying. Students were benefited with knowledge on bullying and its prevention, provided with knowledge to face bullying related issues and improved their capacity to practice life skills. School-based interventions with multiple have explored components with different approaches implemented in low- and middle-income countries a sustainable impact on bullying victimization (22-24).

Findings from a randomized controlled trial conducted in India based on mediating effects on the positive school climate (social, emotional and physical safety of children, the presence of respectful behaviour, importance of learning and be beneficial and timely.

There are some limitations identified in this intervention which need to be discussed and improved in future research and modifications of the developed intervention package. First important collaboration between students, families, and education), which is already in routine school programs and having similar characteristics of this developed intervention have indicated a reduction in bullying experience among adolescents (18). Therefore, the components included in the intervention can be easily amalgamated with routine activities in the current school health program in Sri Lanka.

In Sri Lanka, the need for establishing an anti-bullying policy and school-based interventions to develop resilience and life skills among students has been identified. This was recommended based on the results of GSHS conducted by the Ministry of Health, Sri Lanka in 2016 (25). Other South-East Asian countries too developed initiatives based on GSHS results. There is a strong national commitment to eliminate all forms of bullying and violence, which had resulted in bullying prevention programs in Indonesia (17).

From 2019 to 2022, routine school activities could not be conducted in its optimum level. Therefore, the schools mainly targeted academic activities without prioritizing other routine activities conducted in the school health program by the preventive health sector related to the psycho-social wellbeing of the students. With the current recruitment of graduates on psychology and diploma holders in counselling to the government sector, their service can be utilized at individual level using problem solving approach which enhances the self- referral of students and further referral to specialized unit in mental health. With the emergence of technology, different types of audio-visuals and activity based digital resources including internet and mass media may be incorporated into the activities of this intervention. Considering the cultural and social background of Sri Lanka, implementation of such a program will

limitation of the study is limited follow-up period. With time, the effect of the intervention on target population may be tailed off. Therefore, the importance of widening the follow-up period is highlighted. The necessity of refresher programs will be pointed out in future research. Based on the logistic convenience, intervention was implemented in one Sinhala medium school which can be identified as another limitation. Therefore, the findings should be generalized cautiously.

Table 1: Description of the components in the intervention package

Component	Method/Approach	Intervention content
1	Promote supportive environment in the school setting	• Advocacy with school administration • Display health education messages related to bullying in school premises and in classrooms • Distribution of information containing leaflets related to bullying, its consequences and prevention among students
2	Self- directed reporting of peer bullying incidents	• Establish a confined place to forward the incidents – "problem box" • Introduce the reporting system • Psychological support, counseling for victims and perpetrators by counseling teacher • Refer to mental health services in the curative sector (if necessary)
3	Improve the awareness in the school community	• Conduct awareness session for teachers on bullying, its undesirable effects, ways to overcome and teachers' duty • Conduct a lecture discussion with students on bullying and its prevention
4	Capacity building among students	• Improve life skills-based knowledge to develop resilience skills and to overcome bullying related problems • Discussion on case scenarios related to bullying and its consequences • Inform available services to get mental health support and introduce the bullying reporting system at school level.
5	Follow up visits	• Monthly visits to support the referral pathway and monitor the progress of activities at school level

During future research, study participants can be selected from different geographic locations representing all urban, semi-urban and rural settings. All the posters, protocols, guides, case scenarios, lectures and health education material were developed in Sinhala language. Prior to generalizing the findings, the intervention needs to be implemented in Tamil medium schools with

necessary material in Tamil. The intervention is mainly targeted on students through the reinforcement of teachers and a favourable school environment. However, involvement of parents will further improve the effectiveness of the intervention, so that implementation in future programs would be more successful.

Conclusions & Recommendations

The intervention package was effective in reducing bullying victimization among adolescents after three months of implementation. It is recommended that the intervention could be adopted with long-term follow-up and be included as a routine program conducted in current school health programs.

Table 2: Distribution of study participants according to demographic characteristics in the intervention group and the control group

Demographic factors	Intervention group		Control group	
	No.	%	No.	%
Age				
13 years	50	49.0	51	51.5
14 years	52	51.0	48	48.5
Sex				
Male	45	44.1	45	45.5
Female	57	55.9	54	54.5
Ethnicity				
Sinhala	100	98.0	98	98.9
Other	2	2.0	1	0.1
Total	**102**	**100.0**	**99**	**100.0**

Table 3: Comparison of the intervention and control groups by bullying victimization status at pre-intervention assessment

Type of bullying	Group	Victimized		Not victimized		Total	Significance
		No.	%	No.	%		
Overall	Intervention	67	65.7	35	34.3	102	χ^2=0.99; df=1
	Control	65	65.6	34	34.4	99	p=0.9
Verbal	Intervention	47	46.1	52	53.9	102	χ^2=0.27; df=1
	Control	42	42.4	57	57.6	99	p=0.6
Physical	Intervention	44	43.1	58	56.9	102	χ^2=0.01; df=1
	Control	42	42.4	57	57.6	99	p=0.9
Relational	Intervention	49	48.0	53	52.0	102	χ^2=0.42; df=1
	Control	43	43.4	56	56.6	99	p=0.5

Table 4: Comparison of the intervention and control groups by bullying victimization status at post-intervention assessment

Group	Victimized		Not victimized		Total	Significance
	No.	%	No.	%		
Intervention	48	48.5	54	51.5	102	χ^2=4.91; df=1
Control	62	62.6	37	37.4	99	**p=0.027**

Table 5: Comparison of the bullying victimization status in pre- and post-intervention assessments in the intervention and control groups

Bullying		Intervention group			Control group		
Type	Before	After		Significance	After		Significance
		Bullied	Not		Bullied	Not	
Overall	Bullied	44	23	χ^2=13.3; df=1	61	1	χ^2=1; df=1
	Not	4	31	**p<0.001**	3	36	p=0.31
Verbal	Bullied	33	14	χ^2=11.2; df =1	40	2	χ^2=1; df=1
	Not	1	54	**p<0.001**	0	57	p=0.31
Physical	Bullied	42	12	χ^2=9.3; df=1	42	3	χ^2=1; df=1
	Not	1	50	**p=0.005**	1	53	p=0.31
Relational	Bullied	36	14	χ^2=9; df=1	42	1	χ^2=1; df=1
	Not	2	50	**p=0.005**	0	56	p=0.31

Public Health Implications

The intervention package was effective in reducing bullying victimization among adolescents after three months of implementation. It is recommended that the intervention could be adopted with long-term follow-up and be included as a routine program conducted in current school health programs in Sri Lanka to reduce peer bullying among adolescents.

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 Ethics 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 analysed data and drafted the manuscript. DSD and AL provided technical inputs and supervision throughout the study and manuscript writing.

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