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Original Research

The contributing role of family, religious activities and school in protecting the mental well-being of school going adolescents in a rural district of Sri Lanka

NHS Nadeeka* & Kumudu Wijewardena

Department of Community Medicine, Faculty of Medical Sciences, University of Sri Jayewardenepura, Sri Lanka

*Correspondence: sajaninadeeka@gmail.com https://orcid.org/0000-0003-1201-3514

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Abstract

Introduction: Mental health problems in adolescence are common.

Objectives: To assess the mental health of grade 10 students in Ampara District and their associated factors

Methods: This descriptive study was conducted from May to November 2018. Strengths and Difficulties Questionnaire (SDQ) was used to assess the students' mental health status under five domains. They were total abnormal scores (TAS), emotional problems (EP), conduct problems (CP), hyperactive/inattention problems (HIP) and peer problems (PP). The prevalence of mental health problems was summarized as percentages. The significance of associated factors was assessed at $p<0.05$ and presented in adjusted odds ratio (aOR).

Results: Of the 1340 students, 11.9% had reported TAS. The prevalence of EP, CP, PP and HIP were 15.1%, 12.9%, 12.1% and 11.7%, respectively. Eight factors associated with abnormal scores were identified. Difficulties in schoolwork were associated with all five domains (aOR=5.9; 95% CI: 2.5, 13.6 for TAS; aOR=4.0; 95% CI: 2.1, 7.7 for EP, aOR=2.9; 95% CI: 1.6, 5.4 for CP, aOR =2.6; 95% CI: 1.4, 4.6 for PP and aOR=2.5; 95% CI: 1.4, 4.5 for HIP). Not involving in religious activities regularly at home was associated with all domains except emotional problems (aOR=2.4; 95% CI: 1.3, 4.3 for TAS, aOR=2.2; 95% CI: 1.2, 3.9 for PP, aOR=2.1; 95% CI: 1.2, 3.6 for HIP and aOR=1.9; 95% CI: 1.2, 3.5 for CP). Not having a close family member to discuss their problems was associated with TAS (aOR=2.4; 95% CI: 1.4, 4.2), EP (aOR=3.4; 95% CI: 1.9, 5.8) and HIP (aOR=2.2; 95% CI: 1.3, 3.7). The presence of stressful life events was associated with TAS (aOR= 1.9; 95% CI: 1.1, 3.4), EP (aOR=1.9; 95% CI: 1.1, 3.5) and CP (aOR=2.3; 95% CI: 1.3, 4.3). Tobacco smoking habit of father was associated with TAS (aOR=2.9; 95% CI: 1.2, 6.6) and CP (aOR=2.3; 95% CI: 1.1, 4.6). The alcohol-drinking habit of father was associated with EP (aOR=3.0; 95% CI: 1.3, 7.0). Not attending to additional tuition classes was associated with EP (aOR=1.9; 95% CI: 1.1, 3.4) and PP (aOR=2.6; 95% CI: 1.4, 4.6). The low educational level of the mother was associated with the TAS (aOR=1.9; 95% CI: 1.2, 3.4).

Conclusions & Recommendations: Mental health problems are common among school-going adolescents. All mental health problems were significantly associated with difficulties in schoolwork and most of the others were modifiable family-related factors. School mental health screening programmes are recommended with special attention on students with difficulties in schoolwork. School Mental health awareness and promotional programmes should target the students as well as teachers and parents to create a supportive school and family environment.

Keywords: *adolescents, associated factors, mental health, SDQ*

Introduction

Adolescence is considered as the age from 10 to 19 years and is the transient period between childhood and adulthood. During this sensitive period, a child becomes an adult with intellectual, physical, hormonal and social changes. Therefore, it is a period of increased vulnerability to mental health problems related to the regulation of affect/emotions and behaviour (1). Childhood mental health problems can be categorized into three groups, namely emotional disorders, externalized disorders and developmental disorders. Anxiety, depression, excessive irritability, frustration and anger are some of the common emotional problems (2-3). Examples of behavioural disorders are disruptive disorders, defiant disorders, aggressive behaviours and antisocial behaviours (1-2).

As the World Health Organization estimates, 10-20% of children and adolescents worldwide experience mental disorders, and half of them, begin by the age of 14 years (1). According to a nation-wide survey, nearly one-fifth of Sri Lankan students had mental health problems (4). Adolescents' mental health is associated with many biological, psychological and social factors. The more risk factors adolescents are exposed to, the greater the impact on their mental health. The protective environment of the family, school and community is extremely important to prevent mental health problems in adolescents. Adolescents with mental health problems are more prone to social exclusion, stigma, poor academic performances, risky behaviours and human rights violations. Therefore, mental health problems will affect adolescent's development, education, and social life (1, 5). Hence, identifying high-risk individuals, and detecting and treating their mental health problems are a priority.

Ampara health district is situated in the Eastern Province of Sri Lanka. Its economy is mainly based on agriculture (6). The area was badly affected by the long-lasted civil war (7). Therefore, this study was conducted to examine the mental health status and their associated factors of school-going adolescents in a rural conflict-affected area of Sri Lanka.

Methods

This study was conducted from May 2018 to March 2019 in Ampara Regional Director of Health Service (RDHS) area. All the schools in this area are Sinhala medium schools and belong to three educational zones, namely Ampara, Mahaoya and Dehiattakandiya. Ampara Education Zone consists of four educational divisions, namely Ampara, Uhana, Damana and Lahugala. Mahaoya Zone consists of Mahaoya and Padiyathalawa divisions. Dehiattakandiya Zone consists of Dehiattakandiya West and Dehiattakandiya East divisions.

The sample size for the prevalence study was calculated using an appropriate formula (8). With a prevalence of 16.1% of mental health problems (9), 95% confidence interval, 3% precision, 2.1 design effect (10) and 10% non-response rate, it was taken as 1338. The sampling technique used was multistage stratified cluster sampling with probability proportionate to the size of study population of each educational zone in Ampara RDHS Area. In 2018, there were 4278 students in 118 schools with the student population varying from 141 to 1156 in education divisions, while the number of students in a class varied from 2 to 44. Considering the geographical distribution and variations in the student population, all educational divisions were included in the study. A class of grade 10 of type 1AB, 1C or II schools was defined as a cluster, with an average cluster size of 26. The list of schools that was used as the sampling frame was obtained from the planning unit of each zonal educational office and the RDHS Ampara and cross-checked. One school in Ampara Zone was excluded from the study as it did not belong to Ampara RDHS area. All the students of each selected cluster (class of grade 10) were included in the study.

Further, to identify the risk factors of the mental

health problems, a cross-sectional analytical study was conducted. The sample size calculated using an appropriate formula (11) was 166, however, since there were only 160 students identified with mental health problems in the prevalence study, they were matched with randomly selected 160 individuals who did not have mental health problems.

Strengths Difficulties Questionnaire (SDQ) which has been translated to Sinhalese and validated in Sri Lanka was used as the screening tool (4). This tool can be used among 2-17-year-old persons and contains 25 items in five domains on EP, CP, HIP, PP and prosocial behaviour (a positive behavioural component which is not discussed in this study). The scores obtained for EP, CP, HIP and PP were added together to generate the TAS. The standard cut-off points given by the developers were taken to categorise the participants as normal, borderline and abnormal (12). In addition, a self-administered questionnaire was used to gather information on socio-demographic factors, personal, family and school related factors.

Data analysis

We dichotomized the results obtained for the total SDQ score and subscales as 'normal' and 'abnormal' (borderline and abnormal groups were combined together) groups and presented as percentages. To examine the risk factors for abnormal mental health, aOR was calculated using logistic regression models. Data were analysed using the Statistical Package for the Social Sciences (SPSS) version 21.

Results

Out of the 1382 students invited from all three educational zones, 1340 participated in the study (response rate was 97%). There were 608 boys (45.4%). The greater proportion was Buddhists (99.4%). Nearly one-third claimed that their parents were involved in farming-related occupations. Most were from nuclear families (71.3%) and living with both parents (90.7%). More than three quarters (78.9%) of students claimed that their family had enough income for their expenses.

Students' mean score was 9.6 (SD=4.7) for TAS, 2.6 (SD=1.8) for EP, 1.8 (SD=1.4) for CP, 3.4 (SD 1.9) for HIP and 1.8 (SD 1.5) for PP. More girls reported TAS (11.9%) and EP (16.9%), while boys had more CP (14.0%) and PP (14.8%). The proportion of students having HIP was the same for both sexes (11.7%) (Table 1).

Table 1: Distribution of the participants having abnormal scores according to total and subscales score and gender (N=1340)

SDQ component	Sex	Abnormal score		Normal score		Total
		No.	%	No.	%	
Total score	Female	87	11.9	645	88.1	732
	Male	73	12.0	535	88.0	608
Emotional problems	Female	124	16.9	608	83.1	732
	Male	80	13.2	528	86.8	608
Conduct problems	Female	87	11.9	645	88.1	732
	Male	85	14.0	523	86.0	608
Hyperactivity/inattention problems	Female	86	11.7	646	88.3	732
	Male	71	11.7	537	88.3	608
Peer problems	Female	72	9.8	660	90.2	732
	Male	90	14.8	518	85.2	608

Table 2: Associated factors of the total abnormal SDQ scores and sub-scales among the students

Status	B	SE	Wald	df	Sig	OR	95% CI
Total abnormal score (TAS)							
Having difficulties in schoolwork	1.7	0.4	17.3	1	<0.001	5.9	2.5, 13.6
Not having a close family member to discuss their problems	0.8	0.2	9.2	1	0.002	2.4	1.4, 4.2
No regular religious activities	0.8	0.3	7.9	1	0.005	2.4	1.3, 4.3
Tobacco smoking habit of father	1.0	0.4	6.5	1	0.010	2.9	1.2, 6.6
Past stressful life events	0.6	0.2	5.8	1	0.016	1.9	1.1, 3.4
Low education level of the mother	0.6	0.2	5.8	1	0.016	1.9	1.2, 3.4
Emotional problems (EP)							
Having difficulties in schoolwork	1.3	0.3	17.7	1	<0.001	4.0	2.1, 7.7
Not having a close family member to discuss their problems	1.2	0.2	19.1	1	<0.001	3.4	1.9, 5.8
Alcohol drinking habit of father	1.1	0.4	6.5	1	0.010	3.0	1.3, 7.0
Past Stressful life events	0.6	0.2	4.9	1	0.026	1.9	1.1, 3.5
Not attending additional tuition classes	0.6	0.2	4.6	1	0.031	1.9	1.1, 3.4
Conduct problems (CP)							
Having difficulties in schoolwork	1.0	0.1	12.1	1	<0.001	2.9	1.6, 5.4
Past stressful life events	0.8	0.3	7.8	1	0.005	2.3	1.3, 4.3
Tobacco smoking habits of father	0.8	0.3	5.3	1	0.021	2.3	1.1, 4.6
No regular religious activities	0.6	0.2	6.0	1	0.014	1.9	1.2, 3.5
Hyperactive/Inattention problems (IHP)							
Having difficulties in schoolwork	0.9	0.3	8.8	1	0.003	2.5	1.4, 4.5
Not having a close family member to discuss their problems	0.7	0.2	8.3	1	0.004	2.2	1.3, 3.7
Not regular religious activities	0.7	0.2	7.1	1	0.007	2.1	1.2, 3.6
Peer problems (PP)							
Not attending additional tuition classes	0.9	0.2	10.0	1	0.002	2.6	1.4, 4.6
No regular religious activities	0.8	0.2	7.1	1	0.007	2.2	1.2, 3.9
Having difficulties in schoolwork	0.7	0.3	4.9	1	0.026	2.1	1.1, 3.9

OR=odds ratio

Sex of the controls and cases showed no significant difference in relation to mental health problems. However, difficulties in school work, not involving in routine religious activities at home, not having a close family member to discuss their problems, past stressful life events, tobacco smoking habit of father, alcohol drinking habit of father (only for EP), not attending to additional tuition classes (only for EP and PP) and low educational level of the mother (only for TAS) were significantly associated with emotional and behavioural problems of the students (Table 2). The Negelkarke R^2 values (0.374 for TAS, 0.295 for EP, 0.175 for CP, 0.135 for HIP and 0.124 for PP) and the Hosmer Lemeshow goodness of fit Chi-squared values (χ^2=9.5; p=0.215 for TAS; χ^2=5.4; p=0.6 for EP; χ^2=0.4; p=0.9 for CP; χ^2=6.6; p=0.1 for HIP; and χ^2=1.21; p=0.8 for PP) for the models indicated that they were good fits.

Discussion

As the response rate was 97%, this study would represent the Sinhalese school-going adolescents in agriculturally based rural areas of Sri Lanka.

The prevalence of TAS was 11.9% and that of EP was 15.2%. These findings are not comparable with the previous national survey done in 2016, in which the students reported 8.5% felt lonely, 6.8% had attempted suicide and 38.5% were bullied (13). The prevalence of mental health problems among 13-15 year old students of Jaffna District was 21% (14), while in a national study conducted in 2004, it was 18.9% among school-going adolescents (4). However, the global prevalence of mental health problems in childhood and adolescence was 10-20%, which is comparable to the results of the current study (1).

In the present study, having difficulties in schoolwork is associated with TAS and all subscales. Not having additional support for academic activities were associated with EP (aOR=1.9) and PP (aOR=2.6). Having additional support for academic activities may have been beneficial in school performances and lacking that facility may have caused emotional and peer problems among the students. However, as this is a descriptive study, we could not explain the temporal association between mental health problems and difficulties in schoolwork. Mental health problems in childhood increase the risk of poor academic grades during adolescence (15). Hence, it is important to do a mental health assessment of the students especially who are having difficulties in schoolwork refer them to the mental health professionals.

Not being involved in religious activities regularly at home showed a significant association with TAS (aOR=2.4), CP (aOR=1.9), HIP (aOR=2.1) and PP (aOR=2.2). The importance of religious activities in the mental health promotion of school-going adolescents by improving religious morality, coping, respect for diversity and connectedness are well described in previous studies (16). Religiosity helps to buffer against some types of stressors through improved self-esteem and coping skills to improve mental health (17).

Positive family relationship was assessed in the study and results suggested that not having a close family member to discuss their problems is associated with TAS (aOR=2.4), HIP (aOR=2.2) and EP (aOR=3.4). Positive family relationships had improved the mental health of adolescents in the United States (18), emphasizing the importance of family relationships regarding the mental health of the students.

Smoking habit of the father was significantly associated with TAS (aOR=2.9) and CP (aOR=2.3). Alcohol drinking habit of the father was associated only with EP (aOR=3.0). Both maternal and paternal alcohol abuse are risk factors for adolescents' mental health problems and maternal alcohol abuse is riskier (19). As in the Sri Lankan culture, female alcohol consumption is minimal and it has not been identified as a risk factor in our study (20). In other studies, it was shown that parental smoking predicts higher levels of externalized behavioural problems in adolescents. Biological and neurological effects of smoking may contribute to emotional and behavioural problems among adolescents (21-22). Stressful life events during the past six months were associated with TAS (aOR=1.9), EP (aOR=1.9) and CP (aOR=2.3). Negative life events had increased the risk of emotional and behavioural problems among the Chinese adolescents (23). The detrimental effects of cumulative stress on children's mental health have been described in a study conducted in Jaffna, Sri Lanka (24).

Parental education plays a key role in adolescents' mental health. The current study had shown that mothers' low education level increased the risk of TAS (aOR=1.9). In the international literature too, parents' educational level, especially that of mothers had been identified as a crucial factor in child

development and their coping abilities in later life. An increase in maternal educational level has improved the child's mental health status (25). However, sex, screening time, leisure time activities, family income, child's chronic illnesses or school culture were not associated with mental health problems in our study sample even though they had been proven to be associated in previously done studies locally and globally (9, 26-30).

The prevalence of total and all subclasses of mental health problems were more than 10% of the population, thus could be considered a public health problem in Sri Lanka. It seems that children have an unmet need for mental health services. By improving the mental health screening programmes in the school context, it would enable to identify at-risk students and refer them for further management. The fact that difficulties in schoolwork have been identified as a risk factor, it should be highlighted among the teachers in view of identifying and referring them for mental health services. Further, the importance of positive family environment to prevent and promote mental health of the students has been highlighted in this study.

Conclusions & Recommendations

Emotional and behavioural problems are common among school-going adolescents especially among those with difficulties in schoolwork. Hence, it is important to screen and refer them if indicated to the relevant management facilities. Further, programmes should be planned and implemented to improve the mental health literacy among parents aiming alleviation of family related modifiable associated factors of mental health problems.

Public Health Implications

- The study shows that prevalence of emotional and behavioural problems of school going adolescents is a public health problem in Sri Lanka.
- Most of their associated factors are modifiable and family related.
- The existing school health system could be utilized the address the mental health related issues faced by the adolescents.

Author Declarations

Competing interests: The authors declare that they have no competing interests.

Ethics approval and consent to participate: Ethics clearance was granted by the Ethics Review Committee of the Faculty of Medicine, University of Kelaniya, Sri Lanka (P/102/03/2018). Parental informed written consent and student informed written assent were obtained prior to data collection.

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Author contributions SN and KW were involved in developing the study design, proposal writing, analysis of data and manuscript writing. SN was involved in data collection. KW supervised the overall project.

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