

Stress, Anxiety, and Depression among School Students A Cross-sectional Study

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Abstract

The issues of psychiatric disorders and negative emotions are highly prevalent among school-going students. The current study investigated the prevalence of stress, anxiety, and depression among students in North-East India and found its significant difference and vertical pattern across grades. Using DASS-42, data collection was done from a non-representative sample of 192 students of VII, VIII, and IX grades. Findings showed a high prevalence of psychiatric disorders among sampled students. It was found that anxiety (65.9 per cent) was much more prevalent among students, followed by depression (45.97 per cent) and stress (34.09 per cent). It was identified that the prevalence of stress, anxiety, and depression was higher among IX students (44.54 per cent, 71.43 per cent and 53.78 per cent), followed by the VIII (36.11 per cent, 66.67 per cent and 50 per cent) and VII grades (21.62 per cent, 59.64 per cent and 34.14 per cent). Besides, it also revealed a significant mean difference in students' anxiety, $X^2(2) = 7.149$, $p = 0.028$, and depression, $X^2(2) = 9.666$, $p = 0.008$ with respect to their grades, while no significant mean difference was recorded in stress, $X^2(2) = 2.076$, $p = 0.354$. From the findings, it was inferred that mental health issues among school-going students increase with an increase in their level of school education, which raises serious concerns for stakeholders.

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INTRODUCTION

Mental health problems such as stress, anxiety, and depression are common medical illnesses and psychiatric disorders that mainly affect children and students. Globally, it is estimated that 10–20 per cent of children and students suffer from mental health issues, which can escalate serious chronic diseases and disorders (WHO, 2017). Students' mental health disorders account for 12 per cent of the global burden of diseases, age group where this number was expected to rise by 15 per cent by 2020. (WHO, 2001). The prevalence of mental health issues among Indian Students is particularly concerning.

India has one of the most diversified populations globally, with 75.5 million young people (13–15 years) out of a total population of 1311.1 million (WHO, 2017). It was observed that approximately 6.5 per cent of Indians of all ages suffer from behavioural and mental illnesses and disorders and are in the state of requiring support (WHO, 2001; Gururaj et al., 2016).

Health is the most precious aspect of a student's life. It is crucial to lead a successful life. It is health that Mahatma Gandhi also acknowledged as the real wealth, and even more important than pieces of gold and silver (Somoskovi et al., 2013). According to the World Health Organisation, health is a complete physical, mental and social well-being and not merely the absence of disease or infirmity (WHO, 1998).

Mental health is an inseparable aspect of complete health, and without mental health, there can be no proper physical health (Kolappa et al., 2013). A sound mind lives in a healthy body (Schayegh, 2005). Henceforth, mental health is defined as a state of well-being in which individuals realise their abilities, can cope with the everyday stress of life, work productively and fruitfully, and contribute to their community (WHO, 2004).

Around 1.2 billion people worldwide are students aged 10 to 19 years (Lake, 2011). The school-aged students included in the present study were in their early stage of adolescence. Adolescence is a formative period that is critical for personal growth and development. In addition, because of its physical, psychological, and behavioural transformation from childhood to adulthood, it is also a phase of 'stress and storm', as defined by G. Stanley Hall in 1904 (Arnett, 1999). Students' mental illness can lead to a wide range of behavioural issues at school, at home, community, and even among peers. It makes them vulnerable to chronic mental illness, behavioural disorders, and health-risk behaviours. It has a deleterious impact on their cognitive, emotional, and behavioural functions. It impairs their physical and mental health, leading to poor mental health, low subjective happiness, higher academic anxiety, academic stress, and other emotional and

behavioural adjustment issues that negatively affect their personal and academic lives (Pathak et al., 2011; Bostani et al., 2014; Subramani and Kadiravan, 2017; WHO, 2018). In this backdrop, the researchers investigate the prevalence of stress, anxiety, and depression among school-going students in North-East India and find its significant mean difference and vertical pattern of its prevalence across grades.

To accomplish the constructed objectives, researchers have formulated the following research questions and null hypotheses:

Question 1: What is the level of stress, anxiety, and depression among school students across different?

Question 2: What is the pattern of prevalence of stress, anxiety, and depression among school students across different classes?

HO₁: There is no statistically significant mean difference in the prevalence of stress among school students based on their classes.

HO₂: There is no statistically significant mean difference in the prevalence of anxiety among school students based on their classes.

HO₃: There is no statistically significant mean difference in the prevalence of depression among school students based on their classes.

METHODOLOGY

Research Methods

The present study was quantitative, where a descriptive survey method

was used to collect research input on the prevalence of mental health issues from students. It used a grade-based cross-sectional research design because of its merit in comprehending and analysing the prevalence of stress, anxiety, and depression among school-going students across VII, VIII, and IX standards.

Population and Sample

The upper primary school students and students of secondary schools in the East Khasi Hills district of Meghalaya formed the population of the present study. Using a purposive sampling technique, data collection was completed from a non-representative sample of 192 school students (boys = 112, girls = 80), where 37 students were from Class VII (boys = 24, girls = 13), 36 students were from Class VIII (boys = 21, girls = 15), and 119 students were from Class IX (boys = 67, girls = 52). The sample was selected from two private and three government schools in Shillong city of Meghalaya.

Tool Used

DASS (Depression, Anxiety, and Stress Scale) by Lovibond and Lovibond (1995), was used to assess the prevalence of stress, anxiety, and depression among school students. The scale has 42 items, and each of its dimensions, i.e., stress, anxiety, and depression, has 14 items. Cronbach's alpha method was used for testing the reliability of the scale. The performed statistics showed Cronbach's Alpha value of 0.904 (>0.70), confirmed the

high internal consistency of the scale. Besides, the inter-item correlation matrix also evidenced a high positive association among stress, anxiety, and depression dimensions ($r = >0.75$). Data analysis was completed based on the norm values of the tool, which is provided in the tool, with respect to stress, anxiety, and depression.

Data Collection

A total of seven schools, both elementary and secondary, were invited for the present study. However, only five schools given consent, and thereby one included in the present study. The researchers themselves have collected the data. Before administration of the tool, each participant was informed about the purpose of data collection. Also, participants were informed of keeping their personal information confidential, such as their names, ages, exam results, and institution names. The participation was entirely voluntary, and participants were informed of their choice to opt out if they wanted so. The tool's administration was done during the school period. Students were given one hour class to complete the tool. It was conducted in the presence of class teachers which took around 30–40 minutes.

Sample Statistics

The descriptive statistics showed skewness values of 0.668, 0.511, and 0.942 for stress, anxiety, and depression, respectively. Besides, the

Shapiro-Wilk test was employed, and it was found statistically significant for all the three dimensions of the scale (p -value <0.05). Thus, it indicated that the collected data were unfit for normal distribution, and so the researchers utilised non-parametric statistics for differential analysis.

Statistical Design

In the present study, descriptive and non-parametric differential statistics were employed for data analysis. Descriptive statistics, such as frequency distribution, cross-tab analysis, mean, and differential statistics, such as an independent sample Kruskal-Wallis H (One-Way ANOVA on Rank) test, were performed using IBM SPSS Statistics 22.

ANALYSIS AND RESULTS

Prevalence of Stress, Anxiety, and Depression among School Students

Table 1 showed that the prevalence of stress, anxiety, and depression among school students was high. It was found that the prevalence of anxiety (65.9%), was comparatively higher among school students, followed by depression (45.97%), and stress (34.09%). It revealed that the prevalence of stress, anxiety, and depression was high among school students across classes. Further analysis showed that stress, anxiety, and depression increased as they went to higher classes. Analysis showed that the prevalence of stress, anxiety, and depression was 21.62,

59.64, and 35.14 per cent for grade VII; 36.11, 66.67, and 50 per cent for grade VIII, and 44.54, 71.43, and 53.78 per cent for grade IX students, respectively. Results also evidenced an upward trend of stress, anxiety, and depression among students, increasing with their level of school education. Stress, anxiety, and depression were highest among grade IX students, followed by grade VIII and grade VII students (Figure 1).

Descriptive Analysis of Stress, Anxiety, and Depression in Terms of Students' Grades

Table 2 showed that among surveyed students, 78.38 per cent of grade VII students had an average level of stress, and 21.62 per cent of grade VII students reported mental stress issues. Of the 21.62 per cent of stressed students, 13.51 per cent had mild, 5.41 per cent had moderate, and 2.70 per cent had severe stress levels. 63.89 per cent of grade VIII school

Table 1
Descriptive analysis of stress, anxiety and depression among school students across grades

Grades	Frequency of stress, anxiety, and depression (%)		
	Stress	Anxiety	Depression
VII	21.62	59.64	35.14
VIII	36.11	66.67	50
IX	44.54	71.43	53.78
Overall	34.09	65.91	45.97

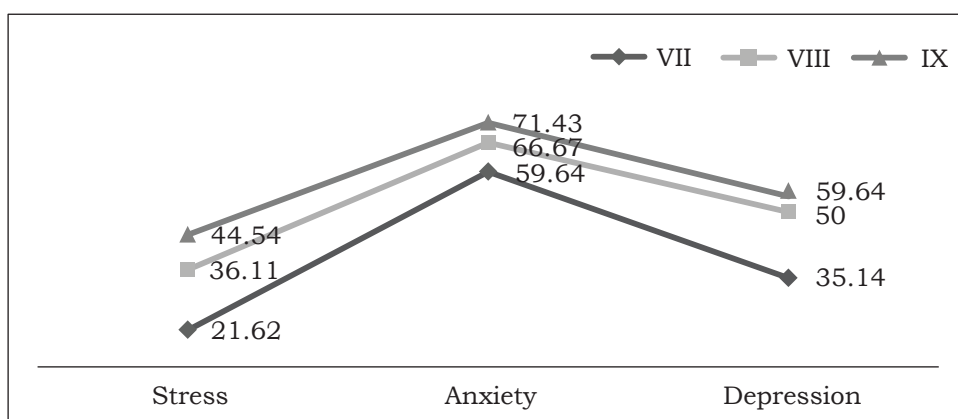


Fig. 1: Pattern of stress, anxiety and depression among school students (%)

students had normal stress levels, while 36.11 per cent reported having mental stress issues. Out of these 36.11 per cent of students, 19.44 per cent had mild, 11.11 per cent had moderate, 2.78 per cent had severe, and 2.78 per cent had extremely severe stress. Lastly, 55.46 per cent of IX grade school students had normal stress levels, while 44.54 per cent of students reported having mental stress issues. Out of these 44.54 per cent of students, 16.81 per cent had mild, 15.97 per cent had moderate, 10.08 per cent had severe, and 1.68 per cent had extremely severe stress levels. Thus, the results evidenced a high prevalence of stress symptoms among school students across grades at mild, moderate, severe, and extremely severe levels (Figure 2).

Similarly, Table 2 showed that 40.54 per cent of grade VII students had normal anxiety levels among all the surveyed students, while 59.46 per cent of students reported having

mental anxiety. Out of 59.46 per cent of students with anxiety, 21.62 per cent had mild, 24.32 per cent had moderate, 8.11 per cent had severe, and 5.41 per cent had extremely severe anxiety levels. 33.33 per cent of grade VIII students had normal anxiety levels, while 66.67 per cent of students reported having mental anxiety. Among grade VIII students, 11.11 per cent had mild, 30.56 per cent had moderate, 22.22 per cent had severe, and 2.78 per cent had extremely severe anxiety. Lastly, 28.57 per cent of IX grade students had normal anxiety levels, and 71.43 per cent reported having mental anxiety symptoms. 8.40 per cent had mild, 20.17 per cent had moderate, 21.01 per cent had severe, and 21.85 per cent had extremely severe anxiety levels. Thus, the analysis evidenced a high prevalence of anxiety symptoms among school students across different grades at mild, moderate, severe, and extremely severe levels (Figure 3).

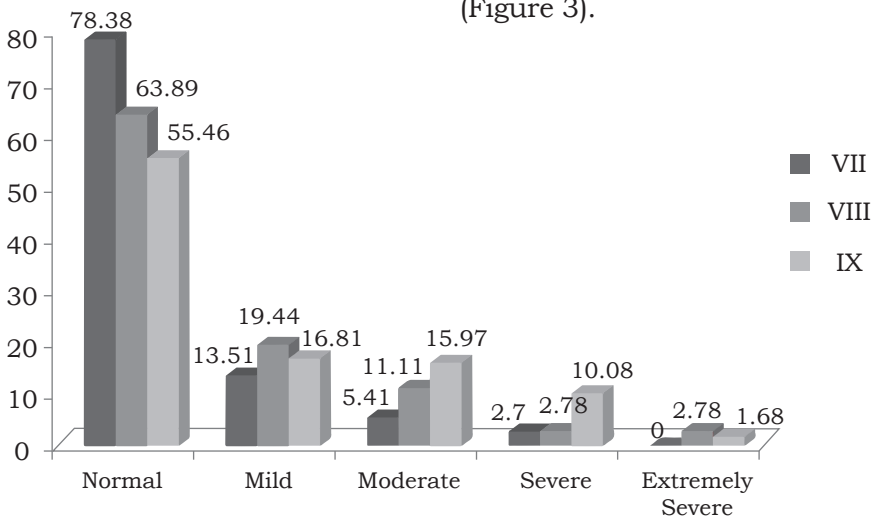


Fig. 2: Level of stress among school students across grades (%)

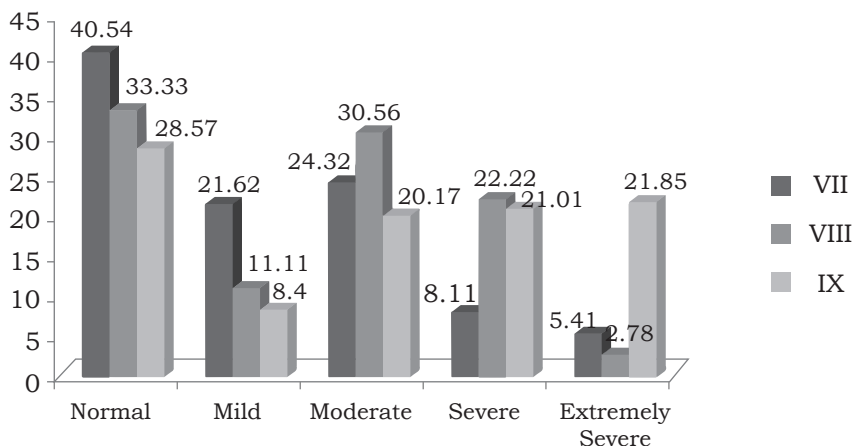


Fig. 3: Level of anxiety among school students across grades (%)

Furthermore, Table 2 showed that 64.86 per cent of grade VII students had no depression, while 35.14 per cent of students reported having symptoms of mental depression. Out of 34.14 per cent of depressed students, 21.62 per cent had mild, 8.11 per cent had moderate, and 5.41 per cent had a severe level of depression. Again, 50 per cent of

grade VIII students had an average score on the depression scale, and 50 per cent of students reported having symptoms of mental depression. Among students with depression, 16.67 per cent had mild, 19.44 per cent had moderate, 8.33 per cent had severe, and 5.56 per cent had extremely severe levels of depression. In grade IX, 46.22 per cent of students

Table 2
Stress, anxiety, and depression among school students across grades at different levels

Mental health dimensions	Grades	N (%)	Levels N (%)				
			Normal	Mild	Moderate	Severe	Extremely Severe
Stress	VII	19.27	78.38	13.51	5.41	2.70	00
	VIII	18.75	63.89	19.44	11.11	2.78	2.78
	IX	61.98	55.46	16.81	15.97	10.08	1.68
Anxiety	VII	19.27	40.54	21.62	24.32	8.11	5.41
	VIII	18.75	33.33	11.11	30.56	22.22	2.78
	IX	61.98	28.57	8.40	20.17	21.01	21.85
Depression	VII	19.27	64.86	21.62	8.11	5.41	00
	VIII	18.75	50.00	16.67	19.44	8.33	5.56
	IX	61.98	46.22	15.97	14.29	15.97	7.56

were found to be at normal levels on the DAS scale, while 53.78 per cent had reported symptoms of mental depression; 15.97 per cent had mild, 14.29 per cent had moderate, 15.97 had severe, and 7.56 per cent had extremely severe mental depression. Thus, the analysis showed a high prevalence of depressive symptoms among school students across grades at mild, moderate, severe, and extremely severe levels (Figure 4).

Differential Analysis of Stress, Anxiety, and Depression in Terms of Students’ Grades

To test the prevalence of stress, anxiety, and depression among school students across the grades, the researchers have executed an independent sample Kruskal-Wallis H test. Table 3 showed that there was no statistically significant differences in the pair score between school

students of different grades on mental stress, $X^2(2) = 2.076, p=0.354 (>05)$, with a mean pair score of 84.78, 97.81, and 91.75 for grade VII, VIII, and IX students, respectively. So, the formulated null hypothesis, ‘ H_{0_1} : There is no statistically significant mean difference in the prevalence of stress among school students based on their classes’ was accepted as researchers failed to reject it at 95 per cent confidence levels (Figure 5).

As shown in Table 3, the performed independent samples Kruskal-Wallis H test confirmed a statistically significant difference in pair scores between school students of different grades on anxiety, $X^2(2) = 7.149, p=0.028 (<0.05)$, with a mean pair score of 78.65, 88.18, and 104.57 for grade VII, VIII, and IX students, respectively. So, the formulated null hypothesis, ‘ H_{0_2} : There is no statistically significant

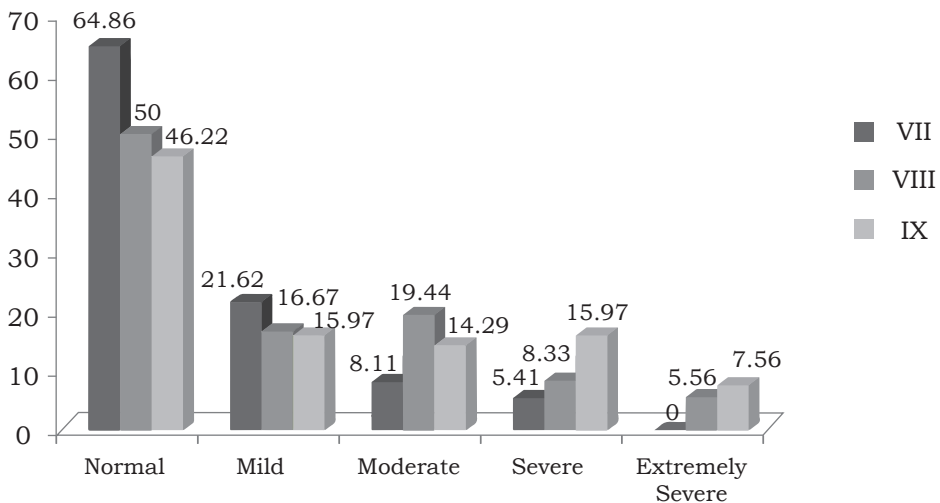


Fig. 4: Level of depression among school students across grades (%)

mean difference in the prevalence of anxiety among school students based on their classes' was rejected at 95 per cent confidence levels, and thereby an alternative hypothesis, that is, 'There is a statistically significant mean difference in the prevalence of anxiety among school students based on their classes', was accepted (Figure 5). Further, a pair-wise analysis using a Mann-Whitney U test (in a post-hoc manner) showed a significant difference in anxiety only between students of grade VII and IX, $p=0.015$, while no significant difference was recorded between the students of grade VII and VIII, $p=0.362$ and students of grade VIII and IX, $p=0.105$.

Likewise, Table 3 also showed that there was a statistically significant difference in pair scores between school students of different grades on depression, $X^2(2) = 9.666$, $P=0.008$

(<0.05), with a mean pair score of 71.76, 96.36, and 104.24 for grade VII, VIII, and IX students, respectively. So, the formulated null hypothesis, 'H₀: There is no statistically significant mean difference in the prevalence of depression among school students based on their classes' was rejected at 95 per cent confidence levels, and thereby an alternative hypothesis, that is, 'there is a statistically significant mean difference in the prevalence of depression among school students based on their classes', was accepted (Figure 5). The further pair-wise analysis, using a Mann-Whitney U test (in a post-hoc manner) showed a significant difference in depression only between students of grade VII and IX, $p=0.002$, while no significant difference was recorded between students of grade VII and VIII, $p=0.054$ and students of grade VIII and IX, $p=0.448$.

Table 3
Mean Comparison of Stress, Anxiety, and Depression among School Students across Grades

Mental health dimensions	Grades	N	Mean	df	X ² value	Sig. (p) value	Decision
Stress	VII	37	84.78	2	2.076	0.354	H ₀ retained
	VIII	36	97.81				
	IX	119	99.75				
Anxiety	VII	37	78.65	2	7.149	0.028	H ₀ rejected
	VIII	36	88.18				
	IX	119	104.57				
Depression	VII	37	71.76	2	9.666	0.008	H ₀ rejected
	VIII	36	96.36				
	IX	119	104.24				

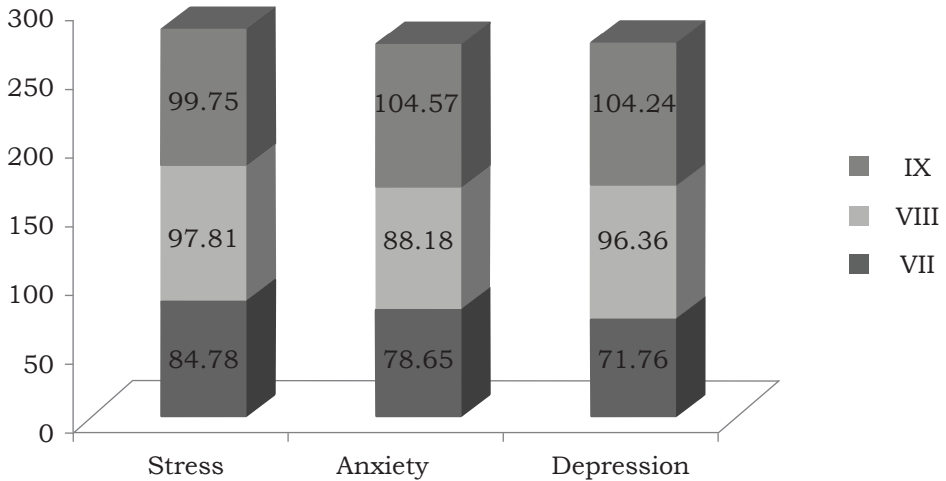


Fig. 5: Mean comparison of stress, anxiety, and depression among school students across grades

DISCUSSIONS

The present study evidenced mental health problems as common mental illnesses and psychiatric disorders experienced by school-going students. It revealed a high prevalence of stress, anxiety, and depression among school students, 34.09, 65.9, and 45.97 per cent, respectively (Table 1). Similar findings have also been reported in previous studies, in which a substantial proportion of school-going students had various mental health problems (Pathak et al., 2011; Reddy et al., 2013; Labrague, 2014; Ranasinghe et al., 2016; Kumar and Akoijam, 2017; Sandal et al., 2017; Daya and Karthikeyan, 2018; Alahmadi, 2019; Nawaz and Vandana, 2020). These studies identified stress, anxiety, and depression as the most common mental health problems found among

school students. Also, it evidenced the prevalent of these mental health problems among urban school students in a higher proportion as compared to rural school students. Thus, it can be inferred that stress, anxiety, and depression are the most commonly found mental health problems among school-going students. And the high prevalence of these mental health problems may be attributed to academic pressure, as there is a burden on students to do well and decide their future career goals. Unavailability of guidance and counseling services in schools aggravates these mental health issues leading to harmful behaviours among the affected students.

Further, the present study showed that among all students, 21.62, 59.64, and 34.14 per cent of grade VII; 36.11, 66.67, and 50 per cent of

grade VIII; 44.54, 71.43, and 53.78 per cent of grade IX reported having stress, anxiety, and depression at mild, moderate, severe and extremely severe levels (Table 2). An identical finding was reported by Kaushal et al. (2018), which evidenced a high prevalence of educational stress among school students, with 43, 56.6, and 0.4 per cent having mild, moderate, to severe levels stress, respectively. Thus, it can be inferred that the prevalence of these mental health problems among school-going students ranged from mild to severe levels. Henceforth, it suggested to necessitate a prompt action to minimise students' mental health problems at earliest possible time.

The present study also found an increasing trend of stress, anxiety, and depression with increasing levels of study grades education, which indicates that issues of mental health among students increase with an increase in their level of school education. It was found that the prevalence of stress, anxiety, and depression was higher among IX grade students, followed by the VIII and VII grades. An increase in students' mental health problems may be attributed to the increasing academic pressure with higher classes. Also, these students face rapid physical and psycho-social changes, which go unattended in the Indian society. Overall, the increased burden of educational, psychological, and societal expectations on school students leads to increased mental

health problems, which worsen due to a lack of awareness and access to mental health services in school and society. Similar findings were also found in the previous studies, wherein the association of the prevalence of mental health problems with individuals' chronological age was empirically evidenced (Wahab et al., 2013; Eva et al., 2015). In their study, Wahab et al. (2013) reported a significant association of students' age with the prevalence of stress and depression. Similarly, Eva et al. (2015) evidenced a significant association of age cohort with a prevalence of mental stress among students. However, Merchant et al. (2018) examined the association of students' mental health with their ages, wherein no significant association of prevalence of stress, anxiety, and depression among students with their age groups was found.

Further, regarding the increasing trend of mental health issues associated with age, Hasumi et al. (2012) reported that adverse mental health (anxiety, depression, sadness, loneliness, and hopelessness) worsens with the worsen age of school students. Khanekesh (2012) found that the prevalence of stress among students increases with their increasing age and educational level. Besides, it was also reported that the prevalence of mental stress among higher secondary students of XI and XII was higher than the secondary school students in IX and X Classes (Kaushal et al., 2018). Van

Droogenbroeck et al. (2018) reported that mental health problems increase with age. It was found that young adults (20–25 years of age) had more distress, anxiety, and depression than adolescent (15–19 years of age). Hakamy et al. (2017) found increasing trends in the prevalence of negative emotions with increasing age. It was identified in their study that older students >18 years of age reported having higher stress, anxiety, and depression, followed by the students of 16–17 years and <16 years of age. However, Zafar et al. (2017) reported a significant association of age with students' depression, but in their study, the 20–23 years age group reported having higher mental depression than the 24–25 years of age-group, indicate a decline in health issues with increasing age for adults. Similarly, Singh et al. (2017) found decline in the prevalence of depression, anxiety, and stress among students of 17–31 years of age with an increase their age. Thus, based on empirical evidence, it can be inferred that the symptoms of stress, anxiety, and depression increase among school students with an increase in their level of school education. However, there patterns may differ in adult populations (Singh et al., 2017; Zafar et al., 2017).

Also, the present study evidenced a significant difference in the prevalence of anxiety, $X^2(2) = 7.149$, $p=0.028$ (<0.05), and depression, $X^2(2) = 9.666$, $p=0.008$ (<0.05) among school students across different

classes. In contrast, no significant difference was found in mean stress, $X^2(2) = 2.076$, $p=0.354$ (>05) (Table 4). There was no study that researchers came across that supported or refuted the present study's findings establishing the differential in mental health prevalence in students based on their grades. However, since mental health problems are related to age, so it may be concluded that there is a significant association between these mental health issues, particularly anxiety and depression, and students' classes.

DELIMITATIONS AND SUGGESTIONS

The present study was delimited to understand the mental health problems, specifically stress, anxiety, and depression, prevalent among students in Shillong city. Students only from the VII, VIII, and IX classes were considered as population samples. The present study was again delimited to provide descriptive research inputs from non-representative samples of school students. Henceforth, according to the study's findings, as it evidences a higher prevalence of stress, anxiety, and depression in students, the same study can be further taken to include the larger size of representative samples to gather sufficient information on the status quo of students' mental health. The present study found the classes of students correlated with the students' mental health. Researchers can further study if other socio-demographic,

individual-specific, psychological, family, and institution-related factors affect students' mental health. The present study found that mental health issues among students increased with an increase in their level of school education. Future researchers can explore the pattern of mental health issues in students from different age groups, i.e., children, adolescent, and adults using the same cross-sectional research design.

RECOMMENDATIONS

Mental illness is an outcome of multiple factors that induced psychological problems, which is critical for school-going students in northeast India. Therefore, stakeholders are urged to prioritise students' mental health and spread awareness among stakeholders about mental health and its impact on students. Educational institutions must provide guidance and counseling to students who are vulnerable to health-risk behaviours such as drug abuse, tobacco consumption, and alcohol abuse. The resilience factors need to be fostered among students to better adjust to adverse situations and recover from mental illness through family and social support, inculcating a sense of purpose in life and helping them in conflict resolutions. Teachers and parents need to work together through the 'home-school partnership' to minimise mental health issues. Teachers should establish a 'spontaneous collaboration' with

parents to regulate students' activities and psycho-social behaviour. Schools should also encourage students to engage in extracurricular activities at home and school, as several studies have shown that indoor games, yoga, and physical exercises positively influence the mental health and well-being of individuals.

CONCLUSION

The present study assessed the prevalence of stress, anxiety, and depression among school students. It was found that a significant proportion of the school student population experienced mental health problems. Anxiety was much more prevalent among students, followed by depression and stress. Further, the study examined the vertical pattern of the prevalence of mental health problems, and the results indicated that these problems increased among students with an increase in their classes. The same pattern was observed for all the three dimensions, i.e., stress, anxiety, and depression. The findings of the study provide valuable information about the prevalence of mental health problems among students in northeast India. The relationship between the prevalence of mental health problems and their classes is alarming. A detailed, in-depth study may be carried out to explore the programme of the prevalence of mental health issues and causes of poor mental health among school students. The high prevalence of mental health problems

among students requires urgent intervention and strategic planning to combat the adverse impact of these problems on students.

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