


Depression and self-esteem among Afghan school-going adolescents under the Taliban Government: a cross-sectional study

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Abstract

Background During the period of adolescence, several major developmental changes occur that can have significant impact on an individual's brain structure and functioning through their entire life.

Aims The present study aimed to examine the association between depression and self-esteem alongside specific sociodemographic factors among school-going adolescents living under the rule of Taliban.

Methods A cross-sectional survey study was conducted with adolescents (n = 452) from 20 randomly selected public primary, secondary and high schools of Herat province (Afghanistan) out of the 86 schools registered in Herat Education Department. The survey included the Center for Epidemiological Studies-Depression Scale (CES-D) and Rosenberg's Self-Esteem Scale (RSES).

Results Two-thirds of adolescents reported depression symptoms (65.3%) and 86.3% reported poor self-esteem. Multiple regression analysis indicated that (i) mother's education level was significantly associated with depression symptoms and (ii) low-income economic status was significantly associated with self-esteem.

Conclusion As well as being one of the few studies in Afghanistan, the present study is one of the very few to assess the association between class group, self-esteem, and depression symptoms. These findings may be used by healthcare authorities and school administrators to raise awareness and implement strategies to facilitate self-esteem among school-going adolescents.

Keywords Depression · Self-esteem · Adolescence · Afghanistan

1 Introduction

Childhood and adolescence are crucial periods in human development that can have a lifetime-long impact on health and wellbeing [1]. During the period of adolescence, several major developmental changes occur that can have significant impact on an individual's brain structure and functioning through the entire life [2]. Adolescents around the world frequently experience depression as a prevalent mental health issue [3]. When compared to their

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peers, adults who had depression in their adolescence show lower self-perceptions of their overall health and report more unfavorable employment experiences [4].

Previously, depression was regarded as a condition primarily affecting adults, and its diagnosis relied on identifying key symptoms including enduring and widespread sadness, diminished interest in pleasurable pursuits, diminished self-worth, overwhelming guilt, contemplation of self-harm, and alterations in sleep and eating habits, without much regard for age-related variances [5]. The scientific foundation to comprehend the progression of mental health disorders from childhood into adulthood has recently been developed [6]. With transition to adolescence, the gender difference in depression begins to appear between the ages 13–15 years [7]. Moreover, the lifetime depression occurrence in girls is much greater than the male rate between the ages 15–18 years, such that the male rate goes from 1% at age 15 years to 4% at age 18 years, and the female rate goes from 11% at age 15 years to 23% at age 18 years [7].

Few investigations have been carried out concerning psychological distress among adolescents in Afghanistan [8]. Over the past 30 years, conflict and poverty in Afghanistan have negatively impacted the general population's mental health [9]. Afghanistan's long history of war and conflict has affected the mental health of Afghan adolescents [8, 10]. In a study of 1011 Afghan adolescents, 22.2% met the criteria for a probable psychiatric disorder, 18.0% met the criteria for emotional concerns, and 23.9% met the criteria for posttraumatic stress disorder [8]. In the same study, females were twice as likely to have a probable psychiatric disorder compared to males. Being of younger age was a risk factor in a different study in Afghanistan examining the poor mental health of participants aged 18–35 years [11]. A total of 32.9% of adolescents in various Asian countries, including Laos, Mongolia, Nepal, and Sri Lanka, encountered some form of psychological distress [12], and in a national study of adolescent schoolchildren in Thailand, 26.6% reported experiencing one or more types of psychological distress [13].

Numerous theoretical models have investigated the relationship between personality characteristics and depression, with a particular emphasis on self-esteem [14]. It has been suggested that individuals with high self-esteem are better equipped to cope with negative events, whereas those with low self-esteem may be more prone to various forms of psychopathology [15]. Within this context, the present study was carried out within the context of the vulnerability model to understand the association between depression and self-esteem among adolescents living in challenging circumstances under Taliban rule.

A study by Latiff et al. reported that the prevalence of mild depression among secondary school students in Malaysia was 33.2% [16]. Similarly, Bhattarai et al. also assessed the prevalence of depression among high school students in Nepal and reported that 44.2% of the students had depression [17]. However, a study by Juul et al. among older children and young adolescents in Norway reported a much lower rate of depression (under 10%) [18]. A study by Scholte et al. conducted in eastern provinces of Afghanistan reported that 38.5% of individuals aged 15 years and above had depression [19]. However, the data for this study were collected in 2003.

A study by Yaacob et al. among secondary school adolescents in Malaysia reported that 24.2% had depression and 42.9% of them had low self-esteem [20]. Other studies have also reported a relationship between psychological distress and low self-esteem. For instance, a study by Nguyen et al. with students in Vietnam reported that the presence of academic stress [21] contributed to the development of inadequate levels of self-esteem. Similar findings were reported in a study by Yu et al. with students from rural primary and junior high schools in China who also reported that presence of academic distress contributed to the development of inadequate levels of self-esteem [22].

The present study addresses a critical research gap by examining the association between depression and self-esteem among school-going adolescents living under the rule of the Taliban in Afghanistan. The unique context of Afghanistan, particularly relating to the early days of the Taliban rule, and the examination of sociodemographic factors that may significantly influence mental health outcomes at a time of great cultural change are both original and novel. Identifying such associations is critically important because depression can leave serious effects on an individual's day-to-day functioning and overall health and can in extreme cases lead to hopelessness and suicidal thoughts [23].

More specifically, the present study examined the association between depression and self-esteem, with a specific focus on the vulnerability model among school-going adolescents living under the rule of Taliban. The vulnerability model, supported by significant empirical evidence [24–26], posits that individuals with low self-esteem are more susceptible to experiencing depression. A cross-sectional study was conducted to identify the prevalence of depression, self-esteem, and related factors among this population.

By adopting a cross-sectional design, data were collected from a sample of school-going adolescents, to estimate the prevalence of depression and self-esteem levels among this population. Additionally, specific sociodemographic factors were examined that might contribute to the development of depressive symptoms, considering their potential

role in the vulnerability model. The findings were expected to provide insight regarding the psychological well-being of adolescents in this context and provide valuable data to inform targeted interventions and support systems.

2 Methods

2.1 Study design, setting, and participants

A cross-sectional study was conducted in 20 randomly selected public primary schools, secondary schools, and high schools of Herat province (Afghanistan) out of the 86 schools registered in Herat Education Department. The 20 schools were selected using a lottery method. Students were selected randomly from all of the classes of the selected schools. Those aged between 9 to 18 years were invited to participate in the study. The eligibility criteria to participate in the present study were: (i) being a school student; (ii) being under 18 years old; (iii) being able to understand the Dari/Persian language, and (iv) providing written or verbal informed consent from their parents. A total of 452 students participated in the present study who completed a survey at home. The surveys were collected the next day during school time. The Afghanistan Center for Epidemiological Studies Ethical Committee provided the approval to conduct the study on 25th of October 2021. The Department of Education of Herat province gave permission to conduct the study across public schools in this province.

2.2 Instruments

A survey comprising three sub-sections was used in the present study. The sub-sections assessed socio-demographics, depression, and self-esteem. The socio-demographic section included questions regarding age, gender, type of residency (urban or rural), class group (primary, secondary, high school), mother and father's educational levels, and economic status (low-income, middle-income, high-income).

The Dari version of the 20-item Center for Epidemiological Studies Depression Scale (CES-D) was employed to evaluate the depressive symptoms of the participants [27]. The CES-D consists of three sub-scales, namely negative items, positive items, and interpersonal relationships. Each item, such as *"I felt everything I did was an effort,"* is rated on a scale from 0 (*rarely or none of the time/less than one day during the past week*) to 3 (*most or all of the time/5–7 days during the past week*). The scores range from 0 to 60. The standard cut-off score was used as follows: a score between 0 to 15 was considered as normal. Participants with a score higher than 15 were considered as having depression symptoms. Cronbach's alpha in the present study was 0.87.

The 10-item Rosenberg Self-Esteem Questionnaire [28] was used to assess self-esteem among participants. All of the items (e.g., *"I am able to do things as well as most other people"*) are scored from 0 (*strongly disagree*) to 3 (*strongly agree*). The scores range from 0 to 30. Poor self-esteem was rated as scoring between 0 to 15, and normal/good self-esteem was rated as scoring between 16 to 30. Cronbach's alpha in the present study was 0.86.

2.3 Data analysis

The data entry process utilized Microsoft Excel 2016, while the analysis was conducted using IBM SPSS version 26.0 for Windows. Descriptive statistics, including means, standard deviations, frequencies, and percentages, were calculated. Chi-square tests were employed to assess associations between variables. Multiple logistic regression analysis was performed to investigate the influence of independent socio-demographic factors, depression, and self-esteem on the presence of depression. Variables with a *p*-value below 0.05 were deemed statistically significant.

3 Results

The present study involved the participation of 452 adolescents, whose ages ranged from 9 to 18 years, with a mean age of 13.52 years ($SD \pm 2.53$). More than three-quarters of participants were female (75.2%). More than half of the participants were in the primary school class group (57.7%). Only one in 20 participants were living in the rural areas (4.4%). Less than one-fifth of the participants had fathers who went to university (15.0%), and only one-tenth of the participants had mothers who went to university (11.3%). Only one-eighth of participants had high-income economic status (13.9%). Table 1 provides a detailed breakdown of the participants' characteristics.

Symptoms of depression were identified in approximately two-thirds of the participants, with prevalence rates of 65.3%. This included individuals between the ages of 9 and 13 years (64.0%), those attending secondary school (67.0%), and females (66.2%). There was a significant relationship between the class group and the presence of depression symptoms showing a decrease in the presence of depression symptoms among high school students compared to the primary school students. Moreover, secondary school students had the highest rate of depression symptoms (see Table 2). No other significant differences were found in relation to socio-demographic variables and depression.

Follow-up post-hoc test indicated that the number of secondary school students with depression was significantly higher than the number of primary school students with depression ($p = 0.011$). However, there were no significant differences between the number of secondary school students and high school students with depression ($p = 0.447$). Follow-up post-hoc tests also indicated no significant differences between the number of depressed students from different economic backgrounds (p -values ranging from 0.065 to 0.134).

Almost nine-tenths of participants were found to have poor self-esteem (87.2%) including both males (87.5%) and females (85.9%) (Table 3). Almost all of the participants in the high school were found to have poor self-esteem (94.5%). One-tenth of the participants with high economic status were found to have normal (i.e., good) self-esteem (9.5%). There was a significant relationship between self-esteem and (i) the class group (high school students had poorer self-esteem compared to primary school students), (ii) father's educational level (students whose fathers had a university degree had higher self-esteem than those with illiterate educational background), and (iii) economic status (high income students had lower self-esteem than middle-income students). More specifically, follow-up post-hoc tests indicated that (i) poor self-esteem was significantly

Table 1 Characteristics distribution of the study sample by gender ($n = 452$)

Characteristic	Categories	Male		Female		Total	
		N	%	N	%	N	%
Age group	9–13-years	15	5.8	243	94.2	258	57.1
	14–18-years	97	50.0	97	50.0	194	42.9
Class group	Primary	11	4.2	250	95.8	261	57.7
	Secondary	39	39.0	61	61.0	100	22.1
	High school	62	68.1	29	31.9	91	20.1
Residency	Urban	106	24.5	326	75.5	432	95.6
	Rural	6	30.0	14	70.0	20	4.4
Father's education level	Illiterate	16	17.2	77	82.8	93	20.6
	Primary school	19	27.5	50	72.5	67	15.3
	Secondary school	34	26.0	97	74.0	131	29.0
	High school	20	22.0	71	78.0	91	20.1
	University	23	33.8	45	66.2	68	15.0
Mother's educational level	Illiterate	42	24.6	129	75.4	171	37.8
	Primary school	29	38.2	47	61.8	76	16.8
	Secondary school	25	22.5	86	77.5	111	24.6
	High school	9	20.9	34	79.1	43	9.5
	University	7	13.7	44	86.3	51	11.3
Economic status	High-income	3	4.8	60	95.2	63	13.9
	Middle-income	97	29.0	238	71.0	335	74.1
	Low-income	12	22.2	42	77.8	54	11.9
Total		112	24.8	340	75.2	452	100.0

Table 2 Association of depression with participants socio-demographic characteristics (n=452)

Characteristic	Categories	Mental Health				p-value
		Normal		Depressed		
		N	%	N	%	
Age group	9–13-years	93	36.0	165	64.0	0.499
	14–18-years	64	33.0	130	67.0	
Gender	Male	42	37.5	70	62.5	0.478
	Female	115	33.8	225	66.2	
Class group	Primary	93	35.6	168	64.4	0.014^a
	Secondary	24	24.0	76	76.0	
	High school	40	44.0	51	56.0	
Residency	Urban	154	35.6	278	64.4	0.058
	Rural	3	15.0	17	85.0	
Father's education level	Illiterate	32	34.4	61	65.6	0.175
	Primary school	24	34.8	45	65.2	
	Secondary school	41	31.3	90	68.7	
	High school	41	45.1	50	54.9	
	University	19	27.9	49	72.1	
Mother's educational level	Illiterate	49	28.7	122	71.3	0.163
	Primary school	28	36.8	48	63.2	
	Secondary school	45	40.5	66	59.5	
	High school	19	44.2	24	55.8	
	University	16	31.4	34	68.6	
Economic status	High-income	24	38.1	39	61.9	0.059 ^b
	Middle-income	122	36.4	213	63.6	
	Low-income	11	20.4	43	79.6	
Total		157	34.7	295	65.3	

Bold value refers to significant results

^aPost-hoc test with Bonferroni adjustment results: Primary-Secondary $p=0.011$; Secondary-High school $p=0.447$; Primary-High school $p=1.000$

^bPost-hoc test with Bonferroni adjustment results: High-income with Middle-income $p=0.065$; Middle-income with Low-income $p=0.134$; High-income with Low-income $p=1.000$

higher among high-school students compared to primary school students ($p=0.001$), (ii) there were no significant differences between secondary school and high-school students in relation to poor self-esteem ($p=0.209$), and (iii) poor self-esteem was significantly higher among those with a high economic status compared to middle-income students ($p=0.024$).

Multiple logistic regression analysis was performed to see which variables predicted depressive symptoms. The results for each variable were as follows: age (AOR=0.73, $p=0.43$), gender (AOR=0.77, $p=0.39$), class group [secondary school (AOR=0.65, $p=0.29$)], economic status [low-income (AOR=0.44, $p=0.07$)], place of residency (AOR=0.31, $p=0.07$), father's educational level [university (AOR=0.48, $p=0.07$)], and mother's educational level [secondary school (AOR=1.97, $p=0.02$)] (Table 4).

Multiple logistic regression analysis was performed to see which variables predicted high self-esteem. The results for each variable were as follows: age (AOR=0.75, $p=0.55$), gender (AOR=0.77, $p=0.56$), class group [secondary (AOR=0.56, $p=0.25$)], economic status [low-income (AOR=0.76, $p=0.57$)], place of residency (AOR=1.07, $p=0.92$), father's educational level [university (AOR=0.42, $p=0.11$)], mother's educational level [university (AOR=1.04, $p=0.94$)] (Table 5).

4 Discussion

In the present study, significant associations were found between class group and depression symptoms among participants. The study found that secondary school students were significantly more likely than primary school students to suffer from depression. However, no significant differences were found in depression rates among secondary and high

Table 3 Association of self-esteem with participants socio-demographic characteristics (n = 452)

Characteristic	Categories	Self-esteem				p-value
		Poor		Normal		
		N	%	N	%	
Age group	9–13-years	225	87.2	33	12.8	0.509
	14–18-years	165	85.1	29	14.9	
Gender	Male	98	87.5	14	12.5	0.666
	Female	292	85.9	48	14.1	
Class group	Primary	227	87.9	34	13.0	0.002^a
	Secondary	77	77.0	23	23.0	
	High school	86	94.5	5	5.5	
Residency	Urban	373	86.3	59	13.7	0.865
	Rural	17	85.0	3	15.0	
Father's education level	Illiterate	80	86.0	13	14.0	0.005
	Primary school	55	79.7	14	20.3	
	Secondary school	111	84.7	20	15.3	
	High school	89	97.8	2	2.2	
	University	55	80.9	13	19.1	
Mother's educational level	Illiterate	142	83.0	29	17.0	0.112
	Primary school	63	82.9	13	17.1	
	Secondary school	101	91.0	10	9.0	
	High school	41	95.3	2	4.7	
	University	43	84.3	8	15.7	
Economic status	High-income	57	90.5	6	9.5	0.017^b
	Middle-income	293	87.5	42	12.5	
	Low-income	40	74.1	14	25.9	
Total		390	86.3	62	13.7	

Bold values refer to significant results

^aPost-hoc test with Bonferroni adjustment results: Primary-Secondary $p=0.001$; Secondary-High school $p=0.209$; Primary-High school $p=1.000$

^bPost-hoc test with Bonferroni adjustment results: High-income with Middle-income $p=0.024$; Middle-income with Low-income $p=0.030$; High-income with Low-income $p=1.000$

school students. According to the present study, 76% of secondary school students had symptoms of depression which is much higher than previous studies in other countries such as those in Malaysia (33.2% of secondary school students reporting symptoms of mild depression [16]), Nepal (44.2% of high school students reporting symptoms of depression [17]) and Norway (less than 10% of young adolescents reporting depression [18]).

These diverse findings might be because of studies being conducted in different countries that are culturally diverse, and therefore might not follow the same school-based mental health programs. However, given the high prevalence of depression symptoms in the present study (65.3%), the most likely explanation is the difficulties that people in Afghanistan face due to the ongoing war conflict. When the prevalence rate of depressive symptoms in the present study (65.3%) are compared the findings of a prior survey in post-Taliban Afghanistan in 2004 in the Nangarhar province (38.5%) [19], there is a much higher prevalence of depression symptoms. According to the World Health Organization (WHO), the Taliban's return to Afghanistan was followed by failure of public services and increased food insecurity [29]. Previous studies suggest that factors such as economic recession [30] and unemployment [31] are associated with higher rates of depression.

The present study also found that depression was slightly more prevalent among female adolescents compared to male adolescents. A similar study from Malaysia reported higher prevalence of depression among female adolescents [20]. After puberty, depression is more common, especially among females, and is frequently linked to morbidity and a higher risk of suicide [32]. Previous research has shown that depression is associated with low self-esteem [33]. On the contrary, high levels of life satisfaction [34], happiness, and low levels of loneliness [35] are all associated with high levels of self-esteem.

Table 4 Logistic regression analysis for the association between depression and socio-demographics of study participants (N = 452)

Variable	AOR [95% CI]	p-value
Age of participants (Reference: 9–13-years)		
14–18-years	0.73 [0.34, 1.59]	0.43
Gender (Reference: Male)		
Female	0.77 [0.42, 1.41]	0.39
Class group (Reference: Primary)		
Secondary	0.65 [0.29, 1.45]	0.29
High school	1.62 [0.63, 4.19]	0.32
Economic status (Reference: High income)		
Middle-income	0.94 [0.52, 1.70]	0.84
Low-income	0.44 [0.18, 1.08]	0.07
Place of residency (Reference: Urban)		
Rural	0.31 [0.09, 1.12]	0.07
Father's education level (Reference: Illiterate)		
Primary school	0.87 [0.43, 1.77]	0.70
Secondary school	0.56 [0.29, 1.08]	0.08
High school	1.06 [0.54, 2.09]	0.87
University	0.48 [0.21, 1.07]	0.07
Mother's educational level (Reference: Illiterate)		
Primary school	1.45 [0.78, 2.70]	0.24
Secondary school	1.97 [1.11, 3.51]	0.02
High school	1.60 [0.74, 3.47]	0.24
University	1.27 [0.57, 2.81]	0.55

Bold value refers to significant results

Table 5 Logistic regression analysis for the association between self-esteem and socio-demographics of study participants (N = 452)

Variable	AOR [95% CI]	p-value
Age of the participants: base 9–13-years		
14–18-years	0.75 [0.30, 1.90]	0.55
Gender: base male		
Female	0.77 [0.33, 1.82]	0.56
Class group: base primary		
Secondary	0.56 [0.21, 1.49]	0.25
High school	2.76 [0.67, 11.34]	0.16
Economic status: base high-income		
Middle-income	0.76 [0.29, 1.97]	0.57
Low-income	0.32 [0.10, 0.99]	0.05
Place of residency: base Urban		
Rural	1.07 [0.28, 4.14]	0.92
Father's education level: base Illiterate		
Primary school	0.54 [0.22, 1.32]	0.18
Secondary school	0.57 [0.24, 1.38]	0.21
High school	4.23 [0.85, 20.95]	0.08
University	0.42 [0.15, 1.21]	0.11
Mother's educational level: base Illiterate		
Primary school	0.99 [0.44, 2.21]	0.97
Secondary school	2.21 [0.93, 5.27]	0.07
High school	2.02 [0.41, 9.92]	0.39
University	1.04 [0.35, 3.09]	0.94

Bold value refers to significant results

The findings of the present study found a significant association between class group and self-esteem among participants. High school students were significantly more likely to have poor self-esteem when compared to primary school students. No significant differences were found in self-esteem rates in secondary and high school students. The study showed that 94.5% of adolescents in high school reported poor self-esteem. Other studies have also reported that academic stress [21] are associated with (and can affect) self-esteem among adolescents [21, 22]. Since high school is a period of preparing for the university admission test in Afghanistan, academic pressure resulting from this could have led to high school students reporting lower self-esteem. Further research is needed to understand the factors impacting self-esteem among adolescents during their transition into high school.

The results of the present study indicated that father's educational level was another significant factor associated with self-esteem. Those adolescents whose fathers had high school education reported the lowest level of self-esteem, even when compared to illiterate fathers. This finding contradicts the findings of another study conducted in Turkey showing that an increase in parents' education level is associated with an increased self-esteem among adolescents [36]. Another study in China showed that adolescents whose fathers had more than nine years of education were 6.7% less likely to have low self-esteem [22]. Therefore, findings in the present study might have been due to factors other than education level such as parenting practices in communication with their children [37] and parenting style such as parental acceptance or rejection, or presence or absence of parents' warmth, affection, and support towards their children [38].

The present study found that presence of depression symptoms among adolescents was significantly associated with mothers' secondary school educational level. However, there was no significant association between adolescent depression and mothers' other educational levels. Although it has been reported that during childhood and adolescence, the educational level of parents can have a profound impact on a child's mental health, including the risk of depression [39], there is no obvious reason why there was an association between adolescent depression and mothers' secondary school level of education and not the others. The finding may have been a statistical artefact but further research examining any association between parental education and adolescent depression among this population is warranted.

The present study also found that adolescents from high-income families reported significantly lower self-esteem followed by those from middle-income, and then low-income families. This finding contrasts with the results of previous research. For instance, data from the UK Millennium Cohort Study found that coming from higher-income families was associated with an increased self-esteem among adolescents [40]. Moreover, according to a study in Japan, children who grow up in poverty were more likely to report lower self-esteem [41]. The difference in findings between the present study and previous studies might be due to factors such as physical and emotional unavailability of parents, which according to research in the United States, are factors that can be observed among both rich and poor family settings [42]. Further research is needed to thoroughly examine the factors that can mediate between parental income and adolescents' self-esteem.

4.1 Limitations and future directions

While interpreting the findings of the present study, several limitations should be taken into account. First, the study had a small sample which could have affected the outcome in terms of generalizability. Second, the data were collected from only one region of Afghanistan (Herat province) which also affect the findings in relation to generalizability. Some cities in Afghanistan are culturally diverse from others given that Afghanistan is a multiethnic country. Finally, the present study relied on self-report measures, which are vulnerable to biases such as social desirability and other methodological limitations. It is essential for future research to replicate the present study using larger and more representative samples.

Additionally, longitudinal studies are necessary to investigate the causal relationships between the variables examined in the present study. Further research is also warranted to comprehend the underlying reasons for the relationships between income, parental education, depression levels, and self-esteem among adolescents. This knowledge will aid in the development of preventive measures for enhancing mental well-being and bolstering self-esteem among adolescents in Afghanistan. Additionally, by implementing targeted interventions, raising awareness, and engaging the community, it may be possible to improve mental health outcomes and facilitate self-esteem among this vulnerable population. Healthcare authorities, policymakers, and other stakeholders can work together to implement these strategies and create a more mentally healthy and supportive environment for Afghan adolescents.

5 Conclusion

As well as being one of the few studies in Afghanistan, the present study is one of the very few to assess the association between class group, self-esteem, and depression symptoms. The study also found that father's education level and family income were significantly associated with self-esteem among adolescents. These data may be used by healthcare authorities and school administrators to raise awareness and implement strategies to encourage self-esteem among school-going adolescents. It is important for future research to explore other mental health concerns such as anxiety and suicidal ideation, as well as examine the therapeutic interventions and their accessibility for school-going adolescents.

Author contributions AN and AQM designed the study. MN collected the data. AN and BKP analyzed the data. AN, AQM, MA, MN, VR prepared the draft of the manuscript. AN and MDG critically reviewed, rewrote, edited, and finalized the manuscript. All authors reviewed the manuscript.

Data availability The datasets utilized and/or analyzed in the present study can be obtained from the corresponding author upon a reasonable request.

Declarations

Ethics approval and consent to participate The study received ethical approval from the Ethical Committee of the Afghanistan Center for Epidemiological Studies (reference number #21.071). Participants were provided with a comprehensive explanation of the study during the initial contact. Written or verbal consent was obtained from their parents. Participants were informed of their right to withdraw or choose not to participate in the study at any stage. All procedures adhered to pertinent ethical guidelines and regulations.

Consent for publication Not applicable.

Competing interests The authors assert that there are no conflicts of interest.

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