

Original Research Article

Perception of home environment and its effect on the mental health of school-going adolescent girls of Lucknow: a cross-sectional study

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ABSTRACT

Background: Home and family remains the primary social influence, an arena for fostering positive and negative influences in an adolescent's life. The environment at home occupies a significant position. Objectives were to assess the perception of the home environment, level of anxiety and depression and to study the relationship between the two among school-going adolescent girls.

Methods: School-going adolescent girls from two government schools of Lucknow were selected using a two-stage random sampling technique. A total of 200 participants were personally interviewed for their socio-demographic details, perception of the home environment and screened symptoms of anxiety and depression.

Results: Of all the school-going adolescent girls who screened positive for anxiety and depression symptoms, 7.4-27.1% had severe anxiety, while 0-8.9% had major depression; severe severity, across classes 9th to 12th. Those for whom it was not easy to discuss problems with parents (AOR=3.65, p=0.009) and who perceived unnecessary restrictions (AOR=2.83, p=0.048) were at a greater risk of developing anxiety. While those, for whom it was not easy to discuss problems with parents were at 2.83 times greater risk of developing depression (p=0.048).

Conclusions: The majority of school-going adolescent girls showed symptoms of anxiety or depression. Therefore, adolescents must be screened for poor mental health from time to time and those at high risk must be identified. Parents must be more involved and made aware of the issues leading to poor mental health of adolescents.

Keywords: Home environment, Adolescent girls, Anxiety, Depression

INTRODUCTION

The word adolescence has originated from the Latin word "adolescere" meaning "to grow into maturity". Adolescence is a transitional phase of growth and development between childhood and adulthood.¹ It is this phase of adolescence when a person develops life skills such as self-awareness, critical thinking, decision making, effective communication, coping with stress, empathy, interpersonal relationship and coping with emotion.

The world health organization (WHO) defines an adolescent as any person between ages 10 and 19 years. One in every five humans on this planet is an adolescent.² In the year 1950, adolescents amounted to 4.9 million, representing 20.0 percent of the whole population. By the year 2050, it is projected that adolescents will be 14.0 percent of the whole population, but their absolute number will be 1.3 billion. Their share in the total population might decrease, but their number shall increase exponentially through 2050.³ India is the country

with the largest share of the world's adolescent population, i.e., 20.5% amounting to around 243 million.⁴ Adolescents in India account for 1/5th of total population.¹

For an adolescent, home and family remain the primary social influence, an arena for fostering both positive and negative influence.⁵ The environment at home occupies a significant position in the life of an adolescent. Relationship with parents is crucial and has a critical influence, both good and bad, on the mental health of adolescents.⁶ Effective communication between parents and adolescents fosters closer ties.⁵ Families with single parents have a significant association with the adolescent's poor mental health.⁷ Chronic illnesses in the family may also impact the mental health of an adolescent. Family relationships must accommodate adolescents' social relationships, decision-making, autonomy and identity exploration. At the same time, parents must continue to supervise, protect, communicate with, and provide guidance to the adolescents.⁵

According to WHO, it is estimated that 10-20% of adolescents experience mental health conditions, but remain under-diagnosed and undertreated, globally.² Anxiety is an emotion, characterized by tension, worried thoughts and physical changes like increased blood pressure.⁸ Depression is characterized by persistent sadness and a lack of interest or pleasure in previously rewarding or enjoyable activities.⁹ Both anxiety and depression, in adolescents, significantly impact impairment of social and academic functioning and produce a substantial distress for both adolescents and family. If not treated, these disorders tend to persist, and increase the risk for medical illnesses, impaired well-being, and various psychiatric disorders.¹⁰

A study conducted among school-going adolescents in New Delhi, in 2015, showed that 34.3% of adolescents had anxiety, which was higher among girls.⁴ Another study conducted among urban adolescents of private schools in Chennai, in 2010, showed that 4.3 percent of adolescents were severely depressed respectively, with female preponderance.¹¹ A study conducted among adolescents of Sweden, in 2005, observed that adolescent girls showed poorer psychosocial health in the depressive domain than adolescent boys.¹²

Not many studies have been conducted in India regarding impact of perception of home environment on mental health of adolescents. Work aims to study adolescent's perception of home environment that impacts their mental health explicitly, triggering anxiety and depression.

METHODS

This study was a descriptive cross-sectional study, conducted in urban government secondary schools, located in the study district of Lucknow, which had classes from 9th to 12th. It conducted from November 2019 to October 2020.

Individual school-going adolescent girls, of classes 9th, 10th, 11th and 12th, who were enrolled in urban government secondary schools of Lucknow district during the academic year 2019-2020, participated in the study. Those who gave assent for the study were included. While uncooperative school-going adolescent girls and those suffering from any severe illness, were excluded from the study.

Considering the drop-out rate as 10% prevalence as 10.8%, through literature review, and margin of error as 5.0 percent, the sample size was calculated to be 197, using standard Cochran's formula, at a 95.0% confidence interval.¹³ The calculated sample size rounded off to 200.

A two-stage random sampling technique was used to obtain the requisite number of participants (Figure 1). In the first stage, a comprehensive list of all government, senior secondary schools in Lucknow city were charted after reference from district inspector of schools, Lucknow. Simple random sampling was used to select two such schools in Lucknow, namely Rajkiya Balika inter college Shahmina road and government girls inter college Indira Nagar. The selected schools were approached for the total strength of the classes from 9th-12th and for the permission to conduct the study in that school. In case permission was not granted, the procedure of selection of school was repeated. In the second stage, from both the schools, the total strength of each class was obtained. A sample of 100 adolescent girls from either school was equally divided into 25 participants among the four classes i.e., 9th, 10th, 11th and 12th. These 25 participants were selected, from the comprehensive list obtained for each class. Sampling interval for each class was calculated and study participants were selected using systematic random sampling.

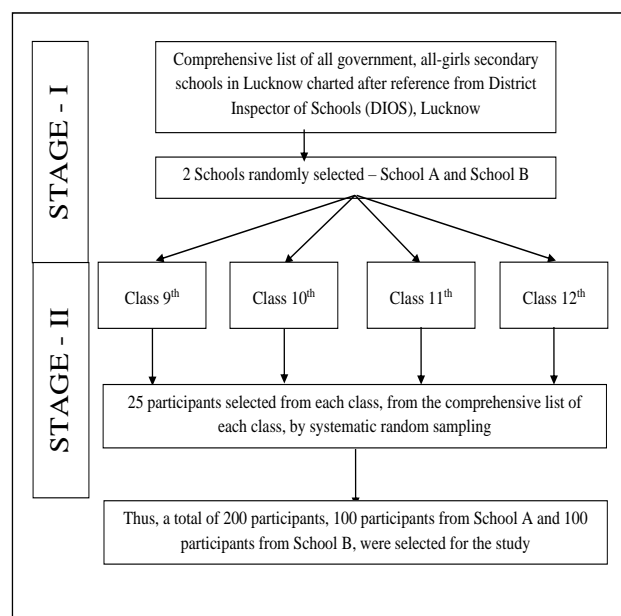


Figure 1: Two-stage random sampling technique employed to obtain requisite number of participants.

Institutional ethical clearance was obtained from King George's Medical University before conducting the study. Due permissions were taken from the district inspector of schools, Lucknow. The principals of both schools were explained the nature and purpose of the study and their prior permission was taken. Verbal consent was taken from class teachers of all the classes. Selected students were explained the nature and purpose of the study in the language they understood. Their assent to participate in the study was sought. The participants were assured of total confidentiality. In case a student refused to participate in the study, the next enrolled student of that class was asked for her permission to participate in the study. The participants were then interviewed personally, in a quiet space, in the school premises, using a pre-designed, pre-tested as well as semi-structured questionnaire.

The questionnaire comprised of three sections. Section one dealt with questions about socio-demographic variables. The second section comprised of questions about the perception of the home environment by the school-going adolescent girls. Questions of this section were inspired from the H.E.A.D.S.S.-A psychosocial interview for adolescents. H.E.A.D.S.S. is an acronym for the topics covered in the interview, namely, home, education, activities, drugs, suicidality and sex. The questions were slightly modified keeping in view the needs and acceptability of the population of this study. Section three consisted of tools to screen for symptoms of anxiety and depression. Generalized anxiety disorder 7-item (GAD-7)¹⁴ scale and patient health questionnaire 9-item (PHQ-9) scale, were used to screen for anxiety and depression symptoms, respectively.¹⁵

Data were analyzed using SPSS, version 23.0. A Chi-square test for the independent sample was used to show the relationship between dependent and independent variables. Multi-logistic regression was employed to determine the predictors for anxiety and depression among school-going adolescent girls. The level of significance was set at 0.05.

RESULTS

Majority of the school-going adolescent girls were in the stage of early adolescence (65.5%), resided in urban areas (95.0%), Hindu by religion (65.5%), belonged to other backward classes (50.5%), living with parents (93.0%) in a nuclear family (82.5%) and were from either lower middle class (41.5%) or lower class (40.5%) (Table 1).

On enquiring about the perception of home environment by the school-going adolescent girls, 74.5% responded that they had a generally pleasant environment, parents of 89.0 percent were married and living together, 97.5% got along well with parents, 76.5% found it easy to discuss problems with parents, 92% got emotional from parents, 60.5% did not perceive any unnecessary restrictions on

them and 30.5% had someone in the family suffering from a chronic disease (Figure 2).

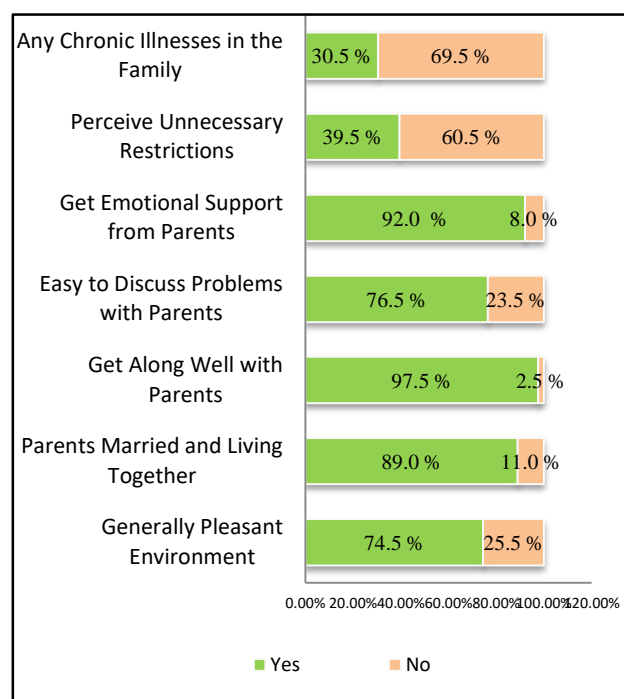


Figure 2: School-going adolescent girls by their perception about their home environment.

Of all the school-going adolescent girls who screened positive for anxiety and depression symptoms, 18.1% had severe anxiety, while 5% had major depression; severe severity. The majority of the school-going adolescent girls with severe anxiety were studying in 12th standard. Most of the school-going adolescent girls with major depression, were from either of the board classes (i.e., 10th and 12th class) (Table 2).

Presence of symptoms of anxiety was found to be significantly associated with generally pleasant environment ($p=0.026$), easy to discuss problems with parents ($p<0.001$), perceive unnecessary restrictions ($p<0.001$) and any chronic illnesses in the family ($p=0.003$). Presence of symptoms of depression was significantly associated with generally pleasant environment ($p=0.013$), easy to discuss problems with parents ($p=0.004$) and perceive unnecessary restrictions ($p=0.039$) (Table 3).

Statistically significant variables in univariate regression were used for the multivariate regression model to determine the predictors for anxiety and depression. School-going adolescent girls for whom it was not easy to discuss problems with parents (AOR=3.65, $p=0.009$) and who perceived unnecessary restrictions (AOR=2.83, $p=0.048$) were at a greater risk of developing anxiety. School-going adolescent girls for whom it was not easy to discuss problems with parents were at 2.83 times greater risk of developing depression ($p=0.048$) (Table 4).

Table 1: School-going adolescent girls by their socio-demographic characteristics.

Socio-demographic characteristics	Classes				Total, n=200 (%)
	9 th , n=50 (%)	10 th , n=50 (%)	11 th , n=50 (%)	12 th , n=50 (%)	
Stage of adolescence (Years)					
Early (13-14)	27 (54.0)	19 (38.0)	2 (4.0)	0 (0.0)	48 (24.0)
Middle (15-17)	23 (46.0)	29 (58.0)	46 (92.0)	33 (66.0)	131 (65.5)
Late (18-19)	0 (0.0)	2 (4.0)	2 (4.0)	17 (34.0)	21 (10.5)
Residence					
Urban	50 (100.0)	47 (94.0)	44 (88.0)	49 (98.0)	190 (95.0)
Rural	0 (0.0)	3 (6.0)	6 (12.0)	1 (2.0)	10 (5.0)
Religion					
Hindu	24 (48.0)	27 (54.0)	41 (82.0)	39 (78.0)	131 (65.5)
Muslim	26 (52.0)	23 (46.0)	9 (18.0)	11 (22.0)	69 (34.5)
Social class					
General	22 (44.0)	14 (28.0)	13 (26.0)	16 (32.0)	65 (32.5)
OBC	23 (46.0)	27 (54.0)	27 (54.0)	24 (48.0)	101 (50.5)
SC/ ST	5 (10.0)	9 (18.0)	10 (20.0)	10 (20.0)	34 (17.0)
Current place of residence					
Living with parents	47 (94.0)	47 (94.0)	46 (92.0)	46 (92.0)	186 (93.0)
Not living with parents	3 (6.0)	3 (6.0)	4 (8.0)	4 (8.0)	14 (7.0)
Type of family					
Joint family	8 (16.0)	4 (8.0)	15 (30.0)	8 (16.0)	35 (17.5)
Nuclear family	42 (84.0)	46 (92.0)	35 (70.0)	42 (84.0)	165 (82.5)
Socio-economic status*					
Upper/Upper Middle/Middle class	8 (16.0)	7 (14.0)	9 (18.0)	12 (24.0)	36 (18.0)
Lower middle class	18 (36.0)	29 (58.0)	21 (42.0)	15 (30.0)	83 (41.5)
Lower class	24 (48.0)	14 (28.0)	20 (40.0)	23 (46.0)	81 (40.5)

*BG Prasad scale (2020)

Table 2: Level of anxiety and depression among school-going adolescent girls.

Variables	Classes				Total, n=127 (%)
	9 th , n=27 (%)	10 th , n=36 (%)	11 th , n=27 (%)	12 th , n=37 (%)	
Level of anxiety					
Mild anxiety	13 (20.3) [48.2]	24 (37.5) [66.6]	12 (18.8) [44.4]	15 (23.4) [40.5]	64 [50.4]
Moderate anxiety	12 (30.0) [44.4]	8 (20.0) [22.2]	8 (20.0) [29.6]	12 (30.0) [32.4]	40 [31.5]
Severe anxiety	2 (8.7) [7.4]	4 (17.4) [11.2]	7 (30.4) [26.0]	10 (43.5) [27.1]	23 [18.1]
Level of depression					
Minimal depressive symptoms	21 (27.6) [58.3]	17 (22.4) [44.7]	20 (26.3) [58.8]	18 (23.7) [47.3]	76 [52.0]
Major depression; mild severity	13 (32.5) [36.1]	11 (27.5) [28.9]	6 (15.0) [17.6]	10 (25.0) [26.3]	40 [27.3]
Major depression; moderate severity	2 (8.7) [5.6]	8 (34.8) [21.0]	5 (21.7) [14.7]	8 (34.8) [21.0]	23 [15.7]
Major depression; severe severity	0 (0.0) [0.0]	2 (28.6) [5.4]	3 (42.9) [8.9]	2 (28.6) [5.4]	7 [5.0]

(%)= Row percentage, [%]=Column percentage.

Table 3: Perception of home environment with anxiety and depression among school.

Perception of home environment	Symptoms of anxiety present, n=127 (%)	P value	Symptoms of depression present, n=146 (%)	P value
Generally pleasant environment				
Yes	88 (69.3)	0.026	102 (69.8)	0.013
No	39 (30.7)		44 (30.2)	
Parents married and living together				
Yes	110 (86.6)	0.155	129 (88.3)	0.632
No	17(13.4)		17 (11.7)	

Continued.

Perception of home environment	Symptoms of anxiety present, n=127 (%)	P value	Symptoms of depression present, n=146 (%)	P value
Get along well with parents				
Yes	123 (96.9)	0.417	142 (97.3)	0.713
No	4 (3.1)		4 (2.7)	
Easy to discuss problems with parents				
Yes	86 (67.7)	<0.001	104 (71.2)	0.004
No	41 (32.3)		42 (28.8)	
Get emotional support from parents				
Yes	115 (90.5)	0.319	134 (91.8)	0.850
No	12 (9.5)		12 (8.2)	
Perceive unnecessary restrictions				
Yes	62 (48.9)	<0.001	64 (43.8)	0.039
No	65 (51.1)		82 (56.2)	
Any chronic illnesses in the family				
Yes	48 (37.8)	0.003	49 (33.6)	0.122
No	79 (62.2)		97 (66.4)	

Table 4: Predictors for anxiety and depression among school-going adolescent girls.

Variables	Predictor variables for anxiety			Predictor variables for depression		
	AOR	95% CI	P value	AOR	95% CI	P value
Generally pleasant environment						
No	1.34	0.59-3.01	0.475	2.08	0.83-5.17	0.114
Yes	Reference					
Easy to discuss problems with parents						
No	3.65	1.38-9.6	0.009	2.83	1.01-7.93	0.048
Yes	Reference					
Perceive unnecessary restrictions						
Yes	2.40	1.22-4.72	0.011	1.66	0.82-3.35	0.157
No	Reference					
Any chronic illnesses in the family						
Yes	1.97	0.93-4.16	0.073	-	-	-
No	Reference					

*AOR=Adjusted odd's ratio

DISCUSSION

The present study was conducted on school-going adolescent girls of Lucknow district to assess home environment factors and their relationship with anxiety and depression.

In the present study, out of the total school-going adolescent girls who screened positive for anxiety, 7.4-27.1% had severe anxiety, across classes 9th to 12th. Varied results were observed in other studies and this incongruency was observed, as the tools used for assessment of anxiety in these studies were diagnostic, while, the one used in the present study was a screening tool. Thus, the diagnostic tool should be applied to the school-going adolescent girls in whom anxiety was present on screening.^{4,13} In the present study, out of those who had mild anxiety, most of the school-going adolescent girls (37.5%) were studying in class 10th, followed by 23.4 percent studying in class 12th, which was in accordance with the findings of another study.¹⁰ Both these classes are termed 'board classes' as they take examinations conducted by certified boards in India.

These classes define the shape of their career in the future and hence a higher percentage of anxiety among adolescents of these classes is conspicuous.

In the present study, out of all the school-going adolescent girls who screened positive for depression, 0.0-8.9% had major depression of severe severity, across classes 9th to 12th. Similar findings were observed in a few studies.^{11,16} The results of the present study differed from a few other studies as the assessment tools in these studies were diagnostic, while, the one used in the present study was a screening one.^{4,17} In the present study, out of those with major depression of moderate severity, an equal percentage of school-going adolescent girls (34.8%) were studying in classes 10th and 12th which was in accordance with the findings of another study.¹⁰ The results again highlight the importance of 'board classes'.

A cordial environment at home is one of the prerequisites for the good mental health of adolescents. In the present study, out of the total school-going adolescent girls, 74.5% responded that their home environment was generally pleasant. This perception significantly

associated with anxiety and depression ($p=0.026$ and $p=0.013$), which is following other studies.^{18,19} The presence of any chronic illness in the family was found to be significantly ($p=0.003$) associated with the presence of anxiety and it was in accordance with another study²⁰. In the present study, ease to discuss problems with parents and perceiving unnecessary restrictions were both found to be significantly associated with anxiety ($p<0.001$) as well as depression ($p=0.004$), which was per the findings of another study.²¹ Thus, it is crucial for caregivers to monitor the unmet needs of adolescents. The present study's logistic regression suggests home environment determinants like ease to discuss problems with parents and perceiving unnecessary restrictions are primary predictors for anxiety and depression among adolescents, while, the general environment at home and chronic illnesses are secondary predictors. This further strengthens the inference that parents need to focus on adolescents as their home is where they tend to spend time the most.

Strengths

A two-stage random sampling technique and logistic regression was applied to overcome confounders in the study.

Limitations

Inclusion of private schools, schools in rural areas, adolescent boys and a greater sample size could have given a more wholesome picture.

CONCLUSION

In the present study it was observed that the majority of school-going adolescent girls showed symptoms of anxiety or depression. Therefore, adolescents must be screened for poor mental health from time to time and those at high risk must be identified. Counseling sessions by psychologists or psychiatrists may be conducted in the schools on a regular basis. The home environment plays the most crucial role in an adolescent's life and the interpersonal relationship between parents and adolescents has a significant influence on the school-going adolescent girls' mental health. Thus, the parents must be more involved and made aware of the issues leading to poor mental health among adolescents. Accordingly, the parents should be encouraged to learn new ways to handle and guide the adolescents. Finally, further such studies are worthy, to generate quality evidence for cost-effective, preventive, promotive, curative and rehabilitative strategies for mental health disorders among adolescents.

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Conflict of interest: None declared

Ethical approval: The study was approved by the Institutional Ethics Committee

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