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Assessment of the level of resilience among secondary school students of Pondicherry, India

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Abstract
We always encounter some misfortune throughout our lives. Resilience is the ability to respond well to challenging circumstances. A cross-sectional study was conducted to assess the level of resilience among 257 secondary school students using the Bharathiar University Resilience Scale. The average age of the participant was 16.03±0.74 about gender, with males higher than females. The median resilience assessed among the students was 101, with an IQR of 18.50. This study showed that 128 (49.8%) students had low resilience, and 129 (50.2) had high resilience, further it was revealed that the selected socio-demographic variables were not having a significant association (P<0.05) with the level of resilience. Students with low resilience can be educated about problem-solving skills and coping strategies to promote an optimum level of successful adjustment in life.

Keywords: resilience, secondary school students, bharathiar university resilience scale

Introduction

Worldwide, children and adolescents' mental health has been identified as a significant issue in healthcare [1], because 10 to 20 % of children and adolescents report mental health problems [2]. A recent study also showed that 7.3% of adolescents in India (13–17 years old) have a mental problem [3]. It has been demonstrated that mental health issues in children and adolescents are associated with higher rates of involvement in risk-taking behaviors, poor educational success, self-harm, and suicide [1, 3], with the effects of such issues frequently enduring into adulthood. [4, 5]

The school environment, friendships, the desire for increased independence, physical changes, anxiety over academic performance or job choice, conflicts with families or the community, and more can all lead to stress during this period. In this period of significant change and stress, resilience becomes more crucial due to the growing roles and responsibilities, potentially combined with complicated settings, including poverty, health, and family breakup that may impact young adult outcomes [6].

The concentration of mental health research has shifted from risk and psychopathology to promoting positive outcomes like resilience in recent years [7]. Therefore, preventing mental health issues in youngsters and adolescents is vital in encouraging good results in older adolescents' life.

Resilience is a dynamic process of interaction between risk and protective factors [8]. It means "bouncing back" from difficult experiences. More resilient people are better able to deal with stress or difficulty. They are more capable of returning or coping with stressful events [9, 10].

When faced with major risks to one's life or function, resilience refers to the processes or patterns of adaptive growth [11].

Resiliency is best viewed as a lifelong process of learning how to better cope with stressors. A person is resilient when their strengths overcome their weaknesses. Therefore, a shift of balance from defects to powers is imperative. As protective and risk factors for resilience are mostly culture-specific, we need to ascertain the determinates of strength to overcome for Indian adolescents as well [12].

The ability to continue functioning at an optimum level after enduring stressful experiences is an essential tool for enhanced outcomes and well-being. Resilience among students is a protective factor associated with fewer mental health problems and successful adjustment to life. Higher levels of resilience have been linked to lower levels of psychological distress among students [13].

Not every young person who faces difficulty or adversity suffers from poor mental health. One explanation for why some people can sustain good mental health during challenging situations comes from the idea of resilience [14].

Schools offer a convenient location for interventions to lower mental health issues' risk and increase adolescents' resilience [15].

As previously indicated, research on fostering resilience is picking up steam in India. However, most of this research contains children or teenagers in harmful conditions. Teenagers who are in school are the subjects of very few studies.

To our knowledge no research on the reported resilience among school-going adolescents in Pondicherry. Given their enormous significance, it is crucial to understand them while creating resilience-building strategies. Given this context, the current study aimed to define resilience as a protected characteristic in school-going adolescents in Pondicherry, South India, where school mental health treatments are widely accepted and put into practice. This research would create a suitable resilience-building curriculum for Pondicherry's school-age boys and girls.

The objectives of this study were to identify the level of resilience in adolescents enrolled in secondary education in Pondicherry, India, and identify socio-demographic traits associated with resilience of secondary school students.

Materials and method

A cross sectional survey design was conducted between Oct to Dec 2018.Two secondary schools were chosen by simple random sampling from a list of potential schools provided by the Directorate of School Education, Government of Pondicherry, India. The sample size is calculated using an expected population of pupils with resilience levels between moderate and above 0.50 at a significance level of 5% and a relative precision of 15%. This study includes two hundred fifty-seven secondary school students (grades 11 and 12) from chosen schools. The estimated sample size was 171, and it was further inflated with a design effect of 1.5 to account for the complex sampling technique. Those who were older than 19 or younger than 13 years were excluded from the study.

The Bharathiar University Resilience Scale (BURS) was used to assess the level of resilience. It is a 30 items 5-point Likert scale. The scale is used to evaluate seven aspects of resilience, including the time it takes to return to normal, how one responds to risk factors (in particular, living in a disadvantaged environment), how one perceives the impact of past adverse events, how one defines problems, how well one thinks they will be handled in the future, and how to open one is to new experiences and flexibility. The scale's thirty items all form personal declarations, such as "I don't attempt any project where I have previously failed" and "I can recover from a bad mood after experiencing any tragic event fast and easily." The scale's concurrent validity is sufficient. The scale and Friborg had a strong positive association [16].

The participant was instructed to score how much each item accurately characterizes them on a five-point Likert scale. Answer option "5" is the most appropriate, while response option "1" indicates that the information is inappropriate for the participant. The participant's responses to each of the scale's thirty statements are added to create a single score that reflects the subject's resilience level. The grading system allows for a maximum score of 150 and a minimum score of 30 for each topic.

The total BURS score served as the basis for defining the level of resilience. Adolescents who scored more than one standard deviation (SD) above the median level were classified as having high resilience. Adolescents who scored between one standard deviation (SD) above and below the median (i.e., z-score 1 to 1) were classified as having moderate resilience. Those with low resilience were those with z-scores more than 1, or less than 1 SD below the median. A dichotomous variable of low versus moderate/high resilience was constructed to study socio-demographic characteristics related to level of resilience. Social and demographic aspects the participant's age, gender, type of family, residency, parents' living situation, and parents' education and occupation were among the background elements that were measured.

The study was approved by the Jawaharlal Institute of medical education and research Institute Ethics Committee (JIP/IEC/2019/014). Principal investigator directly approached randomly selected schools principals and got approved to contact study. At each randomly chosen school, the principal was consulted regarding permission to conduct research with students, and all of the principals gave their approval. Student participation required parental consent, which was requested in a letter sent home and picked up after two days. While a researcher was present and during regular class hours, students answered the questionnaire. Students were also aware that they could decline participation in the study, stop filling out the questionnaire at any moment, and skip any questions they felt uncomfortable answering. They were reminded that they were not required to write their names on the form, that their replies would be kept private, and that no one would be able to find out who they were. The researcher emphasized no right or incorrect answers; the study was about their experiences. The survey was distributed to students who indicated their willingness to participate.

Data processing and analysis

The categorical variables, such as standard of study, gender, number of friends, parental status, and hobbies, were expressed as frequency and percentage. The continuous variables such as age, income, and level of resilience were described as mean with standard deviation or median with range. The association between level of resilience and socio-demographic variables were performed by Chi-Square Tests. All statistical findings with a 5% level of significance and a p-value of 0.05 or lower will be regarded as significant.

Results

Participant

The study participants were 257 secondary students in grades 11–12 attending one of two private schools. The demographic characteristics of the participants are reported in Table 1. Most of the participants, (76.6%) were men, and all were between the ages of 15 to 18 (M=16, SD=0.74). Only a tiny percentage of participants studying for the XI standard (0.8%) and the bulk (61.9%) reported remaining at home. According to the friendship survey, most people (77%) reported having more than five close friends. Most interviewees (93.4%) indicated that their parents were living together. Table 1

Table 1: Distribution of demographic variables of secondary school students of Pondicherry

(N - 257)

Demographic Variables	Frequency (N)	Percentage (%)
Age (in years)		
15	62	24.1
16	129	50.2
17	61	23.7
18	5	1.9
Gender		
Male	197	76.7
Female	60	23.3
Education status		
XI Standard	98	38.1
XII Standard	159	61.9

Place of stay		
Hostel	2	0.8
Home	255	99.2
Number of friends		
1-4 Friends	59	23.0
≥ 5 Friends	198	77
Family monthly income in rupees		
0-5000	15	6
5001-10000	99	38
10001-15000	38	15
15001-20000	42	16
20001-25000	18	7
>25000	50	18
Parental status		
Living together	240	93.4
Separated	12	4.7
Divorced	1	0.4
Other/ single parent	4	1.6

Adolescent resilience

The median resilience score was 101.0 and the mean was 102.57, with a standard deviation of 13.87.

The participant's range on the Bharathiar University resilience measures is 73–141. Tab 2.

Table 2: Mean, median standard deviation and range of level of resilience among secondary school students of Pondicherry.

(N=257)

Variable	Mean	Standard deviation	Median	Range
Resilience	102.5720	±13.87175	101.0000	Min – 73 Max – 141

Participants were divided into two groups based on their levels of resilience: low (<1 SD below the median, 49.8%) and high (>1 SD above the median, 50.2%). Tab: 3

Table 3: Level of resilience among secondary school students of Pondicherry

(N=257)

Level of Resilience	Frequency (N)	Percentage (%)
High resilience	129	50.2%
Low Resilience	128	49.8%

Association of socio-demographic variable with level of resilience

The level of resilience was not associated with selected socio-demographic characteristics of the secondary school students (significant if P value (P < 0.05)), such as age, gender, number of friends, and parental status, showed in table: 4

Table 4: Association between the levels of resilience and the socio demographic variable of Secondary school students of Pondicherry

(N=257)

Si.no	Demographic variables	Level of resilience among secondary school students					
		Low resilience		High resilience		X^2	p-value
		N	%	N	%		
1	Age (in years)						
	15 years	29	46.8%	33	53.2%	0.687	0.889
	16 years	65	50.4%	64	49.6%		
	17 years	32	52.5%	29	47.5%		
	18 years	2	40.0%	3	60.0%		
2	Gender						
	Male	104	52.8%	93	47.2%	3.010	0.083
	Female	24	40.0%	36	60.0%		
3	Standard of study						
	XI	53	54.1%	45	45.9%	1.159	0.282
	XII	75	47.2%	84	52.8%		
4	Number of friends						
	< 5 Friends	33	55.9%	26	44.1%	1.150	0.284
	≥ 5 Friends	95	48%	103	53%		
5	Family income in rupees						
	0-5000	8	53.3%	7	46.7%	4.781	0.442
	5000-10000	48	48.5%	51	51.5%		
	10000-15000	22	57.9%	16	42.1%		
	15000-20000	18	42.9%	24	57.1%		
	20000-25000	7	38.9%	11	61.1%		
	>25000	30	60.0%	20	40.0%		
6	Parental status						
	Living together	118	49.2%	122	50.8%	3.222	0.315
	Separated	8	66.7%	4	33.3%		
	Divorced	1	100.0%	0	0.0%		
	Others	1	25.0%	3	75.0%		

*Significant if P value (P < 0.05)

Regression analysis for predicting the level of resilience

Linear regression revealed that selected demographic variables are not significant predictors of resilience. (R^2 =0.040) because there was a lack of variation due to the subjects aged between 15to 18 years, and the majority (76%) were male. Tab: 5

Table 5: Regression analysis for predicting the level of resilience

	Predictors	SE (Beta)	t – values	P – value	R^2
Resilience	Age	1.481(-.102)	5.441	.201	0.040
	Gender	2.083(.145)	-1.283	.023	
	Family Income	.000(-.069)	2.285	.269	
	Std	2.222(.135)	-1.107	.085	
	Par status	1.956(-.028)	1.730	.654	

Discussion

In this study, the mean age of participants was 16 years and ranged between 15-18 years. The mean age of the group of 16 years indicate the sample being representative of adolescents belonging to the mid-adolescence phase, similarly, a study by Mwangi, C N *et al* reported that the average age of participants during the resilience assessment among secondary school student was 17 years [17].

The parents' income suggested that the sample was representative of adolescents from the middle class in Pondicherry**.** The median resilience score was 101.0 and the mean was 102.57, with a standard deviation of 13.87. Participants similarly, Padmashri S Rao *et al*. also reported the mean and standard deviation of the resilience of the male and female students, respectively (Mean = 101.46 Var= 267.25: Mean = 97.75, Var= 275.11) when using BURS [18].

We discovered low resilience in about half of the study participants in this first study to look at resilience in a group of south Indian union tertiary secondary school students. While reporting lower overall resilience ratings, girls did. This can be a result of the socio-cultural backdrop in developing countries like India, where gender has a bigger impact on the roles, priorities, chances, and resources available [14, 19].

However, in a study of migratory Indian youths living in America, girls exhibited greater resilience under challenging life circumstances, demonstrating higher competence and enculturation ratings [20].

Girls report higher levels of resilience in socio-cultural situations with greater gender fairness, more opportunities for girls and women, and more flexibility in roles and responsibilities. Building supportive environments and policies and giving girls and women equal opportunity and respect could have a favorable effect across the life course.

Our investigation found no difference in the level of resilience among secondary school children between the two selected schools. At the same time, in a study done in Karnataka, India, teenagers who attended private vs. public schools reported having significantly different levels of resilience [21].

In the study, teenagers in the poor resilience category were likelier to have working mothers and divorced or split homes. In the low resilience category, there were more adolescents with divorced or separated parents than in the high/moderate resilience category. The family has been mentioned as a protective factor in the notion offered by the Resilience model. However, the results of the current study indicated that parental status, such as divorce, separation, cohabitation, or other, had no relationship with the level of resilience among secondary school students [22, 23].

Numerous elements influence resilience; some are unquestionably outside of the schools' area of influence, while others can be improved in the context of the educational institution. Schools should create proactive initiatives to enhance all students' resilience, especially at-risk ones. Many strategies—creating a supportive environment for students, expressing high expectations, motivating students, and giving them chances to participate meaningfully—are reasonably priced. Trust, respect, and support may all be promoted in schools. Schools can provide friendly environments with clear rules for social and academic conduct.

Strength and limitation

This study describes resilience in south Indian adolescents using a multi-domain, standard measure to highlight socio-demographic factors associated with risk or resilience. However, study limitations need to be taken into consideration. The study's findings might not apply to all Indian adolescents because it was restricted to one district in the south of the country and did not take into account the diversity of adolescents in India who have diverse socio-demographic make ups, including ethnicity. Furthermore, given that the questionnaire was distributed in a classroom context, participant replies could have been influenced by or affected by peer effects.

Conclusion

This study shows that more than half of the secondary school students have low resilience and various socio-demographic characteristics not linked to the level of resilience, with consequences for adolescents in Pondicherry and other similar regions of India. While some traits, such as the place of study, were changeable, it may be appropriate to include additional elements, such as birth order or use of leasable time. Nonetheless, increased understanding will increase chances for help. It is crucial for families, health professionals, and schools to be aware of the elements that are linked to risk or resilience and to know how and when to intervene to support resilient outcomes for Indian adolescents because all adolescents will face adversity at some point in their lives.

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Disclosure

The authors report no conflicts of interest in this work.

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