

Study of Resilience in Female College Adolescents and Young Adults: Tough Times Don't Last, Tough People Do

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ABSTRACT

This study is part of a multicentric youth project conducted by Association of Adolescent and Child Care in India (AACCI). We examined resilience and its association with demographic variables like age, sibling status, academic course, engagement in extracurricular activities, perceived internet/social media usage and dependence, substance use and perception of control over one's life. We used a cross-sectional design with a sample of 17- to 21-year-old female college students from Delhi. We found that students who perceived control over their lives had high total scores on resilience measures. Students who used social media had higher total and relational resilience than those who did not use social media. Students who did not use social media had higher individual resilience. Those who did not see themselves as dependent on social media had higher total resilience and relational resilience. Those who did not see themselves as dependent on the internet had higher relational resilience. There were no significant relationships between resilience and the other demographic variables. Results from the current study shed light on factors contributing to resilience among adolescents. We can use these findings to develop training programs that promote adolescent well-being.

Keywords: Resilience, youth mental health, social media, social media dependence, internet dependence, perceived control

Resilience is a multidimensional construct that has been studied from varied perspectives. While some have described it as the ability to obtain good outcomes despite threats and adversity,¹ others see it as the ability to cope with stress, change, misfortune and adversity.^{2,3} Ungar^{4,5} described resilience from an ecological and culturally sensitive perspective – an individual's capacity to navigate their way to available resources that can sustain their well-being in case of exposure to adversity. He also emphasized on the individual and collective capacities to negotiate for resources of well-being to be provided in culturally meaningful ways.

The purpose of this study is to better understand resilience among a sample of Indian adolescents. Recognizing factors associated with resilience can help us build better resources for youth in the form of intervention programs and tools. This can contribute to improved overall well-being. While it can be beneficial to study resilience across all life stages, the current study aims to look at it in the lives of young people for several reasons. Adolescence is a period of rapid change and complexity. Adolescents are particularly vulnerable to stress, due to the functional and structural brain changes that occur during this period.⁶ Additionally, although most mental disorders are detected later in life, they begin during youth. Due to this, mental disorders add to the disease burden in young people.⁷

AIMS AND OBJECTIVES

In 2017, the Association of Adolescent and Child Care in India (AACCI) initiated the project on “*Building Resilience*” among school and college students in India. As part of this project, AACCI has been conducting multicentric studies on youth behavior using standardized psychometric tools to study: a) resilience and b) some components that help to

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build resilience, such as self-esteem, self-regulation, emotional intelligence and social self-efficacy. Based on the findings from the surveys, AACCI continues to customize various intervention programs in addition to the Life Skill education workshops that are regularly conducted in various schools and colleges for the holistic wellness of children and adolescents.

The current study aimed to determine the scores of the Resilience Scale in 354 college girls from a women's college in Delhi and draw age-based comparisons (Group I: 17-19 years and Group II: 20-21 years) for the same. AACCI has published a study conducted with females studying in an engineering college in Pune⁸ to explore the relationships between individual scale scores and sociodemographic variables, including age, sibling status and academic courses (Bachelor of Arts [BA], Bachelor of Commerce [BCom] and Bachelor of Science [BSc]), engagement in extracurricular activities, perceived internet and social usage and media dependence, substance use and perception of control over one's life.

METHODOLOGY

Sample Characteristics

Participants included 354 women ($n = 354$; age range: 17-22 years, $M_{age} = 18.63$ years, standard deviation [SD] = 1.06 years) pursuing BA, BCom or BSc from an all-women's college in North India.

Sample Selection

Participants were selected via convenience sampling. AACCI conducted an awareness program at this all-women's college in North India (pursuing BA, BCom or BSc courses) and requested students to participate in their survey. Participants filled out the online survey questionnaire under the supervision of their college professor and a team of student volunteers trained by AACCI.

Exclusion and Inclusion Criteria

There were no exclusion criteria, and all the students who volunteered to participate in the survey were included in the study.

Study Design

A cross-sectional study was conducted using convenience sampling.

Study Duration

The study spanned 3 months from July to September 2018.

Procedures

As part of its multicentric studies on youth behavior in India, AACCI designed and administered a survey questionnaire, which focused on collecting socio-demographic data in addition to the following five psychometric tools to gauge the participants' stratum of resilience, self-efficacy, emotional intelligence, self-regulation and self-esteem, respectively: 1) Child and Youth Resilience Measure-28 (CYRM-28^{9,10}), 2) Social Self-efficacy Scale¹¹, 3) Schutte Emotional Intelligence Scale (SEIS^{12,13}), 4) Adolescent Self-Regulation Inventory (ASRI¹⁴) and 5) Rosenberg's Self-Esteem Scale (RSES^{15,16}).

Additionally, the form contained a questionnaire to gauge the participants' sociodemographic details. Participants first reported their age, sibling status (no sibling, one sibling and more than one sibling), and academic course (BA/BCom/BSc). The questionnaire explored their participation in inter-school/college competitions, especially athletic and sociocultural competitions. The questionnaire also explored their self-perceived internet and social media usage and dependence. Participants were asked to report if they consumed tobacco products or alcohol. Lastly, they were asked if they believed that they were in control of their life.

Additionally, AACCI has published individual papers for the aforementioned scales¹⁷ exploring their distinct relationships with the demographic variables for the same cohort. The current paper discusses the analysis of the results of the CYRM-28.

Tools Used

The CYRM-28 is a self-report tool to measure resilience from a socioecological perspective. It is a popular tool that has been used by practitioners and researchers worldwide. It was developed as part of the International Resilience Project (IRP) at the Resilience Research Centre (RRC). It is suitable for individuals between 10 to 23 years of age. The scale includes 28 items to which individuals responded on a 5-point Likert scale ranging from 1 indicating "not at all" to 5 indicating "a lot". It has three subscales reflecting subcategories of resilience- individual, relational and contextual.

The scale has good psychometric properties. Confirmatory factor analysis provided strong support for the three-structure model. Internal reliability was found to be acceptable with Cronbach's α ranging from 0.65 to 0.91. It was also found to have good reliability and convergent validity when tested with a sample of Indian adolescents.¹⁸

Justification for Sociodemographic Variables Included in the Study

The primary aim of this study was to see the level of (scale) scores in the sample, to compare them with other studies and to determine age-related differences.

Age: Several studies using functional magnetic resonance imaging (MRI) and positive emission tomography (PET) scans have shown that brain development begins from behind and towards the front. The hypothalamic limbic system (which controls our emotions) matures first and the prefrontal cortex (which controls the hypothalamic limbic system and helps to make rational decisions with an ability to see the future consequences of one's actions) matures last—at around 25 years. Hence, it is expected that there may be age-based differences in brain development among adolescents (17-19 years) versus young adults (20-21 years) in the current sample.¹⁹ Accordingly, the sample was divided into two groups and age-based differences in resilience were studied.

In our previous study,⁸ we studied the aforementioned scale scores about participation in athletic and non-athletic intercollegiate competitions. It was found that females who participated in athletic and nonathletic intercollegiate competitions scored higher on social self-efficacy and self-regulation than nonparticipants. In addition, the current study also explored the relationship between the following demographic variables and individual scale scores.

Sibling status: AACCI also wanted to explore the relationship between sibling status (no siblings, one sibling and more than one sibling) on resilience. Siblings have been recognized as a source of support, strength and affection. Resilience can differ among individuals who have grown up among siblings, learned to share, talked about their feelings and supported one another. Adlerian studies on sibling rivalry have shown associations with unhealthy competitiveness, perceived parental rejection and poor self-image.²⁰ Accordingly, the current study aimed to explore differences in resilience among participants who had no siblings, one sibling or more than one sibling. We have not conducted an in-depth analysis of the gender and age of siblings, inter-sibling relationships, sibling rivalry, differential parenting, etc. as that was not the focus of our study.

Academic course: One's choice of academic pursuits often depends on their aptitude, interest and realities (familial pressure, finances, grades, etc.). Different streams have different entrance requirements, tap on various soft skills, demand different intensities of work, and

require varying coping and regulatory strategies; the struggles for the same could impact the students' resilience.²¹ Accordingly, the current study explored differences in resilience among participants pursuing BSc, BA and BCom.

Participation in intercollegiate nonathletic competitions: Participation in intercollegiate competitions is known to increase self-confidence and self-esteem and also enhance the ability to deal with stress, reduce performance anxiety and strengthen other soft skills.²² Accordingly, the current study tried to see if there is a difference in resilience among participants who participated (vs. did not participate) in intercollegiate nonathletic competitions.

Participation in intercollegiate athletic competitions: Sports are known to enhance executive functions, teamwork, resilience and the capacity to deal with failures. Our previous study showed that the engineering college girls who participated in sports competitions scored higher on social self-efficacy and self-regulation than nonparticipants.⁸ Accordingly, the current study tried to see if there is a difference in resilience among participants who participated (vs. did not participate) in intercollegiate athletic competitions.

Internet usage; social media usage; self-perceived dependence on the internet and self-perceived dependence on social media: During the global pandemic of COVID-19, the internet and social media were primary sources that fostered connectedness. This continued post-COVID and has led to issues like addiction, breach of privacy and disconnect from the real world. AACCI has previously studied the impact of internet addiction using Kimberly Young's internet addiction test (IAT).¹⁷ As we had studied the psychometric scales in addition to sociodemographic questions in this study, we did not add the IAT scale to avoid fatigue among participants while filling out the questionnaire. Since they were all between the ages of 17 and 21 years and mature enough to report their self-perception, we inquired about their self-proclaimed dependence on the internet (yes vs. no) and on social media (yes vs. no) on resilience. This was preceded by an inquiry about whether they used the internet and social media (yes vs. no).

Consumption of alcohol and consumption of tobacco: Consumption of substances is a common occurrence in adolescence and young adulthood. Indulgence in substance use is often a result of curiosity and experimentation, peer pressure, or even an unhealthy coping mechanism during distressing situations.²³ The ability to say no and refrain from this indulgence

requires high self-esteem, emotional regulation and self-control. Hence, we explored the differences in the scores of participants who consumed (vs. did not consume) alcohol and (vs. did not consume) tobacco.

Self-perceived control over one's life: Several studies have established associations between perceived control over one's life (yes/no/may be), resilience and one's overall well-being. As stated previously, AACCI did not use this standardized scale to avoid fatigue among participants while filling out the questionnaire.

Permissions and Ethical considerations: Ethical clearance for this project was given by AACCI's Institutional Ethics Committee. Permission for conducting the current study was procured from the college's principal. Informed consent was obtained via the questionnaire. This was not a clinical trial, and the participants were not patients.

STATISTICAL ANALYSIS

The data were analyzed using the IBS SPSS version 28.0.0. T-tests were conducted to study the effects of age and engagement in extracurricular activities. Further, one-way ANOVAs were conducted to determine the effects of sibling status, academic course and self-perceived control over one's life. The statistical significance of the calculated coefficients was considered at $p < 0.05$.

RESULTS

We compared total scores on the CYRM-28 across two groups, Group I: 17-19 years (Late adolescence) and Group II: 20-21 years (Young adults). The majority of the late adolescence group had scores in the high range (79.22%), followed by the moderate range (75%) and lastly low range (33.33%). In the case of young adults, majority of the young adults had scores in the low range (66.67%), followed by the moderate range (25%) and lastly the low range (20.78%) (Table 1).

The scores on the CYRM-28 between the two groups of Late adolescence and Young adults were compared and no statistically significant differences were found between the two groups (Table 2).

Among all the variables assessed, there was a statistically significant relationship between total resilience scores (TRS) and social media usage, dependence on social media and perceived self-control. Participants who reported using social media ($M = 112.668$, $SD = 13.820$) had significantly higher mean TRS than participants who did not use social media ($M = 105.409$, $SD = 19.107$), $t(352) = 2.324$, $p = 0.021$. Participants who did not experience perceived dependence on social media ($M = 113.280$, $SD = 13.375$) had significantly higher

Table 1. Range of Total CYRM-28 Scores

CYRM-28 (Range)	Age	
	Late adolescence (n = 275) (Group I: 17-19 yrs)	Young adults (n = 79) (Group II: 20-21 yrs)
Low (28-62)	33.33%	66.67%
Moderate (63-106)	75.00%	25.00%
High (107-140)	79.22%	20.78%

Table 2. Age-wise Distribution of CYRM-28 Scores (N = 354)

CYRM-28 (Range)	Age			
	Late adolescence (n = 275) (Group I: 17-19 yrs)		Young adults (n = 79) (Group II: 20-21 yrs)	
	n (%)	CYRM-28 (M ± SD)	n (%)	CYRM-28 (M ± SD)
Total CYRM-28 scores (28-140)	77.68%	112.618 ± 12.907	22.32%	110.822 ± 18.302
Individual subscale (11-55)	77.68%	43.225 ± 6.286	22.32%	43.215 ± 8.158
Relational subscale (6-30)	77.68%	29.494 ± 3.984	22.32%	28.696 ± 5.547
Contextual subscale (11-55)	77.68%	39.898 ± 5.375	22.32%	38.911 ± 6.596

mean TRS compared to the participants who perceived dependence on social media ($M = 109.796$, $SD = 15.953$), $t(352) = 2.124$, $p = 0.034$. Participants who perceived being in control of their life ($M = 115.439$, $SD = 14.223$) had a significantly higher mean TRS compared to participants who did not perceive control over their life ($M = 111.875$, $SD = 13.386$) or were unsure of their perception of control ($M = 108.362$, $SD = 13.705$), $F(2,351) = 10.045$, $p = <0.001$. There were no statistically significant effects of the remaining variables on TRS (Table 3).

Scores on the first subscale of the CYRM-28, which is individual resilience showed a statistically significant relationship with social media usage and perceived self-control. Participants who did not use social media ($M = 43.482$, $SD = 6.424$) had significantly higher mean individual resilience scores compared to the participants who used social media ($M = 39.318$, $SD = 9.756$),

Table 3. Effects of Demographic Variables on Mean Total Resilience Scores

Variable	Responses	Number (%)	Total resilience scores			
			Mean $\pm$ SD	t score/F score	df	P value
Age	Group I: 17-19 yrs	275 (77.68%)	112.618 $\pm$ 12.907	t = 0.985	352	0.325
	Group II: 20-21 yrs	79 (22.32%)	110.822 $\pm$ 18.302			
Sibling status	No sibling	19 (5.37%)	113.737 $\pm$ 14.413	F = 1.017	2,351	0.363
	One sibling	186 (52.54%)	113.069 $\pm$ 13.061			
	More than one sibling	149 (42.09%)	110.959 $\pm$ 15.653			
Academic course	BA	70	113.371 $\pm$ 14.620	F = 0.381	2,351	0.683
	BCom	43	111.046 $\pm$ 15.020			
	BSc	241	112.091 $\pm$ 14.082			
Do you participate in any inter-school/college sports competitions?	Yes	55 (15.54%)	111.846 $\pm$ 14.546	t = 0.338	352	0.735
	No	299 (84.46%)	112.327 $\pm$ 14.202			
Do you participate in any other inter-school/college competitions?	Yes	111 (31.36%)	113.693 $\pm$ 12.089	t = 1.316	352	0.189
	No	243 (68.64%)	111.543 $\pm$ 15.150			
Do you use the internet?	Yes	352 (99.44%)	112.2045 $\pm$ 14.188			
	No	2 (0.56%)	114.500 $\pm$ 36.062			
Do you believe that you are dependent on the internet?	Yes	222 (62.71%)	111.351 $\pm$ 14.709	t = 1.483	352	0.139
	No	132 (37.29%)	113.674 $\pm$ 13.454			
Do you use social media?	Yes	332 (93.79%)	112.668 $\pm$ 13.820	t = 2.324	352	0.021
	No	22 (6.21%)	105.409 $\pm$ 19.107			
Do you believe that you are dependent on social media?	Yes	108 (30.51%)	109.796 $\pm$ 15.953	t = 2.124	352	0.034
	No	246 (69.49%)	113.280 $\pm$ 13.375			
Do you consume any tobacco products?	Yes	3 (0.85%)	112.333 $\pm$ 13.203			
	No	351 (99.15%)	112.216 $\pm$ 14.305			
Do you consume alcohol?	Yes	10 (2.82%)	105.700 $\pm$ 13.132			
	No	344 (97.18%)	112.421 $\pm$ 14.287			
Do you believe that you are in control of your life?	Yes	173 (48.87%)	115.439 $\pm$ 14.223	F = 10.045	2,351	<0.001
	No	141 (39.83%)	111.875 $\pm$ 13.386			
	Not Sure	40 (11.30%)	108.362 $\pm$ 13.705			

*p < 0.05, **p < 0.01, ***p < 0.005

t (352) = 2.835, p = 0.005. Participants who perceived being in control of their life (M = 44.855, SD = 6.423) had a significantly higher mean individual resilience score compared to participants who did not perceive control over their life (M = 42.600, SD = 7.302) or were unsure of their perception of control (M = 41.397, SD = 6.490), F (2,351) = 11.021, p = <0.001. All remaining demographic variables demonstrated no statistically significant effects on the individual resilience scores (Table 4).

Scores on the second subscale of the CYRM-28, which is relational resilience showed a statistically significant relationship with social media usage, dependence on social media and the internet and perceived self-control. Participants who used social media (M = 29.455, SD = 4.256) had significantly higher mean relational resilience scores compared to the participants who did not use social media (M = 27.227, SD = 5.739), t (352) = 2.321, p = 0.021. Participants who did not experience perceived

Table 4. Effects of Demographic Variables on Mean Individual Resilience Scores

Variable	Responses	Number (%)	Individual resilience scores			
			Mean $\pm$ SD	t score/F score	df	P value
Age	Group I: 17-19 yrs	275 (77.68%)	43.225 $\pm$ 6.286	t = 0.012	352	0.990
	Group II: 20-21 yrs	79 (22.32%)	43.215 $\pm$ 8.158			
Sibling status	No sibling	19 (5.37%)	45.631 $\pm$ 7.754	F = 2.984	2,351	0.052
	One sibling	186 (52.54%)	43.688 $\pm$ 6.344			
	More than one sibling	149 (42.09%)	42.336 $\pm$ 6.987			
Academic course	BA	70	44.228 $\pm$ 7.009	F = 0.991	2,351	0.372
	BCom	43	43.163 $\pm$ 7.141			
	BSc	241	42.941 $\pm$ 6.582			
Do you participate in any inter-school/college sports competitions?	Yes	55 (15.54%)	43.127 $\pm$ 7.331	t = 0.115	352	0.909
	No	299 (84.46%)	43.240 $\pm$ 6.634			
Do you participate in any other inter-school/college competitions?	Yes	111 (31.36%)	43.918 $\pm$ 5.820	t = 1.315	352	0.189
	No	243 (68.64%)	42.905 $\pm$ 7.105			
Do you use the internet?	Yes	352 (99.44%)	43.224 $\pm$ 6.695			
	No	2 (0.56%)	43.000 $\pm$ 16.970			
Do you believe that you are dependent on the internet?	Yes	222 (62.71%)	43.054 $\pm$ 6.745	t = 0.612	352	0.541
	No	132 (37.29%)	43.508 $\pm$ 6.738			
Do you use social media?	Yes	332 (93.79%)	43.482 $\pm$ 6.424	t = 2.835	352	0.005
	No	22 (6.21%)	39.318 $\pm$ 9.756			
Do you believe that you are dependent on social media?	Yes	108 (30.51%)	42.750 $\pm$ 7.87	t = 0.875	352	0.382
	No	246 (69.49%)	43.431 $\pm$ 6.581			
Do you consume any tobacco products?	Yes	3 (0.85%)	46.000 $\pm$ 5.567			
	No	351 (99.15%)	43.199 $\pm$ 6.747			
Do you consume alcohol?	Yes	10 (2.82%)	43.200 $\pm$ 6.196			
	No	344 (97.18%)	43.224 $\pm$ 6.760			
Do you believe that you are in control of your life?	Yes	173 (48.87%)	44.855 $\pm$ 6.423	F = 11.021	2,351	<0.001
	No	141 (39.83%)	42.600 $\pm$ 7.302			
	Not Sure	40 (11.30%)	41.397 $\pm$ 6.490			

*p < 0.05, **p < 0.01, ***p < 0.005

dependence on social media (M = 29.784, SD = 4.139) had significantly higher mean relational resilience scores compared to the participants who perceived dependence on social media (M = 28.250, SD = 4.752), $t(352) = 3.067$, $p = 0.002$. Participants who did not perceive dependence on the internet (M = 30.106, SD = 3.913) had a significantly higher mean relational resilience score compared to participants who perceived dependent on the internet (M = 28.847, SD = 4.588), $t(352) = 2.634$,

$p = 0.09$. Participants who perceived being in control of their life (M = 29.942, SD = 4.376) had a significantly higher mean relational resilience score compared to participants who did not perceive control over their life (M = 29.350, SD = 4.407) or were unsure of their perception of control (M = 28.539, SD = 4.387), $F(2,351) = 4.046$, $p = 0.018$. All remaining demographic variables demonstrated no statistically significant effects on the relational resilience scores (Table 5).

Table 5. Effects of Demographic Variables on Mean Relational Resilience Scores

Variable	Responses	Number (%)	Relational resilience scores			
			Mean $\pm$ SD	t score/F score	df	P value
Age	Group I: 17-19 yrs	275 (77.68%)	29.494 $\pm$ 3.984	t = 1.428	352	0.154
	Group II: 20-21 yrs	79 (22.32%)	28.696 $\pm$ 5.547			
Sibling status	No sibling	19 (5.37%)	28.789 $\pm$ 4.454	F = 0.264	2,351	0.768
	One sibling	186 (52.54%)	29.451 $\pm$ 3.938			
	More than one sibling	149 (42.09%)	29.215 $\pm$ 4.899			
Academic course	BA	70	29.300 $\pm$ 4.688	F = 0.369	2,351	0.692
	BCom	43	28.790 $\pm$ 4.793			
	BSc	241	29.415 $\pm$ 4.230			
Do you participate in any inter-school/college sports competitions?	Yes	55 (15.54%)	28.818 $\pm$ 4.409	t = 0.916	352	0.360
	No	299 (84.46%)	29.408 $\pm$ 4.382			
Do you participate in any other inter-school/college competitions?	Yes	111 (31.36%)	29.783 $\pm$ 3.862	t = 1.357	352	0.176
	No	243 (68.64%)	29.103 $\pm$ 4.597			
Do you use the internet?	Yes	352 (99.44%)	29.318 $\pm$ 4.375			
	No	2 (0.56%)	29.000 $\pm$ 8.485			
Do you believe that you are dependent on the internet?	Yes	222 (62.71%)	28.847 $\pm$ 4.588	t = 2.634	352	0.009
	No	132 (37.29%)	30.106 $\pm$ 3.913			
Do you use social media?	Yes	332 (93.79%)	29.455 $\pm$ 4.256	t = 2.321	352	0.021
	No	22 (6.21%)	27.227 $\pm$ 5.739			
Do you believe that you are dependent on social media?	Yes	108 (30.51%)	28.250 $\pm$ 4.752	t = 3.067	352	0.002
	No	246 (69.49%)	29.784 $\pm$ 4.139			
Do you consume any tobacco products?	Yes	3 (0.85%)	25.000 $\pm$ 3.605			
	No	351 (99.15%)	29.535 $\pm$ 4.378			
Do you consume alcohol?	Yes	10 (2.82%)	26.000 $\pm$ 3.944			
	No	344 (97.18%)	29.413 $\pm$ 4.365			
Do you believe that you are in control of your life?	Yes	173 (48.87%)	29.942 $\pm$ 4.376	F = 4.046	2,351	0.018
	No	141 (39.83%)	29.350 $\pm$ 4.407			
	Not Sure	40 (11.30%)	28.539 $\pm$ 4.387			

*p < 0.05, **p < 0.01, ***p < 0.005

Table 6. Effects of Demographic Variables on Mean Contextual Resilience Scores

Variable	Responses	Number (%)	Contextual resilience scores			
			Mean $\pm$ SD	t score/F score	df	P value
Age	Group I: 17-19 yrs	275 (77.68%)	39.898 $\pm$ 5.375	t = 0.009	352	0.174
	Group II: 20-21 yrs	79 (22.32%)	38.911 $\pm$ 6.596			
Sibling status	No sibling	19 (5.37%)	39.315 $\pm$ 4.819	F = 0.388	2,351	0.679
	One sibling	186 (52.54%)	39.931 $\pm$ 5.264			
	More than one sibling	149 (42.09%)	39.409 $\pm$ 6.260			

Table 6. Effects of Demographic Variables on Mean Contextual Resilience Scores

Variable	Responses	Number (%)	Contextual resilience scores			
			Mean $\pm$ SD	t score/F score	df	P value
Academic course	BA	70	39.843 $\pm$ 5.704	F = 0.269	2,351	0.765
	BCom	43	39.093 $\pm$ 5.991			
	BSc	241	39.734 $\pm$ 5.627			
Do you participate in any inter-school/college sports competitions?	Yes	55 (15.54%)	39.673 $\pm$ 5.913	t = 0.007	352	0.994
	No	299 (84.46%)	39.678 $\pm$ 5.641			
Do you participate in any other inter-school/college competitions?	Yes	111 (31.36%)	39.991 $\pm$ 4.977	t = 0.701	352	0.484
	No	243 (68.64%)	39.535 $\pm$ 5.971			
Do you use the internet?	Yes	352 (99.44%)	39.661 $\pm$ 5.659			
	No	2 (0.56%)	42.500 $\pm$ 7.500			
Do you believe that you are dependent on the internet?	Yes	222 (62.71%)	39.450 $\pm$ 5.744	t = 0.978	352	0.329
	No	132 (37.29%)	40.060 $\pm$ 5.558			
Do you use social media?	Yes	332 (93.79%)	39.732 $\pm$ 5.669	t = 0.694	352	0.488
	No	22 (6.21%)	38.863 $\pm$ 5.841			
Do you believe that you are dependent on social media?	Yes	108 (30.51%)	38.796 $\pm$ 6.224	t = 1.944	352	0.053
	No	246 (69.49%)	40.065 $\pm$ 5.385			
Do you consume any tobacco products?	Yes	3 (0.85%)	41.333 $\pm$ 9.291			
	No	351 (99.15%)	39.664 $\pm$ 5.654			
Do you consume alcohol?	Yes	10 (2.82%)	36.500 $\pm$ 5.083			
	No	344 (97.18%)	39.770 $\pm$ 5.672			
Do you believe that you are in control of your life?	Yes	173 (48.87%)	40.642 $\pm$ 5.715	F = 6.138	2,351	0.002
	No	141 (39.83%)	39.925 $\pm$ 5.667			
	Not Sure	40 (11.30%)	38.425 $\pm$ 5.422			

*p < 0.05, **p < 0.01, ***p < 0.005

Scores on the third subscale of the CYRM-28, which is contextual resilience showed a statistically significant relationship with perceived self-control. Participants who perceived being in control of their life (M = 40.642, SD = 5.715) had a significantly higher mean contextual resilience score compared to participants who did not perceive control over their life (M = 39.925, SD = 5.667) or were unsure of their perception of control (M = 38.425, SD = 5.422), F (2,351) = 6.138, p = 0.002. All remaining demographic variables demonstrated no statistically significant effects on the contextual resilience scores (Table 6).

DISCUSSION

Resilience is positively associated with several factors in youth like improved problem solving,²⁴ perceiving

self as more efficient with academics, being able to cope with novelty in life,²⁵ using all thinking styles,²⁶ better life satisfaction²⁷ and higher self-esteem²⁸ among other things. When youth see themselves as being able to cope with stress, they are more likely to be able to deal with novelty in life, particularly in academic contexts.²⁵ Thus, building resilience can have several advantages for youth.

Researchers have also been interested in recognizing factors that can predict better resilience. These protective factors are characteristics of the individual and their environment that can reduce the likelihood of experiencing negative outcomes from adverse events.^{28,29} Some of these factors include having an internal locus of control (LOC), lack of adversity in relationships with parents and guardians³⁰ and parenting quality.³¹ Besides

this, environmental factors like safe neighborhoods and healthy school environments can also play an important role in building resilience.³²

The current study examined scores on the CYRM-28 among a sample of female students based in India. Participants' scores on the full scale as well as three subscales were used for comparison as seen in Tables 3 to 6. There were significant relationships between participants' scores on the Resilience Scale and their scores on perceived control, social media usage, dependence on social media and dependence on the internet amongst all the demographic variables assessed.

Age-wise Differences in Resilience Scores

The current sample included students between the ages 17 to 21 years who were divided into two groups, late adolescents or Group I: 17-19 years ($n = 275$, 77.68%), and young adults or Group II: 20-21 years ($n = 79$, 22.32%). There was no statistically significant difference between the two groups in terms of their mean TRS [$t(352) = 0.985$, $p = 0.325$] as well as subscale scores (Tables 2 and 3). We can conclude that the two groups are comparable in terms of their maturity. Thus, resilience is likely to be stable across a person's lifespan.

Relationship Between Resilience and Perceived Control Over Life

There was a direct relationship between scores on the Resilience Scale and participants perceived control over their lives. Particularly, participants who perceived being in control of their lives had a significantly higher mean TRS compared to other participants who did not perceive control over their lives ($M = 111.875$, $SD = 13.386$) or were unsure of their perception of control ($M = 108.362$, $SD = 13.705$), $F(2,351) = 10.045$, $p < 0.001$. They also had significantly higher scores on all three domains of resilience including individual resilience [$F(2,351) = 11.021$, $p < 0.001$], relational resilience [$F(2,351) = 4.046$, $p = 0.018$] and contextual resilience [$F(2,351) = 6.138$, $p = 0.002$] compared to individuals who did not perceive control over their lives or were unsure.

Perceived control refers to an individual's beliefs about their ability to influence their internal states as well as their external environment. Perceptions of control have been known to contribute to reduced distress and increased overall well-being.³³ Several research studies have shown that seeing a relationship between one's choices and outcomes helps people deal with stress, manage caregiver burden and have better overall health.³⁴ Similar findings have been obtained by other researchers who have examined aspects related

to perceived control over life such as LOC. Edwards et al (2016) found that adolescents with an inner LOC had higher levels of resilience than those with an external LOC.³⁰ Our study supports these findings and emphasizes the role that perceived control plays in resilience.

Relationship Between Resilience and Social Media Usage

Social media has become the norm in today's day and age. We were interested in recognizing the proportion of adolescents who do not use social media and if that would have an impact on resilience. In our sample, the majority of the individuals used social media ($n = 332$, 93.79%). We found that participants who reported using social media ($M = 112.668$, $SD = 13.820$) had significantly higher mean TRS than participants who did not use social media ($M = 105.409$, $SD = 19.107$), $t(352) = -2.324$, $p = 0.021$.

Our findings suggest that social media use could be associated with better resilience among college students. While there has been a lot of research on the negative impact of social media, several researchers have tried to look at its potential benefits. Sigalit et al (2017) found positive correlations among nursing students use of social media and resilience.³⁵ Several studies have pointed out that social media plays an important role in building resilience in times of disaster.³⁶ Online networks may serve to build a sense of belonging, allow expression and provide resources that people need to deal with threats thus contributing to resilience.³⁷

We also found that, among all the subscales, participants who used social media ($M = 29.455$, $SD = 4.256$) had significantly higher scores on the relational resilience subscale compared to the participants who did not use social media ($M = 27.227$, $SD = 5.739$), $t(352) = 2.321$, $p = 0.021$. This suggests that the nature of social media use could be linked to better relational resilience. Social media may serve as a tool to foster communities among people to maintain connections. Zhao (2021) found that college students who use social media mainly for 'social use' including interacting and communicating with others, rather than for 'entertainment use' which includes playing games, listening to music, etc., had higher subjective well-being.³⁸

Participants who did not use social media ($M = 43.482$, $SD = 6.424$) had significantly higher mean individual resilience scores compared to the participants who used social media ($M = 39.318$, $SD = 9.756$), $t(352) = -2.835$, $p = 0.005$. Individual resilience as measured in our

study by the CYRM-28, reflects an individual's personal and social skills. It is possible that students who do not use social media may be able to avoid the potential risks of social media, and thus have better individual resources. For example, studies have shown that Facebook use leads to a decline in subjective well-being among a sample of young adults.³⁹ Adolescents with stronger emotional involvement with social media, tend to experience greater levels of anxiety and depression and suffer from low self-esteem.⁴⁰

All these findings together reflect the diversity in students' usage of social media and its possible implications on their lives. These factors could be explored in greater detail in future studies.

Relationship Between Resilience and Perceived Dependence on Social Media

Due to the prevalence of social media in today's age, we were interested in examining individuals' relationships with social media. Our findings suggest that besides social media usage, there is also a need to look at each individual's perceptions of their own social media use.

When it came to perceived dependence on social media, we had two main findings. Firstly, participants who did not experience perceived dependence on social media ($M = 113.280$, $SD = 13.375$) had significantly higher mean TRS compared to the participants who perceived dependence on social media ($M = 109.796$, $SD = 15.953$), $t(352) = 2.124$, $p = 0.034$. It is possible that individuals with higher levels of resilience can cope better with the stressors in their lives, and do not rely on social media to cope with stress. Other researchers have reported an inverse relationship between psychological resilience and social media addiction. They also reported that scores on psychological resilience could predict social media addiction.³⁹

Secondly, participants who did not experience perceived dependence on social media ($M = 29.784$, $SD = 4.139$) had significantly higher mean relational resilience scores compared to the participants who perceived dependence on social media ($M = 28.250$, $SD = 4.752$), $t(352) = 3.067$, $p = 0.002$. Relational resilience is associated with an individual's social support. Our findings suggest that people who are not dependent on social media may have good systems of social support in their lives, reflecting higher scores on relational resilience. Other research studies have shown that individuals with higher levels of perceived social support tend to have lower levels of social media addiction.⁴¹

Relationship Between Resilience and Dependence on the Internet

Internet has become an integral part of our daily lives and we intend to look at how it impacts adolescent's lives. Participants who did not perceive dependence on the internet ($M = 30.106$, $SD = 3.913$) had a significantly higher mean relational resilience score compared to participants who perceived dependence on the internet ($M = 28.847$, $SD = 4.588$), $t(352) = 2.634$, $p = 0.09$. Relational resilience, as measured by the CYRM-28, reflects the individual's social support and relationships with primary caregivers.^{18,42}

Our findings suggest that dependency on the internet could have an association with adolescents' interpersonal relationships. Lack of social support or poor quality of interpersonal relations could be linked to increased dependency on the internet. Similar findings have been reported by other researchers. Adolescents who reported having poor social relationships were more vulnerable to engaging in problematic internet use patterns.^{43,44}

Relationship Between Resilience and Sibling Status

The majority of the students in the sample had either one sibling ($n = 186$, 52.54%) or more than one sibling ($n = 149$, 42.09%). A small number of students reported having no siblings ($n = 19$, 22.32%). We found no significant relationship between sibling status and mean TRS [$F(2,351) = 1.017$, $p = 0.363$].

Some studies have found a positive correlation between sibling relationships and resilience.⁴⁵ More than the number of siblings, it is the quality of sibling relationships that influences an individual's resilience.⁴⁶ However, examining this was beyond the scope of the current study.

Relationship Between Resilience and Academic Course

The majority of the students in the current sample were pursuing a BSc degree ($n = 241$) followed by BA ($n = 70$) and BCom ($n = 43$). The mean TRS of the three groups were as follows – BSc: ($M = 112.091$, $SD = 14.082$); BA ($M = 113.371$, $SD = 14.620$) and BCom ($M = 111.046$, $SD = 15.020$). There were no statistically significant relationships between academic courses and mean TRS [$F(2,351) = 0.381$, $p = 0.683$].

Relationship Between Resilience and Participation in Competitions (Sports and Intercollege)

We did not find any association between students' participation in various intercollegiate competitions

(athletic and nonathletic) and their resilience. When asked about participation in sports competitions, the majority of the participants reported not participating ($n = 299, 84.46\%$). Similarly, when asked about nonathletic competitions, students reported not participating ($n = 243, 68.64\%$). There were no significant relationships between participation in sports competitions and resilience scores $\{t(352) = 0.338, p = 0.735\}$ and participation in nonathletic competitions and resilience scores $\{t(352) = 1.316, p = 0.189\}$.

Relationship Between Resilience and Internet Usage

The majority of the participants reported using the internet ($n = 352, 99.44\%$). Since the sample did not consist of many students who did not use the internet, further comparative analysis regarding resilience scores could not be conducted.

Unsurprisingly, the majority of the participants use the internet, since we live in the digital age. We have included internet usage as a separate variable to better understand patterns of engagement with the internet. Distinguishing between internet use and self-perceived internet dependence can shed light on factors that lead to or influence dependency. However, this is beyond the scope of the current research and can be explored further.

Relationship Between Resilience and Consumption of Tobacco and Alcohol

Most participants reported that they did not consume alcohol ($n = 344, 97.18\%$) or tobacco products ($n = 351, 99.15\%$). Since the sample did not consist of many students who did consume alcohol or tobacco, further comparative analysis regarding resilience scores could not be conducted.

It is important to consider that participants in the current study may have responded in a socially desirable manner due to the setting of the study and the stigma associated with substance use, particularly among women.

Implications for Health Care

Prevention is better than cure. In health care, it is more important to focus on preventive aspects for holistic health in the community, which includes both physical and mental health. The global COVID pandemic has made the world realize that those individuals who had resilience were able to cope with the adversities far better than those who were not resilient. Building resilience in the community requires a lot of sustained effort.

Training to become resilient should begin in childhood and continue into adolescence and adulthood.

AACCI has been providing WHO life skill education for children and youth since its inception in 2007 (www.aacci.in and www.aaccitrainingprograms.com).

Limitations

The current study was cross-sectional and the sample was obtained through convenience sampling due to which generalizability of the results may be limited. Data for the study was obtained through self-report measures and thus could be subject to socially desirable responses or inaccuracies. Future studies may use objective sources of data as well as reports from other individuals like parents, teachers, etc. The current sample was selected from a single college and included only females. Other researchers may consider the same variables with a more diverse sample and a larger sample size.

Recommendations

Our results can be used to create training programs to build resilience among adolescents. It shows the need to create tools that reflect the multifaceted nature of resilience- and the need to strengthen skills at three levels- individual, relational and contextual. Besides building individual capacities, we also need systems that support individuals. There is also a need to find innovative methods to prevent social media dependence. We can equip adolescents to make better use of social media platforms by educating them about their potential risks and benefits.

CONCLUSION

Our study examined the relationship between resilience and factors that are important in an adolescent's life. Our findings show that resilience is not associated with age. However, it is associated with adolescents' perceptions of control over their lives, their usage of social media and dependence on social media and the internet.

Building resilience during adolescence can be crucial to their overall well-being. Understanding factors that influence resilience at this age can help us create the right tools to support adolescent mental health. This study also contributes to the growing understanding of the role of social media in the lives of adolescents. Our findings also suggest the need to educate adolescents to appropriately use the internet and social media. Training can be created such that adolescents know

how to use social media to their advantage and also make them aware of possible signs of misuse. Thus, this study can be beneficial for adolescents as well as individuals working with adolescents in various settings like schools, colleges, health care setups and community centers.

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