

Moderators and Mediators of Distress and Positive Coping in Undergraduate Students

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Abstract

Background: Students in higher education face considerable amount of stress relating to academic demands, family issues and several other factors well documented in the literature. Issues relating to resilience and coping are important in this regard. Emotional intelligence is acknowledged as an attribute that aids one's overall adjustment. This study was conducted in a college for women students in India.

Objectives: The current study sought to understand stress experienced by undergraduate students along with an assessment of the extent of resilience, coping and emotional intelligence manifested in them. We were also interested in understanding the role played by resilience and emotional intelligence in the pathway from psychological distress to coping.

Design: A longitudinal design was used to assess change in these attributes over time as students moved from course entry to completion. A quantitative design was used and data collected using survey methodology.

Methods: Data were collected from sixty-four students from two undergraduate programmes using standardised instruments to measure the key variables of the study.

Results: A significant change in emotional intelligence scores was seen at the point of course completion. It was also seen that resilience exerted a significant direct effect on emotional intelligence and both moderated as well as mediated the pathway between distress and positive coping.

Conclusions: Resilience is a key variable that buffers the impact of stress as well as determines the efficacy of coping. Measures to strengthen student resilience would have significant benefits in terms of mitigating the effect of stress for students.

Key words: Resilience, Emotional Intelligence, Coping, Stress, Undergraduate students

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Stress has been defined as a “particular relationship between the person and the environment that is appraised by the person as taxing or exceeding his or her resources” (Lazarus & Folkman, 1984, p. 19). In the context of students, stress is the outcome of the interaction between perceived environmental demands, the student’s appraisal of the same and response to it (Lee & Larson, 2000). In recent years, students in higher education have been reporting an alarming increase in stress levels (Dalky & Gharaibeh, 2019; Othman, Ahmad, Morr & Ritvo, 2019) and this is hence a matter of concern. Managing assignments, peer competition and deficient social skills are some commonly reported sources of stress (Fairbrother & Warn, 2003). Added to these are problems in financial management, changes in living circumstances, and difficulties in balancing personal and academic life (Chernomas & Shapiro, 2013). Students transitioning to college potentially encounter stressors related to starting university that may involve difficulties in academic work, personal, family, interpersonal and social difficulties besides maintaining university-life balance (Pitt, Opreescu, Tapia & Gray, 2018). Added to these is the pressure to succeed, lack of resources and heightened academic expectations (Hurst, Baranik & Daniel, 2013).

Several studies have highlighted the adverse consequences of stress on student wellbeing. Some of these pertain to poorer levels of subjective well-being and may also result in lower grades and dropping of courses (J.C. Watson & Watson, 2016). Other problems reported by students with high academic stress relate to depression, anxiety, behavioural problems and irritability (Deb, Strodl & Sun, 2015; Verma, Sharma & Larson, 2002). Low perceived happiness reported by students is associated with higher stress levels and lower emotional intimacy with others (King, Vidourek, Merianos & Singh, 2014). It thus becomes important to understand how college students cope with various stressors.

Psychological well-being has been negatively associated with college stress and stress coping strategies have been reported to significantly moderate the relationship between stress and mental health in students (Chen, Wong, Ran & Gilson, 2009). Both positive and negative strategies are used by students to deal with stress. Positive approaches used in managing stress include exercise, depending more on faith, and telling themselves that things will be “okay”, while sleeping less, eating more, increased use of the internet and procrastination are some negative approaches reported by students (Dexter, Huff, Rudecki & Abraham, 2018). The literature on stress coping envisages the classification of coping strategies in several ways. This has included active and passive (Jex, Bliese, Buzzell, & Primeau, 2001) or approach and avoidance (Anshel, 1996) coping styles. Yet another classification considers coping strategies as being emotion-focused, in which the attempt is to deal with adverse emotional reactions to stress and problem-focused coping where the effort is to deal with stressors in practical ways of resolving stressful situations (Lazarus & Folkman, 1984). Problem focused coping strategies have been negatively associated with academic stress (Kariv & Heiman, 2005), alcohol use (Park, Armeli, & Tennen, 2004) and depression (McNamara, 2000) and positively associated with health (Sasaki & Yamasaki, 2007) and academic achievement (Clifton, Perry, Stubbs & Roberts, 2004). Positive coping strategies have been considered to be effective in suppressing psychological distress (Gladden, 2012).

Studies of stress and coping were instrumental in developing the concept of resilience (Beckett, 2000). It is similar to psychological constructs like “ego strength” and “will/perseverance,” and is not a naturally occurring phenomena but an abstract theoretical construct (Rosenbaum & Weatherford, 2017). Yeager & Dweck (2012) consider resilience to comprise of behavioural, attributional, or emotional responses to academic or social challenges that are positive and beneficial for development in terms of exploring new strategies, enabling greater effort, or resolving conflicts. Resilience is an ongoing

developmental process that is learned over time (Weststrate & Gluck, 2017) and is shaped by difficult life events that are often unexpected and may have life changing consequences for the individual (van Abbema, Bielderma, Greef, Hobbelen, Krijnen, & van der Schans, 2015).

Resilience individuals tend to be resourceful, have a sense of sturdiness of character, positive adaptation and flexibility in responding to environmental challenges (Luthar, Crossman, & Small, 2015). Resilient students demonstrate intrinsic attributes such as emotional control and self-management besides external factors such as social integration and the ability to use formal and informal support networks (McIntosh & Shaw, 2017). Coping with mental health issues is an important determinant of retention and academic performance and relates to how resilience is used by students (Hartley, 2011). Resilience is an important characteristic that allows students to persist and bounce back from academic adversities, such as failing an examination and hence is a key determinant of academic performance (Leary & DeRosier, 2012). Resilience within the individual, family, or community involves protective factors such as resources, competencies, and skills (Loh, Schutte, & Thorsteinsson, 2014). Contributors to resilience involve the presence of strong protective factors that consist of individual, caregiving and contextual factors (Anasuri & Anthony, 2018). The quality and depth of social relationships and happiness with existing relationships are crucial in this regard (McIntosh & Shaw, 2017). The steady decline in mental health in college populations is associated with decreasing resilience (Eagan, Lozano, Hurtado, & Case, 2013) and is associated with the flexible use of a variety of coping strategies (Southwick, Bonanno, Masten, Panter-Brick & Yehuda, 2014). Given the importance of resilience in the overall wellbeing of students in enabling them deal with various academic and personal life challenges, this becomes an important variable that merits investigation in the context of stress and coping in students.

Emotional intelligence (EI) has been considered to be a facilitator that enables students to better manage the social-emotional complexities of academic environments (Matthews, Zeidner, & Roberts, 2002). A review of the literature shows that EI is a key element for students while handling stressful situations (Jan, Anwar & Warraich, 2017) and in coping and conflict management. EI is the ability to recognize one's own feeling and those of others and is instrumental for motivating oneself as well as maintaining relationships with others (Caruso, Mayer & Salovey, 2002). It comprises both interpersonal and intrapersonal intelligence. While interpersonal intelligence is used to understand and manage relationships with others and aids the development of effective relationships, intrapersonal intelligence refers to the inner intelligence that one uses to know and understand oneself and is important for self-regulation, self-awareness and self-motivation (Wijekoon, Amaratunge, de Silva, Senanayake, Jayawardane & Senarath, 2017). EI has also been linked to other factors that are believed to directly or indirectly contribute to academic success — such as adaptive coping strategies (MacCann, Fogarty, Zeidner & Roberts, 2011), achievement motivation (Afolabi, Ogunmwonyi, & Okediji, 2009) and positive peer interaction (Perera & Digiacomio, 2013). A study of undergraduate students from India extracted reflective communication and self-reflective abilities as being important predictors of EI in social work students (Stanley & Mettilda, 2020a).

The brief overview of the literature has brought out the interrelated and interdependent nature of the variables of interest in this study namely: stress, resilience, coping and EI and their relevance in the context of the student population. Our focus in this investigation was twofold. First to understand if these attributes change over time as students move through their academic journey. In line with previous recommendations that it would be beneficial to follow up students to explore changes over the duration of their programme

of study (Deasy, Coughlan, Pironom, Jourdan & Mannix-McNamara, 2014), a longitudinal design was adopted for this investigation.

Second to identify if resilience and EI mediate and/or moderate the paths between stress and positive coping in undergraduate students. Lazarus and Folkman's stress coping model (1984) forms the theoretical basis of our investigation. According to this model cognitive appraisal of an event as posing a significant threat, challenge or loss besides evaluating whether one has the necessary resources to deal with the stressor is crucial in determining how an individual chooses to deal with the stressor. Appropriate coping responses then come into play. Coping refers to "cognitive and behavioural efforts to master, reduce, or tolerate the internal and/or external demands that are created by the stressful transaction" (Folkman, 1984, p. 843). Our hypothesis seeks to identify the role that resilience and EI play in the pathway between stress experience and coping response.

Methods

Setting for the Study

Data were collected from students at Cauvery College for Women in Tiruchirappalli, India, a leading Arts and Science college exclusively for women students that is affiliated to the Bharathidasan University. The college caters to about 4000 students in fourteen undergraduate three-year degree programmes and nine two-year postgraduate courses including social work at both levels. The undergraduate programmes are of three years' duration and confer a bachelor's degree on course completion.

Data collection

A longitudinal non-experimental design was used for the study. Data were collected using survey methodology from sixty-four undergraduate students of social work and those

doing their BA degree in Tamil (vernacular of south India). Instruments were administered at the point of course entry (T1) and then three years later on the verge of course completion (T2).

Measures

A socio-demographic data sheet was prepared to collect background information from the respondents. In addition, four standardised instruments were administered to assess the variables of interest and are briefly described here.

The Depression, Anxiety and Stress scales (DASS 21) by Lovibond and Lovibond (1995) were administered to the respondents. Only the anxiety and stress subscales of this instrument were used, and distress was computed by adding up the scores of these two subscales. Higher scores indicate higher levels of stress and anxiety. The Cronbach's alpha for this instrument in the present study was computed to assess its reliability and was .81, which indicates a 'good' level of scale reliability (George & Mallery, 2003).

Coping was assessed with the Brief Cope Scale (Carver, 1997) and has 26 items that measure aspects such as: Self-distraction, Venting, Active coping, Positive reframing, Denial, Planning, Self-blame, Use of emotional support, Humour, Use of instrumental support, Acceptance, Behavioural disengagement and Religion. These strategies were re-classified to generate three major coping styles namely emotion focused, problem focused and dysfunctional coping (Cooper, Katona & Livingston, 2008). The cumulative scores of emotion focused and problem focused coping provided the measure for positive coping. The Cronbach's alpha of this instrument in the present study was calculated as .83, which indicates a 'good' level of scale reliability (George & Mallery, 2003).

The Connor and Davidson (2003) Resilience scale (CD-RISC) comprises of 25 items, each rated on a 5-point scale (0–4), with higher scores reflecting greater resilience. It measures five factors of resilience that represent the notion of personal competence, high standards, and tenacity (F1), tolerance of negative affect (F2), the positive acceptance of change and secure relationships (F3), control (F4) and spiritual influences (F5). The Cronbach's alpha was calculated as .87, which indicates an 'excellent' level of scale reliability (George & Mallery, 2003).

The EI Scale (EIS) by Schutte, Malouff, Hall, Haggerty, Cooper, Golden et al., (1998) measures three sub-dimensions of EI namely: appraisal and expression of emotion, regulation of emotion and utilisation of emotion. The scale has 33 items, each measured on a five-point Likert scale with responses ranging from 'strongly disagree' (Score 1) to 'strongly agree' (Score 5) with higher scores indicating higher levels of EI. The Cronbach's alpha in the present study was .90, which indicates an 'excellent' level of scale reliability (George & Mallery, 2003).

Ethical issues

The study received clearance from the ethics panel of the college following permission to undertake the study granted by the college Principal. Signed informed consent forms were obtained from all respondents after they were briefed about the study. They were told that their participation was voluntary and that they could drop out of the study at any point without assigning any reason for doing so. The questionnaires were anonymised and no personal identification data were collected nor was there any follow up contact made subsequently.

Statistical analyses

SPSS version 25 (Statistical Package for Social Sciences; IBM Software, Armonk, NY) was used for data analysis and for generating the results of this study. Paired t tests were used to assess any change in the manifestation of the study variables from T1 to T2.

Pearson's coefficients were computed to determine the correlation among variables. Path analysis using Amos version 23 was used to diagrammatically represent the mediating and/or moderating effects of resilience and EI between distress experienced and positive coping.

Results

Table 1

Respondents distributed by sociodemographic variables

Variable	Type	Respondents (N=64)	%
Religion	Hindu	57	89.0
	Non-Hindu	7	11.0
Nativity	Urban	42	65.6
	Rural	22	34.4
Family type	Nuclear	54	84.4
	Extended	10	15.6
Medium of instruction in school	Tamil	53	82.8
	English	11	17.2
Place of residence	Hostel	16	25.0
	With parents	48	75.0

Respondents' profile

The age of the respondents ranged from 16 to 22 years with a mean of 18.05. Their average total family income was Rupees 13901. Other background particulars are depicted in Table 1.

Change in variables from T1 to T2

Table 2

Paired t test results for respondents at T1 and T2

Time	T1		T2		t value
	Mean	SD	Mean	SD	
Psychological distress	17.50	7.08	17.98	8.79	-0.40
Positive coping	42.58	7.92	42.09	7.77	0.39
Dysfunctional coping	24.72	4.68	24.69	5.22	0.04
Appraisal of emotions	47.95	6.08	44.05	9.71	2.59*
Regulation of emotions	41.17	5.08	35.11	9.14	4.72***
Utilisation of emotions	40.23	5.09	35.39	9.87	3.54**
Total EI Score	129.36	14.05	114.55	27.65	3.81***
F1	22.66	6.44	20.44	8.36	1.91
F2	17.89	5.65	17.23	6.98	0.70
F3	11.19	3.97	10.75	4.69	0.72
F4	8.61	2.95	7.77	3.47	1.56
F5	5.36	2.16	4.30	2.26	3.07**
Total Resilience Score	65.70	18.43	60.48	23.50	1.66

SD= Standard Deviation; $n=64$; *** $p < .001$; ** $p < .01$; * $p < .05$; $df=63$

Mean scores obtained for the key variables were compared at both time points using paired t tests and this is presented in Table 2. It was seen that all components of EI and its total score showed a statistically significant difference at T2. None of the other variables studied showed a change at T2 except for the F5 component of resilience (spiritual influences). While not statistically significant, comparison of mean scores at both time points indicates a marginal increase for distress at T2 and a decrease in total resilience scores as well as for both positive and dysfunctional coping.

Table 3
Inter-correlation matrix for key variables at T1 and T2

Variables	Time	Psychological distress		Positive coping		Dysfunctional coping		Emotional intelligence		Resilience	
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2
Psychological distress		1	1								
Positive coping		.10	.34**	1	1						
Dysfunctional coping		.13	.46**	.63**	.77**	1	1				
Emotional intelligence		.01	.24	.35**	.51**	.08	.45**	1	1		
Resilience		-.03	.40**	.62**	.64**	.45**	.57**	.61**	.71**	1	1

* $p < .05$, ** $p < .01$

Correlations among variables

Pearson's correlation coefficients were computed for the key variables of the study and are displayed in Table 3. All correlations were positive in nature and it was seen that the strength of the correlations increased at T2 when compared to the T1 coefficients.

Moderation analyses

A moderator variable (M) is one that alters the strength of the causal relationship between two other variables (X and Y) and moderator effects are indicated by the interaction of X and M in explaining Y (Baron & Kenny, 1986). We were interested in two potential moderator variables in this study. First, if resilience moderated the relationship between distress and positive coping. The moderating variable in this model was the interaction (product) between the distress and resilience scores. Second, if EI played a moderating role in influencing the path between distress and positive coping. The moderating variable in this case was computed as the interaction (product) between the distress and EI scores. Standardised (z) scores for all variables at T2 were used in these analyses. Hierarchical multiple regression analyses were used.

We first looked at the possible moderating effect of resilience in influencing the relationship between distress and positive coping. In the first step, two variables were included in the regression model: distress and resilience. These variables accounted for a significant amount of variance in positive coping, $R^2 = .41$, $F_{(2, 61)} = 21.51$, $p < .001$. Next an interaction term between distress and resilience was created by multiplying their scores and this interaction term was added to the regression model. This model was also significant, $R^2 = .47$, $F_{(3, 60)} = 18.03$, $p < .001$. The interaction term accounted for a significant proportion of the variance in positive coping, $\Delta R^2 = .06$, $\Delta F_{(3, 60)} = 6.90$, $p < .05$, $\beta = -1.15$, $t_{(60)} = -2.62$, $p < .05$. Thus, resilience interacts with the experience of distress to influence positive coping.

The next hierarchical multiple regression analysis was conducted to ascertain if EI moderated the relationship between distress and positive coping. In the first step, distress and EI scores (independent variables) were entered as predictors of positive coping (dependent variable). Both independent variables accounted for a significant amount of variance in positive coping, $R^2 = .31$, $F_{(2, 61)} = 13.99$, $p < .001$. Next an interaction term between distress and EI was created and introduced into the regression model. This model was also significant, $R^2 = .32$, $F_{(3, 60)} = 9.61$, $p < .001$. However, as indicated by the change statistics, the interaction term did not account for a significant proportion of the variance in positive coping, $\Delta R^2 = .01$, $\Delta F_{(3, 60)} = .89$, $p > .05$, $\beta = -.12$, $t_{(60)} = -.94$, $p > .05$. This indicates that EI did not moderate the relationship between distress experienced and the use of positive coping strategies.

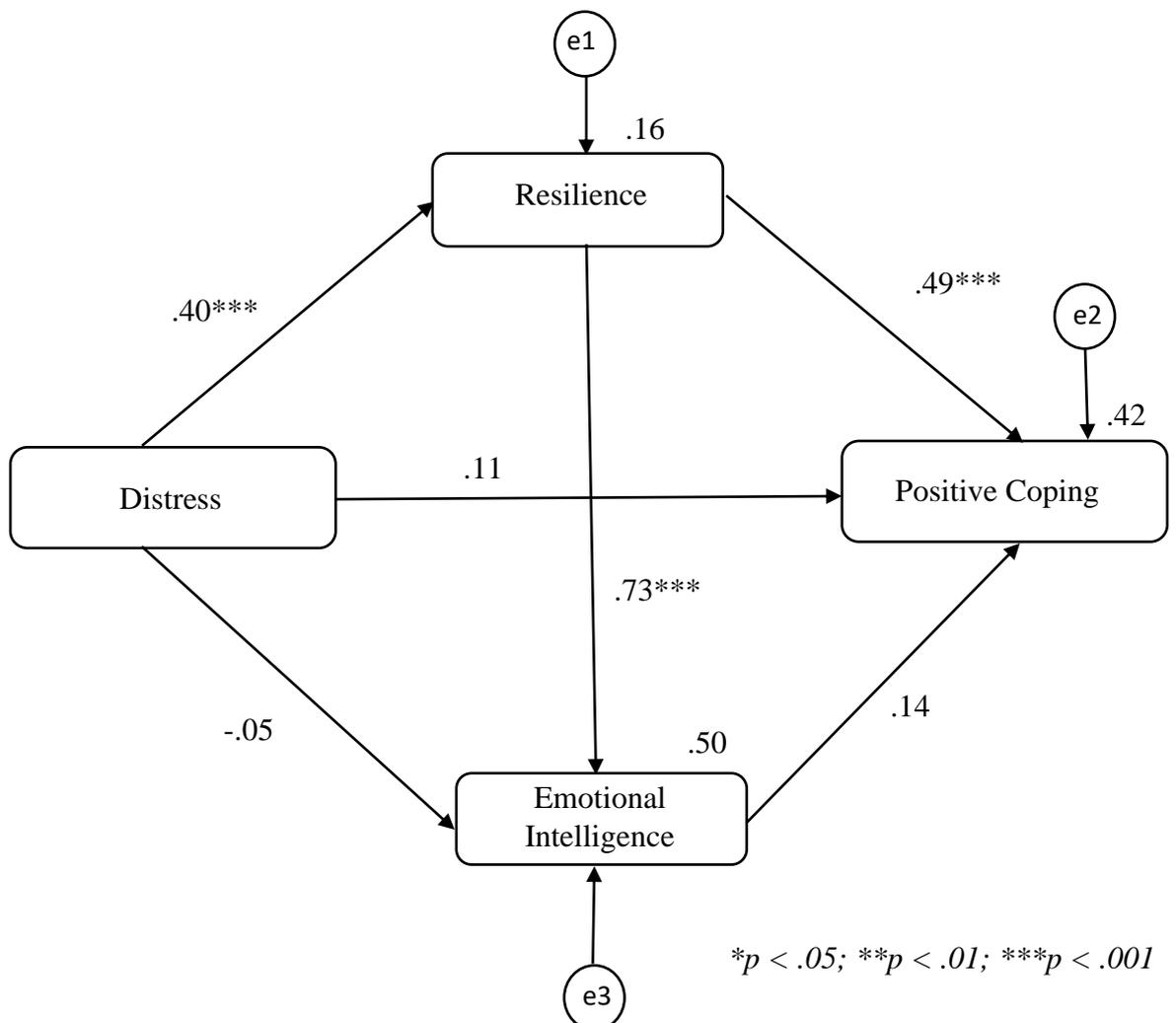


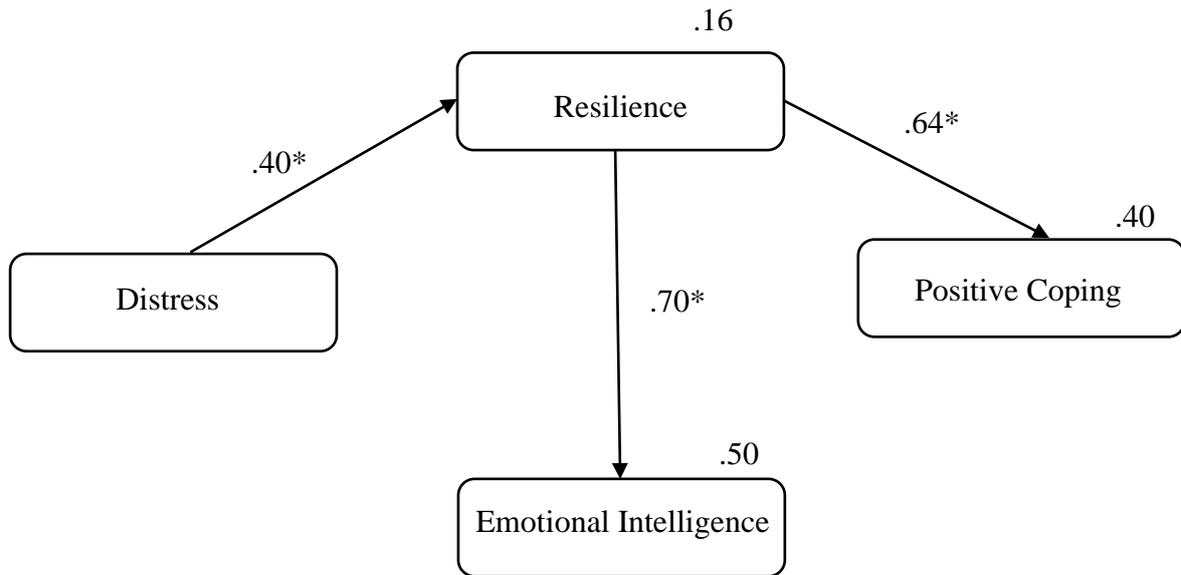
Figure 1: Path Diagram Showing Initial Conceptual Model

Mediation analyses

In a mediation model, the independent variable does not directly influence the dependent variable but does so through a third intervening variable. We were interested in understanding if distress influences positive coping through resilience and/or EI. A multiple mediation model incorporating both these potentially intervening variables was generated and path analysis conducted using SPSS AMOS (Figure 1). The bootstrapping procedure was applied (with 2000 repetitions and establishing a confidence interval of 95%).

Bootstrapping is a re-sampling procedure whereby multiple sub-samples of the same size as the original sample are drawn randomly to provide data for empirical investigation and generates robust estimates and indices of fit that are not affected by a lack of normality in the residual distribution (Byrne, 2010). This method calculates the empirical distribution for the statistics using random sampling with replacement that. This model clearly indicated that EI did not play a mediating role in the path between distress and positive coping as indicated by the paths from distress to positive coping via EI ($\beta = -.05$; $p > .05$ and $\beta = .14$; $p > .05$). It also established that there was no direct effect of distress on positive coping ($\beta = .11$; $p > .05$).

However, there were two significant paths that were clearly identified. First the significant indirect influence of distress exerted upon positive coping through the role of the intervening variable: resilience ($\beta = .40$; $p < .001$ and $\beta = .49$; $p < .001$). Also, the direct influence of resilience on EI was highly significant ($\beta = .73$; $p < .001$). However, this model did not demonstrate robust indices for the model fit and had to be modified.



* $p < .001$

Indices of Model Fit: $\chi^2 = 2.31$, $p > .05$; GFI = .98; NFI = .97; CFI = 1; RFI = .95; RMSEA = $< .001$

Figure 2: Modified Path Diagram Showing Significant Pathways of Influence

This was done by removing all pathways that were not significant. We hence removed the direct path from distress to positive coping and the indirect path from distress to positive coping via EI. The final model (figure 2) that emerged provided very good indices of model fit as mentioned below figure 2. In conclusion based on this model, resilience exerted a direct influence on the manifestation of EI ($\beta = .70$; $p < .001$) and explained 50% of its variance ($R^2 = .50$). Resilience also completely mediated the relationship between distress experienced and the use of positive coping as seen from the paths from distress to resilience ($\beta = .40$; $p < .001$) and then to positive coping ($\beta = .64$; $p < .001$).

Discussion

One of the major concerns of this study was to assess whether the key variables changed over time from T1 to T2. Only a marginal increase in overall distress scores were

seen at the verge of course completion, and this was not statistically significant. It is possible that this marginal increase could be attributed to career concerns and employment related worries in our student sample at this point. We did not find significantly elevated distress scores for students at the point of course entry and this finding is not in agreement with several studies done earlier. A cross-sectional study of undergraduate students from India shows that new entrants to the course and students in the final year of their degree experience more stress and anxiety when compared to students in the second year (Stanley & Mettilda, 2016). It has been noted that many first-year college students are prone to experiencing greater anxiety, stress, and psychological distress owing to the significant transition that it entails (Bayram & Bilgel, 2008). The results of an Australian study of full-time female students, studying a nutrition-related bachelor's degree have indicated an increasing trend of stress over their first semester (Pitt, Oprescu, Tapia & Gray, 2018).

We also did not find statistically significant change in the overall resilience score at T2 though there was a drop in mean scores. The data indicates that resilience is not stable or static but may change over time as a function of one's interaction with the environment (Kim-Cohen & Turkewitz, 2012). Longitudinal studies that have investigated change in EI in undergraduate students have come up with inconsistent results. For example, a longitudinal study of Australian students in a pre-registration nursing programme indicates an increase in EI scores over the three-year period of their degree (Foster, Fethney, McKenzie, Fisher, Harkness & Kozlowski, 2017). On the other hand, other studies have recorded a decline in EI scores. For example, another Australian investigation with students of therapy courses during clinical placements has reported a decline in EI scores in about one-third of their sample (Gribble, Ladyshevsky & Parsons, 2016). Similar observations have also been made for students in the USA for those from a traditional three-year physical therapy course (Larin, Wessel & Williams, 2009) and in undergraduate medical students (Stratton, Saunders &

Elam, 2008). The current study has also found a significant decline in EI scores over 3 years. Thus, EI as a concept appears to be dynamic and transient in nature that is influenced by contextual factors.

An important concern in this study was to identify the role of resilience and EI in terms of the influence exerted by distress on positive coping. The moderation and mediation analyses clearly rejected the role of EI in this regard but identified resilience as being a crucial variable in influencing the effect of distress on positive coping, both as a moderator as well as a mediator. This is in line with earlier findings that resilience has a buffering influence on daily stressors leading to a reduction of psychological discomfort (McKay, Skues, & Williams, 2018) and that resilience is a significant predictor of coping in students in higher education (McLafferty, Mallet & McCauley, 2012). Evidence from a systematic review provides mixed support for the stress-buffering effect of EI and contends that EI relates to faster recovery from acute stress (Lea, Davis, Mahoney & Qualter, 2019). A study of women social workers in India has also established the role of resilience as an important moderator of stress (Stanley, Mettilda, & Arumugam, 2018). Academic stress has been identified to be a significant contributor to resilience in social work students (Wilks, 2008). The moderating role of resilience on burnout and psychological health in a Spanish sample of nurses has been reported (García-Izquierdo, Meseguer de Pedro, Ríos-Risquez & Sánchez, 2018). A significant statistical correlation between resilience factors and mental health of college students has also been evidenced (Hartley, 2013).

Resilience was also extracted as a significant variable that contributes to the overall manifestation of EI in our analyses. Earlier studies have reported a significant positive effect of EI on resilience (Magnano, Craparo & Paolillo, 2016). Thus, it appears that both resilience and EI have a mutually reinforcing effect, each contributing and positively influencing the other. Our results do not establish a significant direct link between distress and EI and

indicate that in line with previous findings (Sarrionandia, Ramos-Díaz & Fernández-Lasarte, 2018), EI and perceived distress are connected via the pathway of resilience. This agrees with the observation that EI predicts and enhances resilience (Schneider, Lyons & Khazon, 2013), which in turn influences positive coping. The positive relationship seen between resilience and positive coping in this study, substantiates previous research that task or problem focused and emotion focused coping strategies were predominantly used by students for coping with stress (Campbell-Sills, Cohen & Stein, 2006). An earlier study of undergraduate students from India establishes the role of both problem and emotion focused coping strategies as being important predictors of resilience (Stanley & Mettilda, 2020b).

Limitations

A major limitation of this study has been the nature of the sample chosen which precluded the possibility of gender-based comparisons relating to our variables of interest. There is evidence that gender impacts stress (Karaman & Watson, 2017), EI (Bryant & Malone, 2015) and is related to resilience levels (Anasuri & Anthony, 2018).

There is also evidence that personality factors influence the variables in this study such as psychological distress (Guidi, Clementi & Grandi, 2013), resilience (Campbell-Sills et al., 2006), EI (Dhani & Sharma, 2017) and coping (Carver & Connor-Smith, 2010). We have however not considered personality factors in relation to our variables of interest.

The literature also indicates the influence of other variables such as self-efficacy (Cassidy, 2015) and social support on resilience (Wilks, 2008), perceived stress (Farrell & Langrehr, 2017) and coping (Vungkhanching, Tonsing & Tonsing, 2017). A consideration of these variables was beyond the scope of this study.

Another limitation could be associated with the use of self-reported measures in this study as self-reports have been criticized for the tendency to elicit socially desirable responses.

The findings of this study have a limited scope for generalisation given that a single site was involved for data collection and the different kind of stressors impinging upon higher education students in India and elsewhere.

Despite these limitations this study adds to the literature on the key variables studied in terms of understanding their manifestation in students of higher education, particularly relating to the mediating and moderating influence of resilience. A noteworthy strength of this study is the use of a longitudinal design as against the predominant use of cross-sectional data found in the literature.

As this was a small sample study that included students from only two undergraduate degree programs, it would be beneficial for future studies to consider the use of larger student samples drawn from a wider array of academic disciplines. More complex models that include personality variables and other relevant variables such as social support would provide added insight into the complex ways that students perceive and cope with stress.

Conclusion

While stress is an inevitable aspect of student life, particularly in the current scenario of higher education, it is imperative to ensure that the student experience is not overwhelming and accompanied by deleterious outcomes. This study highlights the notion that measures to adequately and effectively deal with student stress can be enhanced by a focus on the development of resilience, EI and positive coping strategies. Further the interrelated nature of these variables logically leads to the contention that enhancing one would potentially influence the others in a positive manner.

The literature holds that attributes such as EI can be learned and developed (Brackett, Rivers, Reyes & Salovey, 2010). Chinaveh, Noriah & Salleh (2010) demonstrate how stress management can be learned and coping skills acquired through programs that focus on

aspects such as relaxation, positive thinking and assertiveness training, anger and anxiety management, goal setting and time management. A systematic review and meta-analysis of resilience training programmes and interventions indicates that interventions based on a combination of CBT and mindfulness techniques have a positive impact on individual resilience (Joyce, Shand, Tighe, Laurent, Bryant & Harvey, 2018; Hodzic, Scharfen, Ripoll, Holling, & Zenasni, 2018). There is evidence for the beneficial effects of conducting resilience workshops (Rogers, 2016) and for the efficacy of EI programs (Kotsou, Mikolajczak, Heeren, Grégoire & Leys, 2018). Psychological workshops that focus on problems of interpersonal communication and relationships can be effective to improve EI of university students (Kuk, Guskowska & Gala-Kwiatkowska, 2019).

The onus is hence on institutions of higher education to ensure that appropriate training and intervention programs are developed and offered to students that focus beyond the development of academic competence. A range of effective evidence-based strategies are available that can be gainfully used to bolster resilience, enhance EI and develop strategies of positive coping and stress management in students.

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