



RESILIENCE AND POSITIVE MENTAL HEALTH AMONG COLLEGE STUDENTS ATTENDING PROFESSIONAL COURSES IN CHENGALPATTU DISTRICT -CROSS SECTIONAL STUDY

Psychiatry

K M Balaji
Kanagasabai

Post Graduate

T Siva Ilango*

Professor And HOD*Corresponding Author

S Sumithra Devi

Professor

S Usaid

Associate Professor

B P Uma Gayathri

Assistant Proffssor

ABSTRACT

BACKGROUND: Resilience and positive mental health are some of the important elements that constitute psychological well-being of students enrolled in professional education programs. Academic pressures as well as competition might affect the capability to cope with various situations and contribute to life satisfaction and mental well-being of professional students. The main purpose of the current research was to evaluate resilience, life satisfaction and positive mental health of students enrolled in professional programs. **METHODOLOGY:** A cross-sectional survey was carried out on 440 participants pursuing their studies in medicine, dentistry and engineering disciplines in the Chengalpattu district of Tamil Nadu. The information was collected using an online structured questionnaire which comprised the BRS, SWLS and PMH scales. Descriptive statistics were represented by mean $\pm$ SD and frequency distribution. Inferential statistics such as Chi-square test, Pearson correlation, independent t-test and one-way analysis of variance (ANOVA) were used. Multiple regression analysis was done to predict the variables that affect positive mental health. A p-value < 0.05 was taken as significant. **RESULTS:** Socio-demographic characteristics exhibited significant correlations with psychological variables. Resilience was positively correlated with life satisfaction and mental health. Regression analysis revealed that both life satisfaction and resilience are predictors of good mental health. **CONCLUSION:** Enhancing psychological resilience and fostering life satisfaction may assist in achieving better psychological health for professional students thus ensuring sustained academic success.

KEYWORDS

Resilience, Psychological, Mental Health, Life Satisfaction, Psychological Well-being

INTRODUCTION:

The importance of mental well-being in overall health cannot be overstated since it impacts one's capacity to deal with stressful situations, perform effectively at work and make meaningful contributions to society [1]. A person's mental well-being entails more than just an absence of psychological disorders it includes emotional well-being, happiness, resilience and effective functioning in everyday life [2]. The idea that the state of mental well-being exists on a spectrum from languishing to flourishing is important because it underscores the need for interventions that promote psychological well-being apart from addressing mental illnesses [3].

Resilience refers to the capacity of adapting to difficult conditions or stressful situations by coping positively. Resilience is seen as a key factor in determining psychological well-being [4]. Those who are more resilient are more prone to adapt coping mechanisms and manage their emotions such that they can retain their mental stability in adverse situations [5]. Studies have shown that resilience acts as a buffer against psychological problems including depression and anxiety [6].

University students especially those pursuing careers in professions like medicine, dentistry and engineering are subject to many academic stresses, demands for high achievement and competitiveness [7]. These stressors could impact students psychological well-being adversely making them more susceptible to psychological disorders, exhaustion and poor academic results [8]. There are several documented cases where the prevalence rates of stress, anxiety and depression were found to be exceptionally high among university students worldwide emphasizing the critical importance of finding protective factors [9,10].

Professional students encounter various difficulties such as difficult syllabi, prolonged studying periods, clinical obligations and regular exams which might contribute to the exhaustion of their emotions and dissatisfaction in life [11]. Several studies on medical and dental students reveal that heightened stress is linked to the inefficiency of their coping strategies, low resilience and low quality of life [12,13]. Hence, enhancing the students resilience and mental health becomes an important approach in achieving academic and psychological success [14].

Having positive mental health is said to be linked with higher life

satisfaction better relationships with other people and good performance in educational settings [15]. Two of the most popular standardized instruments for measuring well-being and psychological functioning are the Satisfaction With Life Scale and the Positive Mental Health Scale [16,17]. They make it possible to measure well-being and study the correlation between resilience and positive outcomes of mental well-being [18].

Several studies carried out during and after the emergence of the coronavirus pandemic have highlighted the relevance of resilience as a factor protecting against psychological distress among students [19]. The outbreak created extra stress for students both academically and socially thereby affecting their psychological well-being [20]. Global research results have shown that students with high levels of resilience are capable of dealing with difficulties in academic and emotional life under stress [21].

In the case of India increased competition in academia along with expectations from society are factors that have led to higher levels of stress amongst the students who are studying in various professional disciplines [22]. Earlier research in the Indian setting suggested high prevalence of psychological morbidity amongst the medical and engineering students suggesting the requirement of mental health intervention programs [23,24]. While much literature is available regarding the problem of mental well-being, very few studies focus on the concept of resilience [25].

Knowledge on resilience and psychological wellbeing of professional students is necessary when creating effective programs for supporting the student population in higher education institutions [26]. Establishing different levels of resilience and wellbeing among diverse year groups and fields of study could help to design more effective interventions based on the students special characteristics [27]. These interventions might incorporate resilience building activities, stress management courses and institutional support services promoting wellbeing and academic achievements [28].

Thus the current study intends to measure resilience and positive mental health of students pursuing professional courses in the district of Chengalpattu and will make comparisons between various academic fields and academic years with regards to these two variables. The results of the current study will add to the existing

literature in this field, and help in formulating effective mental health programs for students pursuing professional studies.

METHODOLOGY:

Study Design and Setting: The current cross-sectional study was done on the students studying in professional courses in the Karpaga Vinayaga Institute of Medical Sciences and Research Center and associated professional colleges located in Chengalpattu District, Tamil Nadu State, India. The study was carried out for a duration of six months. The purpose of the study was to investigate the level of resilience and positive psychological well-being among the students studying in professional courses and to compare between various streams and academic years.

The study population comprised students enrolled in professional education courses such as medicine, dentistry and engineering at institutions under the Karpaga Vinayaga Educational Group in Chengalpattu District, Tamil Nadu. Students aged 18 years and older who regularly attended classes were included in the study population. Students who provided their informed consent and participated in the study voluntarily through completing the questionnaire were included in the study. Adequate comprehension of the language used in the questionnaire and having access to digital devices were other important criteria required to participate in the study. Incomplete responses or partially answered questionnaires were automatically excluded from further data analyses. Moreover students who refused to participate or withdrew their consent to take part in the study at any point in time were excluded from data analysis along with those who gave inconsistent or duplicate responses to the questionnaire. Furthermore participants with past medical records showing a history of severe psychiatric illness or those receiving intensive psychiatric treatment were also excluded from the study because they could pose threats to the reliability and validity of the results.

The sample size for the present study was calculated using the standard formula for cross-sectional studies $n = Z^2 \times p \times q / d^2$, where $Z = 1.96$ corresponding to a 95% confidence level, $p = 0.5$ as the assumed prevalence due to the absence of prior local data on resilience and positive mental health among professional students $q = 1 - p$ and $d = 0.05$ representing the acceptable margin of error. Based on this calculation, the minimum required sample size was determined to be 384 participants. To account for possible non-response, incomplete submissions and data loss an additional margin of participants was included increasing the sample size to 438 which was further rounded off to 440 participants to enhance statistical validity and representativeness. A universal sampling method was adopted for participant selection wherein all eligible students who satisfied the inclusion criteria during the study period were invited to participate. Data were collected using an online survey platform and the questionnaire link was distributed through institutional communication channels such as official student groups and digital platforms to maximize participation and ensure adequate coverage of students across different professional courses and academic years.

Study Tools and Instruments: The data collection process was carried out using a structured self-administered questionnaire that consisted of four main sections aimed at collecting data concerning the respondents sociodemographic and psychological well-being. The first section involved a pre-developed sociodemographic profile that required the respondent to provide information concerning their age, gender, academic course, academic year and any other related information. This would enable the researcher to conduct subgroup analysis based on demographic characteristics. The second part of the data collection process involved the use of the BRS scale. It is important to note that the BRS is a standardized tool used to measure the resilience of a person in dealing with adversities and stressors. In this case the questionnaire contained six questions that were rated from one to five using the Likert scale. The higher the score the more resilient the participant is to deal with stressful conditions. The third section involved the SWLS scale. As mentioned above the SWLS scale consists of five questions used to gauge the level of satisfaction that an individual has about their life. Lastly the PMH scale was used in evaluating the positive mental health status of the participants.

Data were collected using an online survey distributed through digital platforms such as email and institutional messaging applications to ensure wide accessibility among eligible participants. The questionnaire link included a detailed participant information sheet

explaining the objectives and significance of the study along with an informed consent form that participants were required to acknowledge before proceeding to complete the survey. The average time required to complete the questionnaire was approximately 20–30 minutes. Confidentiality of participant information was strictly maintained throughout the study and no personal identifiers such as names or registration numbers were collected to ensure anonymity. Completed responses were reviewed for completeness and only fully completed questionnaires were included in the final analysis. The collected data were systematically entered into Microsoft Excel and subsequently exported for statistical analysis using the Statistical Package for the Social Sciences (SPSS) software version 28.0. Descriptive statistics were applied to summarize the study variables with continuous variables expressed as mean $\pm$ standard deviation and categorical variables presented as frequency and percentage. Inferential statistical tests were applied to assess differences and associations between variables, including the independent t-test to compare mean scores between two groups, one-way analysis of variance (ANOVA) to compare mean scores across multiple academic groups and the Chi-square test to evaluate associations between categorical variables. A p-value of less than 0.05 was considered statistically significant for all statistical tests.

Ethical Considerations: Ethical approval for the study was obtained from the Institutional Ethics Committee prior to commencement of the study. Participation in the study was voluntary and informed consent was obtained from all participants before data collection. Confidentiality and anonymity of the participants were maintained throughout the study period. All procedures were conducted in accordance with institutional ethical guidelines and standard research principles.

RESULTS:

Table 1: Socio-demographic Characteristics

Variable	Category	Frequency (n)	Percentage (%)
Gender	Male	198	45.0
	Female	242	55.0
Age Group (years)	18–20	176	40.0
	21–23	198	45.0
	>23	66	15.0
Course	Medical	158	35.9
	Dental	142	32.3
	Engineering	140	31.8

The number of respondents who took part in this research was 440. Out of those 242 (55.0%) were females while 198 (45.0%) were males which means there were slightly more females than males in the sample. The largest group represented in the sample was that aged between 21 and 23 years (198 people, 45.0%) followed by those between 18 and 20 years old (176 people, 40.0%). There were also 66 people (15.0%) older than 23 years. In terms of academic discipline the largest group was made up of students studying medicine (158 people, 35.9%), followed by those studying dentistry (142 people, 32.3%).

Table 2: Descriptive Statistics of Study Variables

Variable	Mean $\pm$ SD	Range
Resilience (BRS)	3.21 $\pm$ 0.64	1–5
Life Satisfaction (SWLS)	22.8 $\pm$ 5.6	5–35
Positive Mental Health	68.5 $\pm$ 12.4	0–100

Resilience mean score based on the application of Brief Resilience Scale (BRS) test is 3.21 $\pm$ 0.64. The score ranges between 1 to 5 showing that there is a moderate level of resilience among the respondents. Life satisfaction mean score based on the Satisfaction with Life Scale (SWLS) test is 22.8 $\pm$ 5.6. The scores ranges between 5 to 35 signifying that there is a moderate level of life satisfaction among the respondents. Positive mental health mean score is 68.5 $\pm$ 12.4 having a range of 0 to 100.

Table 3: Association between Variables (Chi-square Test)

Variable	Outcome	χ^2 (df)	p-value
Gender	Mental Health	4.21 (1)	0.040
Age Group	Resilience	6.72 (2)	0.035
Course	Mental Health	8.45 (2)	0.015

Note: Chi-square test applied; $p < 0.05$ considered statistically significant.

The relationship between the selected socio-demographic factors and

mental health outcomes was analysed with the help of the Chi-square test. The relationship between gender and mental health outcome was significant ($\chi^2 = 4.21$, $df = 1$, $p = 0.040$). Also a significant relationship was found between age and resilience ($\chi^2 = 6.72$, $df = 2$, $p = 0.035$). This implies that there is a difference in resilience in various age groups. Another significant relationship was established between the course of study and mental health outcomes ($\chi^2 = 8.45$, $df = 2$, $p = 0.015$).

Table 4: Correlation Matrix (Pearson r)

Variables	Resilience	Life Satisfaction	Mental Health
Resilience	1	0.36**	0.49**
Life Satisfaction	0.36**	1	0.52**
Mental Health	0.49**	0.52**	1

Note: ** $p < 0.01$ (Pearson correlation test).

The Pearson correlation test showed a moderate positive relationship between resilience and life satisfaction ($r = 0.36$, $p < 0.01$) which implies that resilience is positively correlated with life satisfaction. Moreover, there was a relatively stronger positive correlation between resilience and positive mental health ($r = 0.49$, $p < 0.01$) implying that resilience is significantly important for promoting mental health. Furthermore there was a relatively stronger positive correlation between life satisfaction and positive mental health ($r = 0.52$, $p < 0.01$) implying that life satisfaction is important for mental health.

Table 5: Multiple linear regression analysis predicting positive mental health

Predictor Variables	β (Standardized Coefficient)	Standard Error	t-value	p-value
Resilience	0.41	0.05	8.20	<0.001
Life Satisfaction	0.35	0.04	7.10	<0.001
Age	0.08	0.03	1.95	0.051
Gender (Female)	0.06	0.04	1.62	0.106

Model fit: $R^2 = 0.38$, Adjusted $R^2 = 0.37$, $F = 66.5$, $p < 0.001$

Note: All variables were entered simultaneously in the model.

The predictors of positive mental health were established using multiple linear regression analysis. The model was significant at the overall level ($F = 66.5$, $p < 0.001$) and could explain 38% of the variance in the scores for positive mental health ($R^2 = 0.38$, Adjusted $R^2 = 0.37$). In terms of the predictor variables resilience proved to be a significant predictor of positive mental health ($\beta = 0.41$, $t = 8.20$, $p < 0.001$) implying that high levels of resilience led to better mental well-being. Likewise life satisfaction also appeared to be a significant predictor ($\beta = 0.35$, $t = 7.10$, $p < 0.001$) which indicated that higher life satisfaction was linked to better mental well-being among students. Age had a marginal relationship with positive mental health ($\beta = 0.08$, $p = 0.051$) whereas there was no significant relationship found between gender and positive mental health ($\beta = 0.06$, $p = 0.106$).

DISCUSSION:

This current study assessed resilience, life satisfaction and positive mental health among the students pursuing their studies in professional courses. The results obtained from this research are of considerable significance for understanding the psychological well-being of professional students and in particular resilience and life satisfaction can be considered as significant factors contributing towards positive mental health.

The dominance of women respondents in this study is consistent with findings from various earlier studies performed among professional students whereby there has been an increase in the proportion of females enrolling into medical and allied professions [7,23]. Similarly Dyrbye et al. noted that there has been more female representation in health professional students possibly because of changes in the higher education gender dynamics [7]. Unlike some studies which reported that female respondents had more psychological distress compared to their counterparts the current study did not show a significant prediction of gender on mental well-being in regression analyses indicating that there are other more influential psychosocial determinants of good mental health [9,13].

Resilience at moderate levels that were found in the current study participants is similar to findings in other studies that have been done previously on medical and nursing students. In their work Tempiski et

al. found moderate resilience levels among medical students and noted the importance of resilience for protection against burnout and emotional exhaustion [11]. In the same way McAllister and McKinnon described resilience as a dynamic phenomenon that is developed with experience in dealing with academic demands [14]. The resilience levels found in this study can therefore be attributed to the adaptation mechanism adopted by the students in response to academic demands.

The findings regarding the levels of life satisfaction obtained from the present study were also consistent with those obtained from past research conducted among college students. Diener et al. showed that life satisfaction is a reliable indicator of well-being and correlates with positive emotions in young adults [15]. In addition Ryff stressed that psychological well-being comprises several dimensions including self-acceptance, life purpose and environmental control and that these factors lead to an increased sense of life satisfaction [17]. The results show that despite the pressure exerted by academic demands on college students they are still capable of deriving satisfaction from their life situations.

One of the notable findings in the current study is the association between age and the resilience scores. Such an association is in line with other past researches which showed a direct relationship between increased resilience and maturity and life experience [22]. For example Deb et al. highlighted that the older students had better coping mechanisms than the younger students probably because the former have more experience in dealing with both academic and personal situations [22]. However other studies conducted overseas indicated little to no difference in resilience scores among students based on their age [21]. Thus this can be attributed to the differences in the context of professional education.

The strong relationship between academic discipline and mental well-being as seen from this research agrees with previous results where academic burden and course-related stressors were identified to affect mental well-being. According to Kumar et al., dental students suffered from significant academic stress because of their clinical and patient-related commitments [12]. Likewise in accordance with the results by Iqbal et al., medical students were often stressed and depressed because of the academic pressure and test-related anxiety [13]. Nonetheless it should be emphasized that according to some researchers, engineering students suffer similar stresses because of the nature of their assignments and deadlines [24]. Consequently the difference in mental state among various academic disciplines can be explained by different factors within those courses.

The correlation results of the current research revealed that resilience, life satisfaction and positive psychological well-being share a positive relationship among each other, meaning that there is an interdependence between those psychological aspects. In support of these results Tugade and Fredrickson found that resilient people are better able to evoke positive emotions while undergoing stress and thus experience improved psychological functioning [5]. Also Keyes suggested that flourishing psychological well-being includes resilience and life satisfaction which leads to optimal psychological functioning [2]. It should be noted that the current study confirmed the close connection between life satisfaction and psychological well-being highlighting the importance of subjective well-being for psychological health.

Regression analysis found that resilience was the most influential variable among all others as the greatest predictor of positive mental health for the participants of the study. This finding is supported by numerous earlier studies, which identified resilience as one of the major protective factors of stress-related illnesses. For instance according to Smith et al., participants who had higher scores on the resilience test were able to overcome stress faster and stay psychologically balanced [6]. Another study by Steinhardt and Dolbier also showed that training aimed at fostering resilience led to positive mental health results for college students [26].

It was also found out that life satisfaction emerged as a significant predictor of mental wellness in the current research. The aforementioned statement is backed by other research findings which proved strong associations between life satisfaction and emotional wellness. As noted by Huppert and people with high levels of life satisfaction tend to exhibit psychological flourishing and minimal levels of emotional distress symptoms [18]. Likewise Reavley and

Jorm stressed that increasing the level of life satisfaction via the provision of a favorable environment both academically and socially could positively impact students' mental health [21].

It is also worth noting that age showed only a weak correlation with positive mental health when used in a regression model. Cao et al. have also discovered that despite the influence of age on coping mechanisms at times of stress, there is another set of psychological variables that have a greater effect on mental health outcomes [19]. It means that interventions focused on coping with challenges and strengthening resilience might be more efficient compared to interventions based only on demographic characteristics.

No statistically significant association was observed between gender and positive mental health in the regression analysis unlike what had been seen in previous researches about gender-based variations in stress. Beiter et al. found out that female students experienced more anxiety and depressive symptoms than male students [9]. Nevertheless studies also show that the significance of gender as a factor for differences in mental health conditions can be weakened through the inclusion of resilience and coping mechanisms as mediating variables in the equation [25]. This may be the reason why there were no significant differences based on gender in the current study.

Generally the results obtained from this research prove the necessity of having resilience and life satisfaction as key factors of good psychological well-being among professional students. Heath also came to similar conclusions stressing the significance of implementing resilience-focused programs aimed at enhancing mental health among nursing students [28]. At the same time Hamaideh and Abu Khait have found that resilience-oriented programs had been instrumental in ensuring higher professional satisfaction rates and minimizing emotional exhaustion among healthcare students [27].

The current research adds value to previous research by offering localized data collected in the district of Chengalpattu an area that has had very little attention paid to research involving resilience and positive mental health in professional students. The use of a sample composed of students studying different disciplines increases the applicability of results and offers further insight into student mental health trends. Such information can be used to create specific policies aimed at increasing resilience and improving the psychological state of students.

CONCLUSION:

It is critical to recognize the necessity for developing the psychological resources of professional students in order to ensure their prolonged engagement and emotional stability amidst challenging learning contexts. It is evident from the correlations identified in this study that the development of healthy coping skills and overall well-being of students ought to be a primary consideration for educational institutions. Institutions might consider incorporating mental health intervention practices such as resilience training and peer counselling as part of the academic process in order to ensure that students develop the necessary skills needed to cope with academic pressures and stresses. Early recognition of students at risk of experiencing negative effects in terms of psychological well-being could help improve their future performance and professional capabilities. Longitudinal research studies conducted over multiple institutions are advised.

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