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PSYCHOLOGICAL DISTRESS AND RESILIENCE OF MEDICAL STUDENTS

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ABSTRACT The Covid 19 pandemic has re-emphasized the requirement of a robust medical community, which can be accomplished primarily through their physical and mental well-being. The present study investigated the relationship between psychological distress and resilience of medical students and the possible effects (protective/detrimental) that sociodemographic variables such as gender and socioeconomic status may have on these study variables. For this purpose, 222 medical students were selected through convenient sampling method and assessed using Kessler's psychological distress scale and the resilience scale. The data obtained were analysed using nonparametric tests. A moderate, negative correlation was observed between psychological distress and resilience of medical students. Gender differences in the variables were revealed; males possess better resilience and lower psychological distress, while the reverse was true for females. Differences in psychological distress based on socioeconomic status showed those above average in socioeconomic status experiencing higher psychological distress and differing significantly from those below average and average in socioeconomic status. However, no significant differences were observed in resilience on the basis of socioeconomic status. The study lends credence to the importance of mental health awareness and the need for mental health care services to be easily accessible to medical students, to ameliorate their well-being.

KEYWORDS : Psychological Distress, Resilience, Medical Students, Kerala

INTRODUCTION

The medical field is closely associated with serving humanity. A recent survey by Worldometer shows the world population as 8 billion, with India being the most populous country (Worldometer, 2023). Moreover, the current doctor-population ratio in India is 1:1456, which is against the WHO recommendation of 1:1000 (Goel, 2020). This sheds light on the discrepancy and the possible disastrous consequences that may occur without an adept healthcare system comprising competent doctors. Also, the dynamic changes that are taking place in the individual's lifestyle, the climatic and other environmental changes, along with the evolution of new types of bacteria and viruses as seen in the recent Covid pandemic has re-emphasized the requirement for a robust medical community, which can be accomplished primarily by ensuring their physical and mental well-being. As prevention is better than cure, the mental health of our future doctors must be taken seriously into consideration.

Gupta et al. in 2017 reported that a considerable proportion of undergraduate medical students in India are found to be affected by depression, anxiety and stress. Both personal and professional stressors are increasingly recognized as sources of burnout and impairment in these individuals (Chen et al., 2018). This subjective, unpleasant emotional state that disturbs an individual's daily functioning upon encountering various life stressors is known as psychological distress. Dahlin et al. (2005) reported that high-stress levels lead to adverse effects on the cognitive functioning and learning capability of students in medical college, resulting in catastrophic consequences such as impaired academic performance, competency, and medical errors. The stress experienced by future doctors not only exists during their undergraduate study but may also continue into their house surgency (internship), post-graduate study period, and later into their professional life. This stress is also highly likely to reach burnout level (Roberts, 1991).

Resilience is the ability of an individual to bounce back and regain their normal functioning despite facing adversity. The protective factor model of resilience theorises the impact of stress on quality adaptation. In this model of resilience, there is an interaction between protection and risk factors, which reduces the probability of a negative outcome and moderates the effect of risk exposure (O'Leary, 2010). This indicates that the protective factors foster positive outcomes and healthy personality characteristics despite unfavourable or aversive life circumstances (Bonanno, 2004). Stress in a medical college is likely to predict later mental health problems, but students seldom seek help for their problems (Ekeberg et al., 2001). They are less likely to access care due to stigma and concerns regarding career progression. Thus, it is crucial to know the prevalence, causes, level of distress, and resilience of students, which affect not only their health but also that of society at a later point in time. The accumulating stress experienced by medical students is likely to add to the high morbidity and mortality rates associated with mental disturbances unless they can bounce back amid these adversities. A resilient medical student may have a better chance of overcoming the psychological distress that prevents them from reaching their full potential. This results in them being better able to handle the increasing demands of patients by efficiently applying the scientific knowledge acquired through their academic curriculum on issues concerning human health.

Furthermore, recent times have revealed a trend of girls outnumbering boys in securing admission to most medical courses in the country (Srivastava, 2013). However, fewer women practice medicine. Nagarajan (2016) has documented that women account for about 17 per cent of the allopathic doctors in India. Data show that women comprised 50.6% of medical college admissions in 2014-2015, reducing to a meagre one-third at PG and doctoral levels. An analysis of admission data from medical colleges in Kerala by Kuttichira et al. (2018) has revealed a progressive fall in the favourable sex ratio from undergraduate to super-speciality levels, leading to a loss of potential talent. Additionally, India is a diverse country with people coming from different levels of background, especially socio-economic status, and medicine is seen as one of the costliest professional courses in the country, with an average expenditure per student being around seventy-one thousand rupees (Sindwani, 2019). Though the nation prioritises providing children with access to higher education from all income groups, due to many known and unknown factors, there is an under-representation of students from below-average income strata. This dearth observed has led to the provision of 10 per cent reservation for economically weaker sections in the National Eligibility cum Entrance Test. This has emphasised the need to explore whether gender and socio-economic status have any significant role in psychological distress and resilience experienced by medical students.

Thus, the prevailing literature sheds light on the prevalence of distress in medical students. Though studies indicate a relationship between psychological distress and resilience in medical students, the concept remains unexplored to an extent in South India, especially in Kerala. India is a collectivistic community, and with the current increasing demands being placed on the health sector due to the after-effects of the pandemic, studies examining the effect of various psycho-social factors on the mental health of our future doctors are essential. Moreover, though the state of Kerala has won international acclamation for its sturdy healthcare system during the pandemic, the dearth of studies about the mental well-being of medical students in Kerala has prompted the investigators to revisit the topic to examine the relationship between psychological distress and resilience among medical students of Kerala and the effects of variables as, a) gender, b) socioeconomic status may have on their levels of psychological distress and resilience.

METHOD

Participants

The present study employed a correlation research design to determine the relationship between psychological distress and resilience of

medical students. The sample (N=222) consists of medical students drawn across various levels of gender and socioeconomic status through a convenient sampling method. The participants were limited to students aged 20-24 years, pursuing their bachelor's in medicine and surgery from government medical colleges in Kerala's central districts. Female medical students comprised 63.1% (140 students) of the sample, whereas the rest, 36.9% (82 students) were constituted by their male counterparts. Based on socio-economic status, medical students from average-income families constituted the majority of the sample, comprising 160 students (72.1%), followed by 55 students (24.8%) belonging to above-average-income families and lastly, 7 students (3.1%) belonging to below-average families. The data for the study were collected through an online medium through Google form, using the K10 Scale and R14 Scale.

The Kessler Psychological Distress Scale (K10), developed by Kessler et al. (2002) identifies varying levels of distress in individuals. It is a 10-item scale with 5-point Likert-type anchors ranging from All the time (5) to None of the time (1). The scale yields a minimum score of 10, indicating the lowest level of psychological distress, and a maximum score of 50, indicating the highest level. K10 has strong reliability with Cronbach's α equal to 0.88. The criterion validity of the scale is also found to be excellent.

The Resilience Scale (RS) was developed by Wagnild and Young (2009) to evaluate the levels of resilience in the general population. Its reduced version RS.14 consists of 14 items, each rated on a 7.point Likert scale, ranging from Strongly Disagree (1) to Strongly Agree (7). The scale yields a minimum score of 14 and a maximum score of 98. Low scores indicate low levels of resilience, and high scores indicate high resilience tendencies. The scale has good reliability, with Cronbach's α equal to 0.88. The construct and content validity of the resilience scale were also found to be satisfactory.

RESULTS

A percentage-wise analysis of the data revealed that around 60% of the sample showed the likelihood of developing a mental disorder. In comparison, only a meagre 24% of medical students reported possessing very high resilient tendencies.

As result obtained from the Shapiro-Wilks test was seen to violate normality distribution, the inferential analysis of the study was done using non-parametric tests such as Spearman's correlation, Mann-Whitney U Test and Kruskal-Wallis H Test.

Spearman's correlation was used to determine any significant relationship that existed between psychological distress and resilience of medical students. The test revealed a moderately negative correlation (ρ=-.358**) between psychological distress and resilience of medical students (Vide Table 1).

Table 1

		Psychological distress	Resilience
Psychological distress	Correlation Coefficient	1.000	-.358**
	Sig. (2 tailed)	.	.000

** Correlation is significant at 0.01 level (2 tailed)

Mann-Whitney U test analysed the difference based on gender in variables, viz., psychological distress and resilience. Result revealed significant difference in psychological distress between female and male (U=3554.500, p<0.01) medical students, with females reporting greater psychological distress (*M*=127.11) compared to male students (*M*=84.85). Also, significant difference in resilience between male and female (U=4429.000, p<0.01) medical students can be observed, with males possessing higher resilience (*M*=127.14) compared to female students (*M*=102.14) (Vide Table 2).

Table 2 *Gender Difference in Psychological Distress and Resilience of Medical Students*

	Gender	N	Mean Rank	Mann-Whitney U	Asymp. Sig. (2 tailed)
Psychological distress	Female Male	140 82	127.11 84.85	3554.500	.00
Resilience	Female	140	102.14	4429.000	.00
	Male	82	127.49		

For assessing differences in psychological distress and resilience based on socio-economic status, the sample were classified into three, levels of income, i.e., below-average (Upto Rs 2.5 lakhs pa), average (Above Rs 2.5 lakhs to Rs 8 lakhs pa) and above average (Above Rs 8 lakhs pa). Results of Kruskal Wallis H Test revealed significant difference in psychological distress of medical students based on socioeconomic status (H=7.368, p<0.05) (Vide Table 3).

Table 3 *Difference in Psychological Distress and Resilience of Medical Students Based on Socioeconomic Status*

	Socioeconomic Status	N	Mean Rank	Chi-Square	df	Asymp. Sig
Psychological distress	Above Average Average	55 160	129.25 107.03	7.368	2	.02
	Below Average	7	74.07			
Resilience	Above Average	55	111.19	2.863	2	.23
	Average	160	109.84			
	Below Average	7	151.79			

As Kruskal Wallis H test yielded a significant mean rank score for psychological distress, it was followed by post hoc test, viz., Dunn's test, to perform multiple pair-wise comparisons of the sub-groups. From the pairwise comparison, it can be seen that those above average in socioeconomic status has higher psychological distress and differ significantly (*M*=129.25, p<.05) from those below average (*M*=74.07) and average (*M*=107.03) in socioeconomic status. Also, a significant difference can be observed between medical students coming from both below-average and above-average economic classes, with the above-average being more inclined to experience psychological distress (*M*=129.25). When comparing the significant difference between medical students from both average and above-average economic classes, students from average economic classes are seen to be less vulnerable to psychological distress (*M*=107.03). Furthermore, no significant difference in psychological distress concerning average and below-average socioeconomic status can be observed.

DISCUSSION

The percentage analysis of the data obtained using Kessler Psychological Distress Scale (K10) and The Resilience scale (RS14) showed that more than half of the sample comprising medical students from the government colleges of central districts of Kerala show psychological distress, indicating the likelihood of developing mild to severe mental disorders, barring one-fourth of the sample which possessed very high resilient tendencies. This highlights the fact that the medical student population is a highly vulnerable population to the development of various mental health disorders. Hence, the mental health of future doctors must be addressed with utmost importance. Immediate attention is therefore warranted to help mitigate this issue. Furthermore, the pandemic scenario showed that a resilient health workforce is needed in the immediate future. The ability to bounce back from adverse and unprecedented situations must be a prerequisite characteristic of future doctors. Resilience can serve as a protective barrier against many risk factors, and since it is something that can be built upon and developed with time, engaging in resilience-building activities may help the students overcome the various problems they face presently and are likely to face in the future.

A moderately negative correlation between psychological distress and resilience of medical students indicates that as the resilience of the students increases, their tendency to experience psychological distress decreases. Resilient tendencies can hence be considered a protective factor against psychological distress. This result is consistent with the findings of Bacchi and Licinio (2017) that higher levels of resilience were associated with lower levels of distress (p< 0.001) in medical students. Halaas et al. (2019) observed that almost three-fourths of the medical students assessed reported mild to severe mental health issues, predominantly depression, with the main reason being their inability to cope. Also, more than 80% of the students remained undiagnosed with the issues. This sheds light on the need to assess the mental health of medical students and their ability to bounce back from adversities.

Males were seen to possess better resilience and lower psychological distress, while the reverse was true for females. Adaramola et al. (2020) reported that females are at higher risk of psychological distress when compared to males. Females are also seen to be more easily affected by external factors such as anxiety about the future, family problems, poor health status, uncertainties of present life, etc (Modai et al., 2001). Moreover, Erdogan et al. (2015) have documented that more

resilient tendencies in males with personal power, initiative, foresight, purpose in life, leadership and investigative characteristics predict better resilience. Another possible reason in favour of males may be that females are generally more emotional compared to males, so they could be profoundly affected further by experiencing adverse events. Thus, the finding underscores the negative correlation between psychological distress and resilience, which is in line with the findings of the researchers.

The result obtained from the Kruskal-Wallis H Test, followed by post hoc Dunn's test on rejection of null hypothesis, showed significant differences in psychological distress based on socioeconomic status, with those above average in socioeconomic status experiencing higher psychological distress and differing significantly from those below average and average in socioeconomic status. However, no significant differences were observed in resilience based on socioeconomic status. This observation is consistent with many studies reported over time by various researchers. Hamer et al. (2013) and Klasen et al. (2019) have attested that socioeconomic status can play a role in the psychological distress experienced by students. However, the finding is in contradiction with the study by Hamer et al. (2013), which suggested that people in low socioeconomic circumstances are more vulnerable to the adverse effects of psychological distress. The contradictory findings in the present study may be attributed to reasons such as prestige issues and the consequent parental pressure. Another possible reason is that these students must keep up their social image and are therefore put under pressure to set unrealistically high goals in life. Also, Michael et al. (2019) observed a direct effect of SES on resilience and an indirect effect of SES on resilience through the relationship of both variables with reserve-building activities. However, from the present study's findings, there is no significant difference in resilience based on socioeconomic status among medical students. Further analysis is required to analyse this discrepancy.

CONCLUSION

The present study outlines possible associations between psychological distress and resilience among medical students and how these variables affect socio-demographic profiles such as gender and socioeconomic status. The study identified medical students as a vulnerable population to mental disorders. This finding has lent credence to the existing literature that endorses the existence of mental health issues among medical students. The study highlighted the negative correlation between psychological distress and resilience of medical students. It was seen that as resilient tendencies decrease in the students, their psychological distress increases, which is an indicator that resilience may serve as a buffering agent against adverse mental health issues.

Additionally, the study revealed that females experienced more psychological distress and lowered resilience, with the reverse being true for males. Thompson et al. (2016) suggested that gender-specific interventions, as well as interventions that promote approach coping style along with proper social support, can help both female and male students to enhance their mental well-being. However, the development of these interventions needs to be a multidimensional approach that promotes care-taking behaviours and encourages institutional cultural change that enables students to partake in these resiliency strategies.

The study also reported that medical students from above-average families were found to have more psychological distress than those from average families. Students belonging to below-average families were seen to be the least vulnerable. However, the resilient tendencies of the students were not affected by their socioeconomic status. Since socioeconomic status is an element that is outside their control, the students could be trained in basic life skills such as emotional management skills, intrapersonal reflective skills, academic and job skills, planning skills, life skills, problem-solving skills, etc., to help develop healthy personality characteristics despite unfavourable or aversive life circumstances that may seem to hold them back.

The study also sheds light on the significance of mental health education and the need for mental health care services to be easily accessible to medical students. Educational institutes must recognise the students' difficulties and implement interventions to support and ensure their well-being during the academic training period, which will help build a competent health workforce in the immediate future.

To conclude, the study's findings have added to the scientific literature on psychological distress and resilience, and future studies could investigate the role of any mediating or moderating variable in this relationship. Longitudinal studies are desirable for capturing changes in psychological distress and resilience within the students with time. Also, the present study can be done on a larger sample using more rigorous statistical procedures for better generalisation. It can extend to other branches of medicine, such as Ayurveda, Homeopathy, etc.

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