TYPE D PERSONALITY TRAIT AND RESILIENCE AMONG MEDICAL STUDENTS A SURVEY AT A PRIVATE UNIVERSITY IN ISLAMABAD

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ABSTRACT

Objectives:

1) To determine frequency of Type D Personality in undergraduate medical students.

2) To evaluate the Resilience levels in undergraduate medical students.

3) To determine any association between Type D Personality and Resilience.

Design: Cross-sectional study

Place & duration of study: The study was conducted at an undergraduate medical institution in Islamabad Pakistan, from March 2022 to October 2022.

Materials and Methods: A total of 385 undergraduate medical students were recruited through non-probability convenience sampling techniques, to determine Type D Personality and level of resilience, through questionnaires which included the DS14 and BRS-6 scales. Informed consent of the respondents was taken. Using SPSS 21, Descriptive Statistics were applied and results were displayed as frequencies and tables. Inferential statistics like t test and Chi squared test were applied, and associations of Type D personality and Resilience levels were calculated using Pearson's Correlation.

Results: Out of all the respondents 125 were males (32.5%) and 260 were female (67.5%) Frequency of Type D personality was calculated to be 211 (54.8%). Frequencies for Resilience were 141 (36.6%), 223 (57.9%), and 21 (5.5%) for Low, Normal and High Resilience categories respectively. A negative correlation was found between both subsets of Type D Personality and Resilience, with r= -0.380 (sig at 0.0001) between Negative Affectivity and Resilience scores, and r=-0.193 (sig at 0.0001) between Social Inhibition and Resilience scores, using Pearson's Correlation.

Conclusion: There is an alarmingly high frequency of Type D personality in undergraduate students at the university. More than a third of the respondents had Low Resilience. Furthermore, there is negative correlation between Type D Personality, and levels of Resilience, i.e. students with Type D personality have been found to have lower levels of Resilience.

Keywords: Type D personality, Resilience, BRS, Medical students, Undergraduate Students.

INTRODUCTION

In medical psychology, Type D personality is a concept used to define the collective tendency towards two stable personality traits, negative affectivity and social inhibition (Denollet and Gillebert, 1996). Negative affectivity refers to an increased propensity towards negative emotions such as sadness, worry, irritability etc. while social inhibition is the suppression of such emotions in society, for fear of how others might react. This produces a stable construct, where social inhibition fuels the tendency for negative emotions (Denollet and Pedersen, 2005).

Past studies on Type D Personality have focused on its role in patients with heart disease. A study in Rawalpindi gave a prevalence of 71% in heart disease patients, compared to a 33% prevalence in the control group (Saeed and Niazi, 2011). An Indian study also gave a significantly high proportion of Type D Personality individuals in survivors of Acute MI

(Manoj and Joseph, 2020). Not only does Type D Personality show a high prevalence in these conditions, but it is also shown to produce negative health outcomes and prognoses in such patients. (Kupper and Denollet, 2018).

Studies done on medical students too, have shown a high prevalence of Type D Personality compared to the 20-24% prevalence seen in the general population (Borkeles and Kaiseler, 2018). An Indian study on undergraduate medical students gave a prevalence of 31% for Type D Personality, which is comparable to prevalence in heart disease patients (20-50%) (Gupta and Basak, 2013). High prevalence was also seen in a group of Turkish students (39.6%) and in a group of Belgian and Lithuanian students (31.6%) (Lapyte and Lussier, 2016).

Resilience, on the other hand, refers to an individual's power to overcome a difficult situation and to recover successfully from it (Smith and Dalen, 2018). It can also be thought of as a more dynamic process that involves better adaptation and personal growth for individuals as they move through life (Dias and Sousa, 2015). Resilient individuals have an optimistic outlook on the future, use different experiences and criticism for positive growth, are aware of their emotions and their personal qualities, and develop closer relationships with other people (Garmezy, 1991).

Previous research on Resilience has typically involved under-stress groups in society, such as children who have undergone traumatic life experiences, or patients of chronic diseases (Kim and Lim, 2019). In recent years, students, particularly medical students, have been a focus of these studies. A recent Pakistani study showed a low Resilience level among undergraduate medical students (Haider and Ahmed, 2022). Similar findings were observed in a group of American dental students, as well as in a group of Indonesian Dental students (Saki and Putera, 2021).

The relationship between Type D Personality and Resilience has also been the subject of several studies. A research among nursing students in Europe showed a negative correlation between Type D Personality trait and Resilience (Skodova and Banovcinova, 2018), while another study done on ICU nurses in South Korea gave a similar negative correlation (Cho and Kang 2017).

The rationale of this study was to find the frequency of Type D personality and Resilience levels in undergraduate medical students, and to check for any association that may exist between the two factors. As very few studies had been done on either Type D personality or Resilience in Pakistan, and no such research had been done on students, we attempted to fill this knowledge deficit. Eventually, we hope to use this information to counsel individuals with Type D personality trait and low resilience, and help them deal with life stresses in better and more efficient ways.

METHODS

Study design: The study design is cross-sectional

Sample Size: The prevalence was taken to be 50%. The margin of error was taken 5% with confidence interval 95%. By using WHO sample size calculator, the sample size computed came out to be 385.

Sampling Technique: Non-Probability convenience Sampling technique.

Inclusion Criteria:

Study participants satisfying the following criteria were invited to participate in the study.

- Undergraduate students of Medicine, Dentistry, Physiotherapy and Nursing at the institution from all semesters.

Exclusion Criteria:

Following study participants were excluded from the study

- Individuals with any previously diagnosed psychiatric illnesses or taking any

prescription medicine for that.

Type D personality: Type D personality was assessed using the DS14 scale (Denollet, 2005).

DS14: It is a brief, psychometrically sound measure of Negative Affectivity and Social Inhibition consisting of 14 questions determining the levels of social inhibition and negative affectivity. Each question was answered on a 5-point Likert scale ranging from 0 (No) to 4 (Yes); if the score of both domains was 10 or higher, the respondent was classified as having Type D personality.

Type	Scoring
Type D	Both NA and SI subscores ≥ 10
Non type D	Both NA and SI subscores <10

Resilience: Resilience was measured using the Brief Resilience Scale (Smith and Dallen, 2008).

BRS: This was used to determine the level of resilience in the respondents. The questions 1, 3, and 5 are positively worded, in the scale while 2, 4, and 6 are negatively worded. The BRS is scored by reverse coding items 2, 4, and 6 and finding the mean of the six items. The higher the value the more Resilient the respondent is.

Type	Scoring
Low Resilience	1.00-2.99
Normal Resilience	3.00-4.30
High Resilience	4.31-5.00

Data collection procedure: Data was collected partly through Google forms questionnaire and partly through self-administered forms.

Data Analysis Plan:

Data was entered and analyzed using SPSS version 21 for Windows. Categorical data (i.e. age, marital status, education level, etc) is presented as frequency & percentage. Quantitative variables (i.e Resilience, DS14 score etc.) are presented as means and standard deviation.

Ethical considerations:

Informed consent was taken from all the participants and the participants were allowed to withdraw from the study at any stage of the research. Approval was taken from the Ethical Review Committee of the institution prior to the study.

RESULTS

Total of 385 students participated in our research. Mean age of participants was 21.68 years (s.d. 2.73). Majority of respondents, female, and medical students. Demographic characteristics and their analysis is given in Table 1.

Characteristics	Categories	Frequency (%)	Association with Type D Personality (p-value)	Association with BRS Categories (p-value)
Gender	Male	32.5%	0.022**	0.215
	Female	67.5%		
Age (Yrs)	17-21	51.9%	0.040**	0.916

	>21	48.1%		
Program	Medicine	65.5%	0.511	0.931
	Dentistry	10.9%		
	Physiotherapy	16.4%		
	Nursing	7.3%		
BMI* (kg/m^2)	Underweight (<18.5)	18.6%	0.472	0.563
	Normal weight (18.5-24.9)	66.0%		
	Overweight (25.0-29.9)	10.7%		
	Obese (>30.0)	4.7%		
Residence	Urban	87.3%	0.126	0.874
	Rural	12.7%		
Boarding Status	Boarder	36.1%	0.671	0.510
	Non-Boarder	63.9%		
Family Type	Nuclear	80.8%	0.299	0.687
	Joint	19.2%		
Smoking	Smoker	94.8%	0.632	0.877
	Non-smoker	5.2%		

Table 1: Descriptive Analysis of Demographic variables, and associations with Type D Personality and Resilience. P-value was calculated using Chi-squared test. Significant results have been flagged (**). BMI= Body Mass Index.

Frequency of Type D personality was 54.8%. Frequencies for Resilience were 141 (36.6%), 223 (57.9%), and 21 (5.5%) for Low, Normal and High Resilience categories respectively (Table 2).

	Categories	Frequency (n, %)	Means, SD
Type D Personality	Type D	211(54.8%)	NA: 12.4, 6.2
	Non-Type D	174(45.2%)	SI: 13.9, 6.3
Resilience	Low Resilience	141(36.6%)	3.18 (0.69)
	Normal Resilience	223(57.9%)	
	High Resilience	21(5.5%)	

Table 2: Frequencies and mean scores of Type D Personality and Resilience.

Correlation coefficient between NA mean scores and BRS mean scores was -0.380 (0.0001 significant), and -0.193(0.0001 significant) between SI mean scores and BRS scores, using Pearson's Correlation. (Fig 1 and 2)
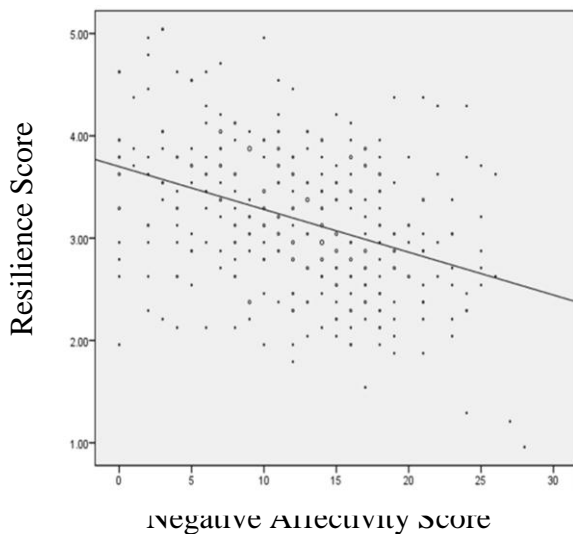

Figure 1: Scatterplot between Negative Affectivity and Resilience scores. Pearson's Correlation gave r=-0.380, sig. at 0.0001.
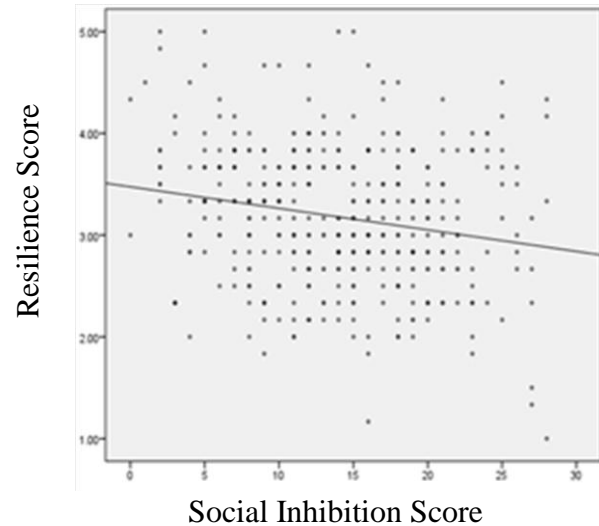

Figure 2: Scatterplot between Social Inhibition and Resilience scores. Pearson's Correlation gave r=-0.193, sig. at 0.0001.

DISCUSSION

Our study gave a high frequency of Type D Personality (54.8%), which, overall, was consistent with the results of other similar studies. The prevalence in the general population is considered to be 20-24% (Borkoles and Kaiseler, 2018). A higher prevalence of 39% to 43% is seen among university students in places such as Japan, Turkey and Iceland (Demirci and Selvi, 2016). Students of health sciences (medical, nursing, physiotherapy) also showed similarly high prevalence of 31% to 53.3% (Gupta and Basak, 2013), as shown by studies in India, Turkey and Europe. It must be noted, however, that the results of our study still showed a significantly higher prevalence than most studies. In addition, there is considerable variation seen among the different study groups. All this suggests that underlying geographical, social, and cultural factors may have a role in determining TDP. A study in Rawalpindi, Pakistan gave an astounding 71% prevalence in cardiac patients, which provides some insight into the socioeconomic and ethnic tendency for developing TDP (Saeed and Niazi, 2011). Unfortunately, to the best of our knowledge, no Pakistani study has been conducted on TDP in students. One interesting finding in our study, which is corroborated by an Iranian study on medical students, was the role of gender: a significantly higher proportion of males presented with Type D Personality in our study than females (Zoljanahi and Vafaie, 2017). This too may have a social undertone, as Pakistan is a largely patriarchal society. None of the other demographic factors assessed in our study showed a positive correlation with Type D Personality.

A consistent pattern was seen for Resilience studies as well. Our study gave a mean BRS score of 3.18 (s.d. 0.69), less than that of the general population (3.53-3.98 s.d. 0.68) (Smith and Dalen, 2008). This finding is shown by two Pakistani studies among medical students, and one study in Lahore on non-medical undergraduates (Zaheer and Zobia, 2022). One study among medical students shows a mean BRS score even lower than our study (2.6 s.d. 0.9) (Haider and Pasha, 2022). Several other international studies among both medical and non-

medical undergraduates, from places such as Middle East, South Asia, Turkey, China and the USA, either corroborate these findings, or show results less than our study (Houpy and Woodruff, 2017). Notably, however, a study in Eastern India revealed a prevalence for low Resilience of only 25.2% among medical students, compared to 36.6% in our study (Golui and Roy, 2022).

As to the reason for the above findings, several factors may be at play, considering that Resilience is a complex and multifaceted idea. Resilience in several studies is found to have correlations with factors such as age (increasing resilience) (Houpy and Woodruff, 2017), gender (lower in females) (Lee and Pincavage, 2017) and other factors specific to the community and study group involved, such as socioeconomic status, ethnicity, religion and culture. While our study showed no significant correlation with either age or gender, the overwhelming majority of our sample consists of adolescents and young adults, which may have an effect on the data. Resilience had no correlation with any of the demographic characteristics we assessed, although some of these factors are known to play a role in Resilience, such as boarding status (Mukherjee and Som, 2021).

The results of our study revealed a negative correlation between both aspects of Type D Personality and Resilience. This finding is supported by studies on nursing students in Korea and Slovakia (Skodova and Banovcinova, 2018). A Polish study on adolescents gave a similar result, so did a Korean study on ICU Nurses (Oginska and Michalsa, 2019). We also found that the correlation between Resilience and Negative Affectivity was stronger ($r= -0.380$, sig 0.0001) than that with social inhibition ($r=-0.193$, sig 0.0001); this again is supported by the Polish study. A meta-analysis of thirty studies concluded that Resilience showed a strong negative correlation with trait Neuroticism from the Big Five Inventory (Oshio and Hirano, 2018). As Neuroticism also shows a strong positive correlation with Type D Personality, this may have some significance (Denollet, 2005).

High Resilience indicates a more optimistic outlook on life, as well as an ability to form better relationships with people. Considering this, it makes sense that Resilience would correlate negatively with Type D Personality. People with a tendency to develop negative emotions are less likely to face adverse situations in life, and combined with the trait of social inhibition, they have less social support (Diehl and Hay, 2012). All this leads to low Resilience in challenging circumstances. Further studies must be done to explore this relationship, particularly among undergraduate students.

The limitations of this study were that it involved only one institute, and convenience sampling was used. This means that the results of this study cannot be generalized to include all medical or undergraduate students in the region. Additionally, the majority of students were medical students, so the results may not be as relevant in the case of other health science students.

Conclusion

There was an alarmingly high frequency of Type D personality in undergraduate students at the institute. In addition, more than a third of the respondents had a Low Resilience level. A negative correlation was found between Type D Personality and Resilience levels.Conflict of interest.There was no conflict of interest at any stage of the research.Funding The study was not funded by any individual or organization.

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