



**RESEARCH PAPER**

**Relationship between Personality Traits and Mental Health among Graduate Students**

**Bilal Ahmad \*<sup>1</sup> Shanza Ali Chughtai<sup>2</sup> Asma Rauf<sup>3</sup>**

1. M. Phil Scholar, The Department of Psychology, Institute of Southern Punjab, Multan, Punjab, Pakistan
2. M. Sc, The Department of Psychology, Bahauddin Zakryia University Multan, Punjab, Pakistan
3. M. Sc , The Department of Psychology, Bahauddin Zakryia University Multan, Punjab, Pakistan

**DOI**

[http://doi.org/10.47205/plhr.2022\(6-II\)81](http://doi.org/10.47205/plhr.2022(6-II)81)

**PAPER INFO**

**ABSTRACT**

**Received:**

March 17, 2022

**Accepted:**

June 21, 2022

**Online:**

June 23, 2022

**Keywords:**

Mental Health,  
Personality Traits,  
University  
Students

**\*Corresponding  
Author**

bilalahmar786@g  
mail.com

This systematic comparative study aimed to measure Relationship Between Personality Traits And Mental Health Among graduate Students. The correlation research design used in the present research study. The total sample consisted of 200 graduate University students. The age of respondents was 16-25 years. We used a simple random sampling technique. we used the Mental health inventory and the Big five inventory. After the collection of data, we put on SPSS 2.5. We applied descriptive and inferential analysis. Charts and frequency tables, Correlation analysis, one-way analysis of variance (ANOVA), and Regression test. After analysis the data, it concluded that (a) There is a relationship between personality traits and mental health considering demographic variables and strongly correlates mental health and personality factor according to Family System, Student Course, Age Gender, Residence and Living. other outcomes are indicated as Openness, Extraversion, Agreeableness and Conscientiousness (Personality Traits) had positive relationship with Pro-social Behavior, however Neuroticism had contrary relationship with Pro social Behavior. Relapse examination further indicated that Extraversion, Openness, Agreeableness and Conscientiousness were positive indicators of Pro-social Behavior, where Agreeableness was discovered the most grounded indicator among all. Neuroticism was the negative indicator of Pro social Behavior among adolescents. It proves (b) there is a relationship between personality traits and mental health among university students.

**Introduction**

Schacter et al. (2009) Personality is an individual's characteristic style of behaving, thinking, and feeling. Personality refers to individual differences in characteristic patterns of thinking, feeling and behaving etc. The study of personality focuses on two broader areas: One is to understand the individual's differences in particular personality characteristics, such as sociability or irritability. However

personality traits reflect individuals' trademark examples like conceptions, sentiments, and practices. Consistency and soundness are important factors in personality traits for example a person who exhibit a specific attribute extraversion can be counted as to be compliant in different situations for long-term. Amiri et al. (2017) the depression and somatic symptoms shows a positive notable correlation with neuroticism and there was shown the negative notable correlation between depression and agreeability, extroversion and receptiveness for new experiences. The concluding point is that the physical exercises and sports affects positively on the individual's mood.

The first factor openness to experience can also be termed as willingness towards intellectual curiosity or imagination. This factor exhibits the tendency or inclination to think and act outside the box and try new experiences outside of the comfort zone. Curiosity, flexibility and insightfulness are some of the traits. However conscientiousness can be termed as the strong wish to be careful while doing the tasks and to be diligent about it and to control the gratification by regulating it with self-discipline. Being goal oriented, consistency and credibility and reliability are some of the traits. Extraversion can be termed as the willingness of an individual to interact and looks for social connections and be more inclined to socialize instead of being in his own personal space (introversion). Having positive energy, confidence and being friendly and outgoing are some of the traits. On the other hand agreeableness can be explained by measuring the extent of compassion and collaboration when an individual's interactions happen with others. Being loyal, kind, thoughtful and tactful are some of the traits. Neuroticism exhibits the inclination towards emotional instability, the personality traits that are negative and having the thinking that is self-destructive. Opposite of being optimists i.e. pessimists, instability, self-doubt and anxiety are some of the traits.

“Health is a state of complete physical, mental and social well-being And not merely the absence of disease or infirmity.” The concept of mental health is subjective and this conception has many factors which are well-being, recognized self-worth, competence, the dependence on one another and intergeneration and most importantly the acknowledgement of potential weather it is of intellectual or emotional.

### **Literature Review**

Previous research explained mental health and personality traits among university students.. Whenever many other types of research examined the relationship between personality traits and mental health among professional and non-professional students, rural and urban students, hostel and day scholar students, and according to the family system means joint family and nuclear family students, etc.

Amiri et al. (2017) examined a study on Relationship between personality traits and mental health in athlete students and the purpose of this study was to investigate the relationship present between the both. Correlation design was used for this study. The number of subjects i.e. athlete students were 60 and they were arbitrarily chosen and responded to NEO-PIR inventory and General Health Questionnaire (GHQ 28). NEO is used for assessment of five personality traits: Neuroticism (N), Extroversion (E), Agreeableness (A), Openness to new experience (O) and Conscientiousness (C), and GHQ is used for the assessment of four dimensions: Somatic symptoms (A), Anxiety (B),

Social withdrawal (C) and Depression (D). Pearson correlation test was used to analyze the attained data. It was shown by the results that there existed positive notable correlation between N with somatic signs and depression while correlation of E, A, O and C with depression was negative. The concluding point is that the physical exercises and sports affects positively on the individual's mood and decrease physical and mental diseases in athlete's students.

Brailovskaia and Margraf (2016) inspected a study on Non-Users: Correlation between Personality Traits and Mental Health Variables. All information of the current study was gathered via an online self-assessment poll on examination stage [www.unipark.de](http://www.unipark.de). An aggregate email greeting was sent to each understudy of the Ruhr-Universita Èt Bochum consisting of a connection to online poll. To evaluate joy, the Subjective Happiness Scale (SHS) was utilized. The poll comprised of four things evaluated on a 7-point Likert scale. It is seen that Facebook is used as a social platform for cooperation and a means for introducing themselves by an estimation of over one billion users which form it to be the most commonly used social platform. The focus mainly remained to explore disparities in different personality traits and mental health variables between Facebook users and non-users. Information attained from 945 sample size (790 users, 155 non-users). Findings showed that the users made notably more on narcissism, confidence and extraversion as opposed to non-users. Moreover, these people had notably higher estimations of life contentment, fulfillment, social aid and life satisfaction. The non-users had (insignificantly) more approximation of despondency display than the people who uses Facebook. From these two viewpoints, extraversion, self-esteem, bliss, life contentment, flexibility and social aid were realized from one aspect whereas sorrow, anxiety and side effects caused by stress were also adversely associated. Moreover neuroticism was decidedly linked with discouragement, anxiety and stress manifestations. Certain disparity in the sense of certain relationship of personality traits and mental health variables is exhibited between Facebook users and non-users. As opposed to Facebook non-users, the current outcomes showed that the users had greater estimations of particular personality traits and positive variables which lead to a good mental health. From these results, it can be seen that the social platforms are significantly important in the routine lives of many people.

Buresova1 et al. (2020) examined an investigation on Predictors of Mental Health in Adolescence. To anticipate the mental health in adolescence, the investigation zeroed in in regard of character attributes, dispositional confidence, and saw social help. It was evaluated using Mental Health Continuum. The information for the examination was gathered by the use of paper/pencil poll conducted for the year 2014/2015 in primary educational institutes. .Mental Health Continuum Short Form (MHC-SF) (Keyes, 2009) was an abbreviated, 14-thing variant of the longer version survey. Characteristics were examined using Big Five Inventory. And using Life Orientation Test—revised dispositional positive thinking was examined. Social help by Close Relationships and Social was examined Support Scale. There were 1239 people in this examination and age group was 12-19 in which the female chosen were 54.3% and men were 45.7%. Consecutive relapse examination uncovered that mental health fluctuated by 33.5% from segment factors and character attributes together, in which most grounded indicators were extraversion and neuroticism. In this change, the factors that are also vital are dispositional confidence and saw social help. There was a total of 46.0% change in terms of mental health including all the above mentioned factors.

Habibia et al. (2012) examined The Study of Personality Characteristics and Mental Health in Addicts. The motivation behind present examination was to study the addicts in the Alborz province and relationship between the personality characteristics and mental health of those who are currently using medications in Addiction Drop-out Centers. For the purpose of attaining information, sample size was 100 in which addicts aging from 25 to 55 years were chosen who were undergoing the medication treatment. Expressive connection was used as examination strategy and for assessment of personality characteristics utilized the Big Five Personality Questionnaire Short Form (NEO-FFI-1990) and it had neuroticism, extroversion, receptiveness to encounter, reliability and appropriateness. For evaluation of mental health, 90-R-SCL poll was utilized and explored the components of actual complaints, fanatical - enthusiastic, interpersonal affectability, sadness, tension, animosity, fear, neurotic ideation and mental separation. Also were dissected the Pearson connection coefficient between measurements of personality characteristics and mental health. Examination's after-effect displayed critical and positive connection between personality factors and measurements of mental health.

Kardum and Knezevic (2012) correlated an investigation on Relationships between five-factor personality traits and specific health-related personality dimensions. A total of 822 sample size attained and in which girls were 53.3% and boys were 46.7% which were chosen arbitrarily and they belonged from the big communities residing in the urban areas. From these towns, a random determination of roads was formed and inside roads the selection of families was random. Inside every family just one randomly chose member more than 18 years was met. The tool used for evaluating the personality traits was Big Five Inventory (BFI; Benet-Martinez and John, 1998). The association between the longer version personality traits i.e. 15, five factor personality traits and their associated factors i.e. alpha and beta is measured. Passivity, negative affectivity and optimistic control are considered to be the main components derived from the 15 personality ideas that were health related. From the attained findings, the three health related components were achieved which would be explained using five-factor traits. While the issue of health is considered Extraversion, Neuroticism and Openness are more acknowledged as opposed to the remaining two. The relatively detailed extent of autonomy from five-factor personality traits is shown by health locus of control and detachment. Additionally, from the perspective of how much affect they have, alpha factor has less negative effects and for more control, beta factor plays a role. The outcomes recommended that five-factor and both the upper mentioned factors are helpful as an overall system for the research of personality-health

Lewis and Cardwell (2020) investigated an examination on the students from UK currently studying professional degrees and evaluated the correlation of five personality traits and perfectionism with mental health. Point of this exploration was to investigate the correlation between upper mentioned factors in UK students undertaking college degrees in veterinary medication, medication, drug store, dentistry and law. A sum of 1744 samples from UK examined veterinary medication, medication, dentistry, drug store and law finished questionnaire, gathered information on big five personality traits (NEO-

FFI), perfectionism (Frost Multidimensional Perfectionism Scale), prosperity (Warwick-Edinburgh Mental Well-being Scale), mental misery (General Health Questionnaire-12), depression (Beck Depression Inventory-II) and self-destructive ideation and tries according to outcomes Veterinary, clinical and dentistry students were altogether much pleasing than students of law, whereas for the case of veterinary students had the least perfectionism of the above gatherings contemplated. Significant degrees of neuroticism and conscientiousness that was notably less were prescient of expanded mental medical affliction in every one of understudy people. Examination featured in which the predominant episodic perspective on professional students had maladaptive personality traits that contrarily sway on their mental health might be lost.

Sae Na et al. (2011) correlated an investigation on Association between personality traits and Suicidality. It was distinguished with different age samples from Korea. Self-destruction is an emerging health problem, which significantly brought about many deaths around the world. Personality traits were a portion of the important danger ingredient for suicidality. The sample was taken from the age group of 18-74 years people from Korea who fell under the classification of non-institutionalized people under different areas. A total of 6 initial samples were chosen in terms of the divisions, specifically administrative based. We tried to recognize the correlation between personality traits and suicidality in terms of age gathering. The sample was from the people of local areas in the Republic of Korea and the traits that were analyzed were from the Big-Five Inventory-10 traits. Suicidality was supposed to be measured dependent on the history of lifetime because the personality traits are there in each individual for their lifetime. Psychiatric comorbidity and socio demographic data helped in examining the impacts of personality traits and suicidality on each other. The sample size was 6022 in which chosen females were 3714 and chosen males were 2308. Agreeableness and suicidal ideation has adverse association, whereas neuroticism and transparency had decidedly associated with suicidal ideation between young adults. Transparency had a positive association, and principles had a negative association with suicidal ideation among the moderately aged gathering. For suicidal attempts in youthful adult and more established gatherings neuroticism served to be more influential.

Xin et al. (2017) inspected an investigation on the relationship between personality and the response to acute psychological stress. The current examination analyzed the correlation of personality attributes and what the individuals will give response to acute psychological stress incited by a stress enlistment technique (the Trier Social Stress Test, TSST) and it was estimated with a blend of cardiovascular reactivity, hypothalamic-pituitary-adrenal pivot reactivity, and emotional effect (counting both effects i.e. positive and negative and abstract controllability) among solid people. To analyze the correlation, Generalized Estimating Equations (GEE) approach was utilized. Findings recommended that more level of neuroticism anticipated lesser pulse stress reactivity, lesser stress response of cortisol and also lower abstract controllability. People with more levels of extraversion indicated more modest cortisol enactment to stress and low increment of contrary effect. Moreover, higher receptiveness level was related with lesser stress response of cortisol.

Yan et al. (2012) analyzed an investigation on The Relationship between Recent Stressful Life Events, Personality Traits, Perceived Family Functioning and Internet

Addiction among College Students. This examination researched the correlation of upper mentioned aspects in the sample of 892. Subjects were college students and classified into (non-dependent, gentle or serious IA) utilizing the Chen Internet Addiction Scale. The tool used for evaluating Stressful life events, personality traits and family functioning was the Adolescent Self-Rating Life Events Checklist, the Eysenck Personality Questionnaire, and the Family Adaptability and Cohesion Scale, individually. Achieved findings demonstrated that contrasted and non-dependent individuals, individuals with serious IA which was 9.98% had the level of family functioning that was low, less levels of extraversion, more neuroticism and psychoticism and higher life events that were supposed to be more stressing. Moreover, individuals showing mellow IA to be exact number of 11.21% had increased neuroticism and increased wellbeing and transformation issues which are also the expected indicators. A connection impact with psychoticism and all out life weight on IA was likewise discovered. These discoveries described the impacts and correlations of stress, personality traits and their cooperation in students (College level).

## **Material and Methods**

### **Participants**

Given sample is consisted of 200 participants by using simple random sampling technique. We took graduate University students as a sample. The duration of age of respondents was 16-25 years. Participants included both categories of students (professional and non-professional). They lived in rural areas and urban areas. Some participants were belonged to a joint family system and others were related to a nuclear family system.

### **Research Design**

We used correlation research design in the present research study. To see the relationship between two variables which is the most appropriate research design for the present study.

### **Instruments and Procedure**

John and Martinez (1998) "Big Five Inventory" (BFI) 44-items was used for the assessment of personality factors in general populations. Veit and Ware (1983) MHI-18 For the assessment of mental health which was to use in general populations. The researcher took Permission from the graduate's university students firstly. The sample consisted of 200 participants. Demographic sheet consisted of age, gender, education, professional and non-professional students, rural areas and urban areas, hostel life and home residence, joint family system and nuclear family system etc. The mental health inventory and big five inventory scales were handled personally. The instructions gave to participants; they filled scales and help them where they needed. After the collection of data, we put all data on SPSS 2.5 and then analyzed the data using Pearson correlation. After getting output from SPSS we concluded all results.

## **Results and Discussion**

### **Demographic Statistics**

In Table 1, the frequency of the specific questions regarding the age, gender, Student Course, Living Family System, and class are represented.

**Table 1**

**Demographic Statistics**

Variable	Classification	Frequency	Valid Percentage	Cumulative Percentage
Age	16-20	143	71.5	71.5
	21-25	57	28.5	100.0
	Total	200	100.0	
Gender	male	47	23.5	23.5
	female	153	76.5	100.0
	Total	200	100.0	
Student Course	professional	79	39.5	39.5
	non professional	121	60.5	100.0
	Total	200	100.0	
Residence	rural	135	67.5	67.5
	Urban	65	32.5	100.0
	Total	200	100.0	
Living	hostel	144	72.0	72.0
	day scholar	56	28.0	100.0
	Total	200	100.0	
Family System	joint family	154	77.0	77.0
	Nuclear family	46	23.0	100.0
	Total	200	100.0	
Class	B.S	100	50.0	50.0
	Msc	100	50.0	100.0
	Total	200	100.0	

The respondents were further classified on their courses as shown in figure 3. Mainly, 60.5 % (121) students belonged to the non-professional courses, while 39.5 % (79) of the respondents were linked to professional courses.

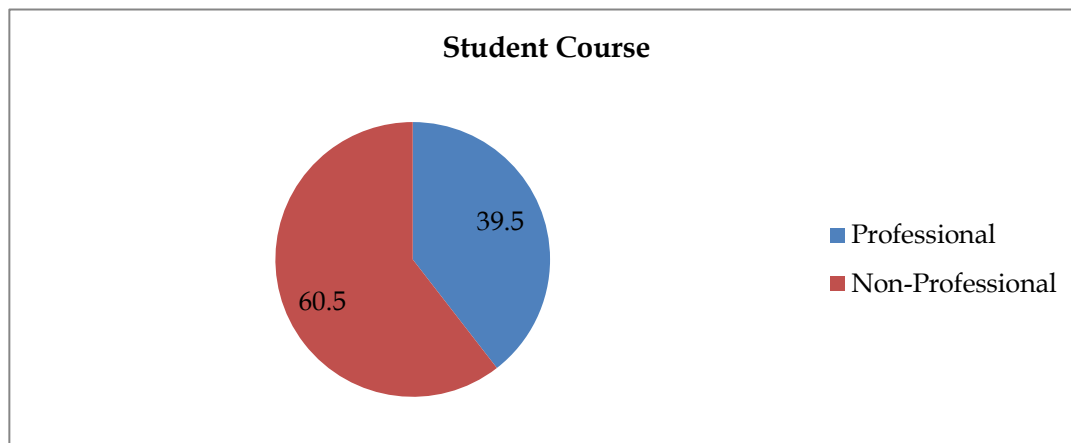


Figure 1 Frequency Distribution of Student Course in the Sample

In figure 4, the residence of the respondent is added to the questionnaire as certain factors of the urban and rural living differentiates the personality traits. As shown, 67.5 % (135) people belonged to the rural areas in contrast to 32.5 % (65) people living in urban areas.

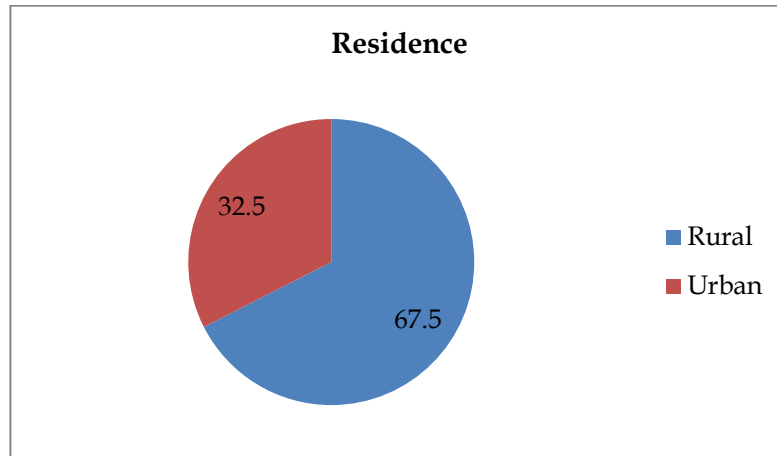


Figure 2 Frequency Distribution of Residence in the Sample

Next, the environment of the students plays a critical role in defining his personality traits and their impact on his mental health; therefore, the living structure of the students added to the questionnaire. From figure 5, it is witnessed that 144 (72%) respondents are living in hostels while day scholars are only 6 (28 %).

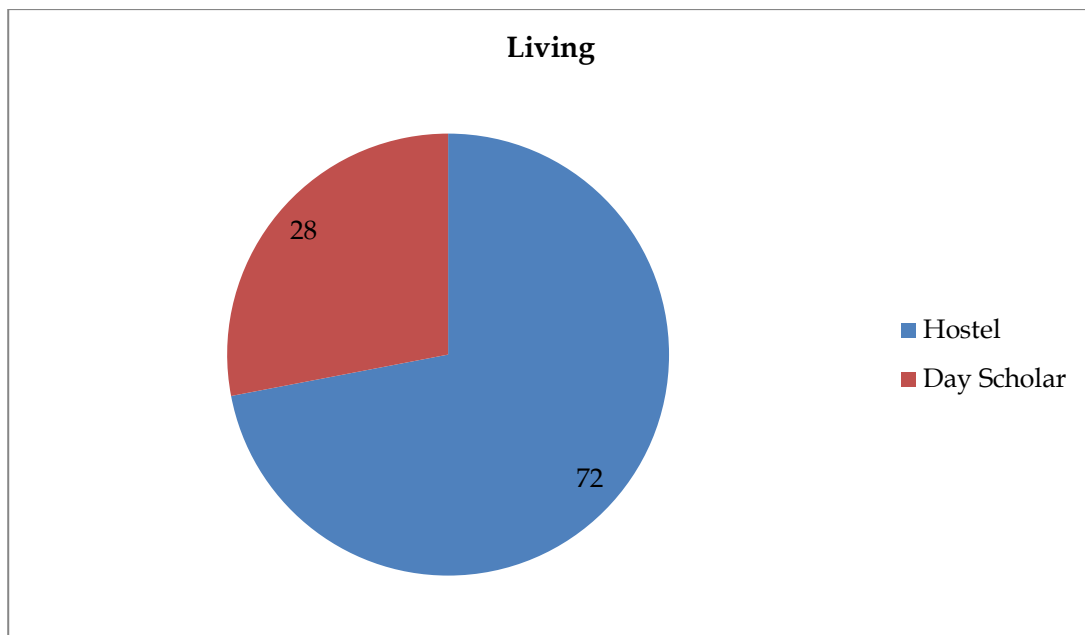


Figure 3- Frequency Distribution of Living in the Sample

The respondents were further questioned about the family system to ensure the effect of mental health is only due to the personality traits (and the variables that impact one's personality). It is seen that only 23 % (46) of the respondents are living in Nuclear families, while 77 % (154) of the respondents stayed as a part of joint families.



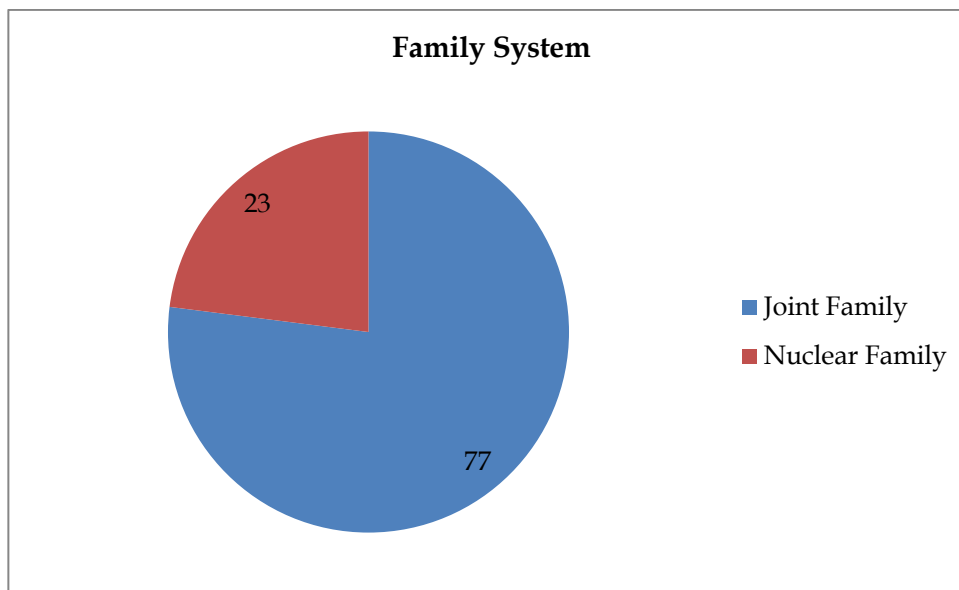


Figure 4- Frequency Distribution of Family System in the Sample

Lastly, the class (or degree level) is added in the survey, which is demonstrated in figure 7. It can be seen that equal percentage (50) of every class is utilized (100 students). The students were from bachelors and Masters Level.

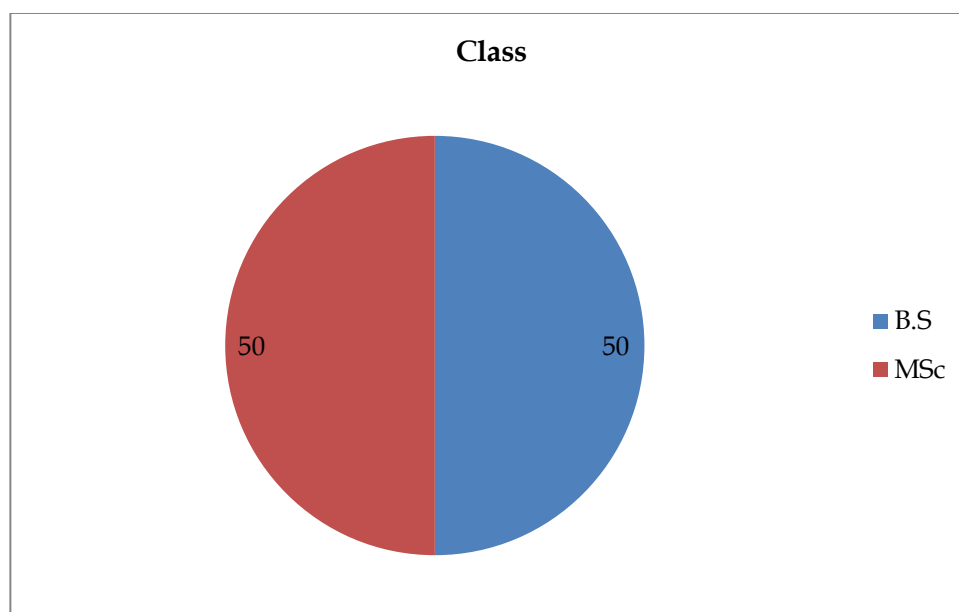


Figure 5- Frequency Distribution of Class in the Sample

**Table 2**  
**Correlation Test conducted to measure the positive, negative or no correlation between personality traits and mental health**

		Correlations					
		mhtotal	mean_ext	mean_agr	mean_con	mean_neur	mean_opn
mhtotal	Pearson Correlation	1	.040	.036	.003	-.261**	.159*
	Sig. (2-tailed)		.578	.614	.968	.000	.025
	N	200	200	200	200	199	200
mean_ext	Pearson Correlation	.040	1	.483**	.457**	.364**	.403**
	Sig. (2-tailed)	.578		.000	.000	.000	.000
	N	200	200	200	200	199	200

mean_agr	Pearson Correlation	.036	.483**	1	.475**	.404**	.311**
	Sig. (2-tailed)	.614	.000		.000	.000	.000
	N	200	200	200	200	199	200
mean_con	Pearson Correlation	.003	.457**	.475**	1	.404**	.325**
	Sig. (2-tailed)	.968	.000	.000		.000	.000
	N	200	200	200	200	199	200
mean_neu	Pearson Correlation	-.261**	.364**	.404**	.404**	1	.362**
	Sig. (2-tailed)	.000	.000	.000	.000		.000
	N	199	199	199	199	199	199
mean_opn	Pearson Correlation	.159*	.403**	.311**	.325**	.362**	1
	Sig. (2-tailed)	.025	.000	.000	.000	.000	
	N	200	200	200	200	199	200

\*\* . Correlation is significant at the 0.01 level (2-tailed).

\* . Correlation is significant at the 0.05 level (2-tailed).

**Table 3**  
**Regression Analysis of the sample Coefficients, a**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	81.369	6.837		11.901	.000
	Age	-1.938	1.770	-.081	-1.095	.275
	Gender	-3.197	1.927	-.125	-1.659	.099
	StdntCours	-.259	1.651	-.012	-.157	.876
	Residence	-1.068	2.101	-.046	-.508	.612
	Living	-1.824	2.061	-.076	-.885	.377
	FmlySystem	1.836	2.093	.071	.877	.381
	Class	-.363	1.672	-.017	-.217	.828
a. Dependent Variable: mhtotal						
<i>Model Summary</i>						
	R Square	Adjusted R Square	Std. Error of the Estimate			
	.029	-.007	10.89369			
a. Predictors: (Constant), class, FmlySystem, StdntCours, age, Gender, Living, Residence						
<i>ANOVAa</i>						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	668.630	7	95.519	.805	.584 <sup>b</sup>
	Residual	22785.125	192	118.673		
	Total	23453.755	199			

**Conclusion**

Through the analysis, it is concluded that a positive correlation is found between the mental health of the graduate students and the personality traits, which shows the hypothesis is reliable and accepted. Mostly researches show that a significant correlation with personality factor and mental health. The outcomes are indicated as Openness, Extraversion, Agreeableness and Conscientiousness (Personality Traits) had positive relationship with Pro-social Behavior, however Neuroticism had contrary relationship with Pro social Behavior. Relapse examination further indicated that Extraversion, Openness, Agreeableness and Conscientiousness

were positive indicators of Pro-social Behavior, where Agreeableness was discovered the most grounded indicator among all. Notwithstanding, Neuroticism was the negative indicator of Pro social Behavior among adolescents. The current investigation uncovered that there was a critical connection between personality traits and pro social behavior. Writing recommended that pleasantness, extraversion, good faith and receptiveness to having huge positive connections with aiding behavior and neuroticism had negative relationship with pro social behavior.

The consequences of the Pearson test demonstrated a positive critical connection between extraversion, appropriateness, scruples and students' general health; likewise a pessimistic huge relationship between neuroticism and students' general health, and no connection between receptiveness to experience and students' general health, Furthermore, investigation of difference showed a huge connection between neuroticism, extraversion, and reliability, with the age bunch additionally huge relationship between extraversion, and receptiveness to encounter, with the considering a long time at college and huge relationship between receptiveness to encounter and conjugal status.

While the issue of health is considered Extraversion, Neuroticism and Openness are more acknowledged as opposed to the remaining two. The relatively detailed extent of autonomy from five-factor personality traits is shown by health locus of control and detachment. Additionally, from the perspective of how much affect they have, alpha factor has less negative effects and for more control, beta factor plays a role. The outcomes recommended that five-factor and both the upper mentioned factors are helpful as an overall system for the research of personality-health.

Personality traits likewise identified with different outcomes distinctively dependent on arbitrators. Span of treatment directed connections among traits and outcomes recommending these impacts were enhanced over longer administrations. In general outcomes recommended that personality evaluation help with case conceptualization by proposing possible qualities just as obstructions to treatment. Generally speaking, there were important and possibly clinically valuable correlations of explicit end results and personality areas, in which large numbers were compatible with the conjectured writing on this theme. Surveying personality traits help clinicians in treatment arranging, case conceptualization, just as perceiving and tending to potential treatment obstructions. Subsequently, clinicians and scientists ought to consider fusing personality measures in essential admission appraisals to move past basically treating and lessening side effects, taking into consideration the incorporation of personality traits in clinical settings.

### **Limitations**

The sample size was too short. In the quantitative researches, such a small sample size is unable to achieve the desired output results. Next, the students all belonged to the same university or were living in the same hostel, which forced them in the same external environments. For example, they had to experience the similar work environments, classes, and teachers, which decreased the effectiveness and diversity of the sample. Moreover, the only opinion of particular people belonging from one area was analyzed. There is an active insurgence right now arising every now and then in various areas of the country, which wasn't incorporated.

### **Recommendations**

- The sample size should increase.
- In the sample size, diversity should be added through surveying the people based in different areas of Pakistan.
- Students studying in other universities of different economic status should be interviewed to allow diversity in the results, which increases the results reliability.

Since a positive correlation is generated from the mental health and personality factors of graduate students, which is negatively impacting the university students. Therefore, there is a dire need to establish departments in the university, which will council the students to make sure the future of the country is safe and progressing

**References**

- Achdut, N., & Refaeli, T. (2020). Unemployment and psychological distress among young people during the COVID-19 pandemic: Psychological resources and risk factors. *International Journal of Environmental Research and Public Health*, 17(19), 7163.
- Alkhamees, A. A., Alrashed, S. A., Alzunaydi, A. A., Almohimeed, A. S., & Aljohani, M. S. (2020). The psychological impact of COVID-19 pandemic on the general population of Saudi Arabia. *Comprehensive psychiatry*, 102, 152192.
- Bonsaksen, T., Heir, T., Schou-Bredal, I., Ekeberg, Ø., Skogstad, L., & Grimholt, T. K. (2020). Post-Traumatic Stress Disorder and Associated Factors during the Early Stage of the COVID-19 Pandemic in Norway. *International Journal of Environmental Research and Public Health*, 17(24), 9210.
- Feng, Y., Zong, M., Yang, Z., Gu, W., Dong, D., & Qiao, Z. (2020). When altruists cannot help: the influence of altruism on the mental health of university students during the COVID-19 pandemic. *Globalization and Health*, 16(1), 1-8.
- Fitzpatrick, K. M., Drawve, G. & Harris, C. (2020). Facing new fears during the COVID-19 pandemic: The State of America's mental health. *Journal of anxiety disorders*, 75, 102291.
- Gijzen, M., Shields-Zeeman, L., Kleinjan, M., Kroon, H., van der Roest, H., Bolier, L., ... & de Beurs, D. (2020). The bittersweet effects of COVID-19 on mental health: Results of an online survey among a sample of the Dutch population.
- Gómez-Salgado, J., Andrés-Villas, M., Domínguez-Salas, S., Díaz-Milanés, D., & Ruiz-Frutos, C. (2020). Related health factors of psychological distress during the COVID-19 pandemic in Spain. *International journal of environmental research and public health*, 17(11), 3947.
- Knolle, F., Ronan, L., & Murray, G. K. (2020). The impact of the COVID-19 pandemic on mental health in the general population: a comparison between Germany and the UK. *medRxiv*.
- Lasheras, I., Gracia-García, P., Lipnicki, D. M., Bueno-Notivol, J., López-Antón, R., de la Cámara, C., ... & Santabárbara, J. (2020). Prevalence of anxiety in medical students during the covid-19 pandemic: A rapid systematic review with meta-analysis. *International journal of environmental research and public health*, 17(18), 6603.
- Nwachukwu, I., Nkire, N., Shalaby, R., Hrabok, M., Vuong, W., Gusnowski, A., ... & Agyapong, V. I. (2020). COVID-19 Pandemic: Age-Related Differences in Measures of Stress, Anxiety and Depression in Canada. *International Journal of Environmental Research and Public Health*, 17(17), 6366.
- Passos, L., Prazeres, F., Teixeira, A., & Martins, C. (2020). Impact on mental health due to COVID-19 pandemic: Cross-sectional study in Portugal and Brazil. *International journal of environmental research and public health*, 17(18), 6794.

- Salari, N., Khazaie, H., Hosseini-Far, A., Ghasemi, H., Mohammadi, M., Shohaimi, S., ... & Hosseini-Far, M. (2020). The prevalence of sleep disturbances among physicians and nurses facing the COVID-19 patients: a systematic review and meta-analysis. *Globalization and health*, 16(1), 1-14.
- Saraswathi, I., Saikarthik, J., Kumar, K. S., Srinivasan, K. M., Ardhanaari, M., & Gunapriya, R. (2020). Impact of COVID-19 outbreak on the mental health status of undergraduate medical students in a COVID-19 treating medical college: a prospective longitudinal study. *PeerJ*, 8, e10164.
- van der Velden, P. G., Contino, C., Das, M., van Loon, P., & Bosmans, M. W. (2020). Anxiety and depression symptoms, and lack of emotional support among the general population before and during the COVID-19 pandemic. A prospective national study on prevalence and risk factors. *Journal of affective disorders*, 277, 540-548.
- Verma, S., & Mishra, A. (2020). Depression, anxiety, and stress and socio-demographic correlates among general Indian public during COVID-19. *International Journal of Social Psychiatry*, 66(8), 756-762.
- Vindegaard, N., & Benros, M. E. (2020). COVID-19 pandemic and mental health consequences: systematic review of the current evidence. *Brain, Behavior, and Immunity*.
- Violant-Holz, V., Gallego-Jiménez, M. G., González-González, C. S., Muñoz-Violant, S., Rodríguez, M. J., Sansano-Nadal, O., & Guerra-Balic, M. (2020). Psychological Health and Physical Activity Levels during the COVID-19 Pandemic: A Systematic Review. *International journal of environmental research and public health*, 17(24), 9419.
- Wang, C., Pan, R., Wan, X., Tan, Y., Xu, L., McIntyre, R. S., ... & Ho, C. (2020). A longitudinal study on the mental health of general population during the COVID-19 epidemic in China. *Brain, behavior, and immunity*.
- Wang, C., Pan, R., Wan, X., Tan, Y., Xu, L., Ho, C. S., & Ho, R. C. (2020). Immediate psychological responses and associated factors during the initial stage of the 2019 coronavirus disease (COVID-19) epidemic among the general population in China. *International journal of environmental research and public health*, 17(5), 1729.
- Waris, A., Khan, A. U., Ali, M., Ali, A., & Baset, A. (2020). COVID-19 outbreak: current scenario of Pakistan. *New Microbes and New Infections*, 100681.
- Woon, L. S. C., Sidi, H., Nik Jaafar, N. R., & Leong Bin Abdullah, M. F. I. (2020). Mental Health Status of University Healthcare Workers during the COVID-19 Pandemic: A Post-Movement Lockdown Assessment. *International journal of environmental research and public health*, 17(24), 9155.
- Xiong, J., Lipsitz, O., Nasri, F., Lui, L. M., Gill, H., Phan, L., ... & McIntyre, R. S. (2020). Impact of COVID-19 pandemic on mental health in the general population: A systematic review. *Journal of affective disorders*.

- Yamamoto, T., Uchiumi, C., Suzuki, N., Yoshimoto, J., & Murillo-Rodriguez, E. (2020). The psychological impact of 'mild lockdown' in Japan during the COVID-19 pandemic: a nationwide survey under a declared state of emergency. *International journal of environmental research and public health*, 17(24), 9382.
- Yang, Y., Liu, K., Li, S., & Shu, M. (2020). Social media activities, emotion regulation strategies, and their interactions on people's mental health in COVID-19 pandemic. *International Journal of Environmental Research and Public Health*, 17(23), 8931.
- Ying, Y., Kong, F., Zhu, B., Ji, Y., Lou, Z., & Ruan, L. (2020). Mental health status among family members of health care workers in Ningbo, China during the Coronavirus Disease 2019 (COVID-19) outbreak: a Cross-sectional Study. MedRxiv.
- Young, K. P., Kolcz, D. L., O'Sullivan, D. M., Ferrand, J., Fried, J., & Robinson, K. (2020). Health Care Workers' Mental Health and Quality of Life During COVID-19: Results From a Mid-Pandemic, National Survey. *Psychiatric Services*, appi-ps.
- Zhao, S. Z., Wong, J. Y. H., Wu, Y., Choi, E. P. H., Wang, M. P., & Lam, T. H. (2020). Social distancing compliance under Covid-19 pandemic and mental health impacts: A population-based study. *International journal of environmental research and public health*, 17(18), 6692.
- Zhou, J., Yuan, X., Qi, H., Liu, R., Li, Y., Huang, H., ... & Wang, G. (2020). Prevalence of depression and its correlative factors among female adolescents in China during the coronavirus disease 2019 outbreak. *Globalization and Health*, 16(1), 1-6.