



Stress, Anxiety and Depression among Introverts and Extroverts: A Comparative Study

Hooria Azam ¹, Radaf Fatima ², Huria Afzal ³, Tamkeen Saleem ⁴

¹ MS Scholar, Department of Clinical Psychology, Shifa Tameer e Millat University Islamabad, Pakistan.
Email: hooriaazamkhan@gmail.com

² MS Scholar, Department of Clinical Psychology, Shifa Tameer e Millat University Islamabad, Pakistan.
Email: radaffatima24@gmail.com

³ MS Scholar, Department of Clinical Psychology, Shifa Tameer e Millat University Islamabad, Pakistan.
Email: rifatafzal@yahoo.com

⁴ Associate Prof./HOD, Department of Clinical Psychology, Shifa Tameer e Millat University Islamabad, Pakistan.
Email: tamkeen.dcp@stmu.edu.pk

ARTICLE INFO

Article History:

Received: May 24, 2024

Revised: August 23, 2024

Accepted: August 24, 2024

Available Online: August 25, 2024

Keywords:

Stress

Anxiety

Depression

Introverts

Extroverts

Funding:

This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors.

ABSTRACT

The primary aim of this current research endeavor was to undertake a comprehensive examination of Depression, Anxiety, and Stress levels within the distinct contexts of introverts and extroverts. The study adopted a methodological approach rooted in Cross sectional research design in current research study. Convenient sampling strategically was employed to gather data from 100 university students from universities of twin cities of Rawalpindi and Islamabad, Pakistan. The selection of participants was contingent upon their identification as either introverts or extroverts, and this stratification sought to elucidate nuanced differences in psychological well-being. To collect the data, two key measurement instruments were administered to the participants, Depression Anxiety Stress Scale (DASS-21) was utilized to quantify the levels of Depression, Anxiety, and Stress, while the Introversion Scale (IS- 18) facilitated the categorization of individuals as either introverts or extroverts. For data analysis Statistical Package for Social Sciences (SPSS) was used, and the scores of independent sample T test, showed no statistically significant differences in the levels of Depression, Anxiety, and Stress between individuals classified as introverts and those identified as extroverts

© 2024 The Authors, Published by iRASD. This is an Open Access article distributed under the terms of the Creative Commons Attribution Non-Commercial License

Corresponding Author's Email: hooriaazamkhan@gmail.com

1. Introduction

This study is all about looking into how shy or quiet people (introverts) and outgoing and social people (extroverts) deal with feeling really worried or sad. The research will aim to figure out if there are differences in how much anxiety and depression they might experience. Introverts like time alone and may not be as outgoing, while extroverts are the opposite, they love being around people and being social. Understanding how these personality traits relate to mental health is important, and research will explore this connection. Our goal is to find out if introverts and extroverts tend to feel stress, anxiety or depression differently. By doing this research, we hope to learn more about how personality influences mental well-being. This understanding could help us develop better ways to support and help people based on their unique personalities, whether they are introverted or extroverted.

The World Health Organization (WHO) emphasizes the significance of recognizing stress as a global concern that transcends geographical and cultural boundaries (World Health Organization, 2023). Stress is not inherently detrimental; rather, it serves as an adaptive mechanism that prompts individual's to navigate challenges. However, chronic or excessive stress can lead to adverse health outcomes, making it imperative to explore effective coping

strategies and interventions. Depression, a complex and pervasive mental health condition, transcends mere fluctuations in mood and encompasses a spectrum of debilitating symptoms that significantly impact an individual's daily life. As stated by the World Health Organization (WHO), 264 million people approximately are affected with depression making it one of the common causes of disability universally (World Health Organization, 2021). Its multifaceted nature is underscored by the intricate interplay of biological, psychological, and environmental factors that contribute to its onset and progression. The prevalence of depression has been steadily rising, prompting an urgent need for comprehensive understanding of its etiology, risk factors, and effective intervention strategies. A myriad of studies has illuminated the intricate connections between depression and various aspects of one's life, from genetic predispositions Sullivan (2020) to the socio-economic environment (Lorant et al., 2003). This underscores the importance of adopting a holistic approach to comprehend the nuanced complexities of depression. Extroverts are often characterized by a wide social circle and frequent social engagement. Studies have explored how extroversion influences the quality and quantity of interpersonal connections (Fleeson, Malanos, & Achille, 2002). Jung's theory of introverts and extroverts was developed in the early twentieth century and has since become a foundational piece of modern personality psychology. As per Jung's concept of introverts and extraverts, a cornerstone of his broader personality theory, outlined in his seminal work, "Psychological Types" (1921). According to Carl Jung;

Introverts: Introverts are characterized by a focus on internal thoughts and experiences (Jung, 1921). They often exhibit reserved and reflective tendencies, preferring smaller social interactions or solitude to larger gatherings.

Extroverts: Extroverts, in contrast, direct their attention outward, engaging actively with the external environment (Jung, 1921). They tend to be outgoing, social, and energized by interactions with others.

Jung's theory goes beyond common misconceptions about introverts and extroverts,

Provide nuanced understanding of these personality types. Despite criticisms for being simplistic and lacking in accounting for individual differences, Jung's theory remains influential in psychology, offering a valuable framework for understanding human behavior and personality.

Jung proposed that orientations are innate and shape individuals' preferences in social, cognitive, and emotional domains. While Jung's theories have significantly influenced personality psychology, contemporary research often builds upon and refines these concepts to account for a broader understanding of personality traits (Eysenck, 1991). Anxiety and depressive disorders, both highly prevalent and commonly comorbid, are integral components of internalizing disorders. This review synthesizes key statistics, highlighting the substantial overlap between these conditions. Genetic factors, shared neural pathways, and developmental aspects contribute to their complex relationship. Comorbidity often emerges during development, with anxiety disorders frequently preceding major depressive disorder. The impact of comorbid anxiety symptoms on treatment outcomes is evident, with implications for severity and response. This literature highlights the importance of our perceptive of the interconnected nature of anxiety and depression for effective diagnosis and treatment (Kalin, 2020).

The other study investigated a significant interrelation between emotional and personality dimensions. Specifically, it suggests a potential linkage between the extrovert/introvert dimension of personality and the hedonic dimension, encompassing emotions such as happiness/sadness. Similarly, the neurotic dimension appears to be associated with emotional arousal. Furthermore, the findings indicate that distinct personality traits are correlated with fundamental emotions. For instance, individuals characterized as excessively self-centered may experience feelings of revulsion or depression, however aggression and worry align with their abnormal personality. The result proposed a conceptualization of the neural underpinnings for both personality and emotions, wherein extroversion corresponds to joy and dopamine (DA), introversion to disgust and 5-HT, neuroticism to aggression and worry and noradrenaline (NE), and stability to peace. Moreover,

it suggested that personality disorders like introversion and extroversion can be affected by the regulation of emotions and neurotransmitters (Dong et al., 2022).

The previous studies identify significant gaps in understanding the correlation in between personality traits, such as introversion and extroversion, and psychological distress, including stress, anxiety, and depression. While existing studies have explored the prevalence of these mental health issues, there's a lack of research specifically examining how personality dimensions influence them. Dong et al. (2022) proposes neural underpinnings for personality and emotions, suggesting correlations between introverts and extroverts and emotional experiences, but direct examination lacks. Noviana & Oktaviani (2022) found a correlation between personality types and academic proficiency, yet the impact on psychological well-being remains underexplored, especially in the context of Pakistani educational stress. In the Pakistani context, where educational stress is common, understanding the influence of introversion and extroversion on psychological distress among students is crucial. While existing research highlights the prevalence of stress, anxiety, and depression, particularly in students, there seems to be lack of focus on how personality influences these outcomes. Pakistani culture, with its emphasis on collectivism and social harmony, may shape how personality traits interact with psychological distress. By investigating the levels of stress, anxiety, and depression between introverts and extroverts, the proposed research aims to address the loophole in the study regarding the relationship between personality traits and psychological distress. This will add in the better insight on the way personality influences mental health outcomes. Understanding the potential differences in psychological distress between introverts and extroverts can inform the development of targeted intervention and support strategies. For example, if introverts are found to experience higher levels of stress, anxiety, and depression, tailored interventions specialized in coping strategies suitable for introverted individuals may be beneficial.

2. Method and Materials

In this study Cross sectional research design was used for analyze multiple variables and to collect data at a single point of time. Convenient sampling technique was used in order to collect data the from the population. A total of 100 participants were selected for participation. The collection was done from university students of twin cities of Pakistan (Islamabad and Rawalpindi). The age eligibility for the sample was in between 18 to 30 years. Both male and female students got fair opportunity for participation in the research. The introversion scale was developed by McCroskey, is a self-report questionnaire with Cronbach's alpha reliability .88, in order to evaluate a person's level of introversion, distinct from communication apprehension. This scale employs items drawn from the work of Eysenck. The scale consists of 18 items, each addressing aspects of introversion unrelated to communication apprehension. Respondents rate their agreement or disagreement about each question on a Likert scale, typically ranging from 1 (Strongly Disagree) to 5 (Strongly Agree) (McCroskey, J. C, 1984). The DASS-21, or the Depression Anxiety Stress Scales - 21, is a commonly used self-report questionnaire developed to evaluate the severity of symptoms associated with depression, anxiety, and stress. The Depression Anxiety Stress Scales (DASS-21) includes three self-report scales developed to quantify the condition of depression, anxiety, and stress. The DASS-21 is been revised from the 42-item DASS and contains 21 items, with 7 items per subscale. The depression subscale, anxiety subscale and stress subscale. Respondents rate each item on a 4-point scale from 0 to 3 (0: Did not apply to me at all, 1: Applied to me to some degree, or some of the time, 2: Applied to me to a considerable degree, or a good part of the time, 3: Applied to me very much, or most of the time). The severity of the scores is categorized into five ranges for each subscale, Depression Subscale (Normal: 0-9, Mild: 10-13, Moderate: 14-20, Severe: 21-27, Extremely Severe: 28+),

Anxiety Subscale (Normal: 0-7, Mild: 8-9, Moderate: 10-14, Severe: 15-19, Extremely Severe: 20+) and Stress Subscale (Normal: 0-14, Mild: 15-18, Moderate: 19-25, Severe: 26-33, Extremely Severe: 34+). Cronbach's alpha ranges from 0.88 to 0.90. These reliability coefficients indicate that the DASS-21 subscales have good internal consistency, meaning that the items within each subscale are highly correlated and measure the same construct (Lovibond & Lovibond, 2011).

3. Procedure

In the present study, cross sectional research design was used. There were 100 participants in the sample. The sample was collected from university students of Islamabad, Pakistan. Participants were from the age of 18 to 30 years. The convenient sampling technique was used to collect the sample. Participants were given written informed consent. Assurance was given to them that their data was kept confidential. The instructions were provided in both written and verbal forms, making sure that they understood about the process of the study. The right to withdraw from the study was provided. After receiving the informed consent, the participants were requested to fill out the demographic variable sheet and then given the Depression, Anxiety, Stress Scale (DASS-21) and Introversion Scale (IS-18) to fill out.

4. Ethical Considerations

The present research was conducted under professional supervision. Ethical approval was be attained from Department of Psychology, Ethics Committee, along with the head of institutes. In addition, consent form was obtained from the participants, and they had the right to withdraw from the research at any point; on their own free will. None of the participants were forced to take part in the study. All information given to the participants was kept confidential. Every participant was given a comprehensive explanation about why the study is conducted. No physical or psychological harm was given to the participants.

5. Results

The current research focuses on to assess the levels of stress, anxiety and depression among introverts and extroverts. Appropriate statistical analysis was used to analyze the data. All analysis was done through SPSS-22 software. The mean and standard deviation was determined by descriptive statistics of the sample (Table 1). Frequency and Percentage Values of Demographic Variables Gender, Age, Birth Order, Family Type, Marital Status and Socioeconomic Status (Table 2). Severity Ranges of Introversion Scale and Depression, Anxiety and Stress Scale (Table 3). Descriptive of Scales, Introversion Scale was used to screen out the introvert and extrovert individuals and Depression, Anxiety and Stress Scale (DASS-21) was included in the current study (Table 4). To evaluate group differences Independent Sample T Test (Table 5) was utilized in comparing two sample means of stress, anxiety and depression among introverts and extroverts.

Table 1: Descriptive Characteristics of Demographics Variables in Terms of Gender, Age, Birth Order, Family Type, Marital Status and Socioeconomic Status (n = 100)

	N	M	SD
Gender	100	1.65	.479
Age	100	22.32	2.098
Birth Order	100	2.04	.864
Family Type	100	1.63	.485
Marital Status	100	1.04	.243
Socioeconomic Status	100	2.10	.414

Note: N= Number of Participants; M = Mean; SD = Standard Deviation

The Table 1 represents the mean, standard deviation, minimum and maximum values of gender, age, birth order, family type, marital status and socioeconomic status of the sample.

Table 2: Frequency and Percentage Values of Demographic Variables (n = 100)

S.no	Variable	f (%)	
1	Gender	Male	35 (35)
		Female	65 (65)
2	Age	20-30	100 (100)
3	Birth Order	1 st Born	30 (30)
		2 nd Born	41 (41)
		3 rd Born	24 (24)
		Other	5 (5)
4	Family Type	Joint	37 (63)
		Nuclear	63(63)
5	Marital Status	Single	97(97)
		Married	2 (2)
		Divorced	1 (1)
6.	Socioeconomic Status	Lower	3 (3)
		Middle	85 (85)

Note: f = Frequency; % = Percentage

Table 2 illustrates the frequency and percentage of demographic variables of the study. Sample of 100 introverts and extroverts were gathered. The sample consisted of the participants belonging to the age range of 20-30 and both genders i.e. males and females. There were 50 introverts and 50 extroverts which were screened out through introversion scale. Factors such as age and socioeconomic status might impact the study's findings on introverts and extroverts

Table 3: Severity Ranges, frequency and percentage of Introversion Scale and Depression, Anxiety and Stress Scale

IS	Scoring		f (%)		
DASS	Extroverts	0 - 24	50 (50%)		
	Ambiverts	25 - 47	0 (0)		
	Introverts	48 - 60	50(50%)		
	Severity Ratings	100(100%)			
	Normal	Mild	Moderate	Severe	Extremely
Depression	0 - 9	10 - 13	14 - 20	21 - 27	28 +
Anxiety	0 - 7	8 - 9	10 - 14	15 - 19	20 +
Stress	0 - 14	15 - 18	19 - 25	26 - 33	34 +

Note: IS = Introversion Scale; DASS = Depression, Anxiety and Stress Scale

Table 3 indicates the scoring and severity ranges of introversion scale and depression, anxiety and stress scale. The data was collected from 130 individuals. During the screening process, 30 participants were excluded who identified as ambiverts, while 100 individuals who identified as introverts and extroverts were included in the study.

Table 4: Psychometric Properties of Introversion Scale and Depression, Anxiety and Stress Scale (N=100)

Scales	Range						
	K	A	M (SD)	Min	Max	Skewness	Kurtosis
IS	18	.88	40.98 (15.10)	19	60	.05	-1.81
DASS	21	.87	45.56 (10.82)	22	72	.03	-.59
SD	7		14.77 (4.18)	7	26	.25	-.392
SA	7		15.4 (4.55)	7	28	.39	-.43
SS	7		15.3 (3.87)	8	26	.21	-.36

Note. IS = Introversion Scale; DASS = Depression, Anxiety and Stress Scale; α = Cronbach's Alpha reliability; M = Mean; SD = Standard Deviation; SD = Subscale Depression; SA = Subscale Anxiety; SS = Subscale Stress.

The table 4 indicates descriptive statistics of the scales used in the research. The skewness of IS was less than 1 which shows that the data is normally distributed and positively skewed, whereas on the other scale DASS, the skewness was .031 which shows that data is less than 1 and is acceptable.

Table 5: T-test for Mean Comparison between Introverts and Extroverts in Levels of Depression, Anxiety, and Stress (N=100)

Variables	Introverts (n = 50)	Extroverts (n = 50)	T (98)	p	CI 95%		Cohen's d
	M (SD)	M (SD)			LL	UL	
DASS	46.02 (9.55)	45.10 (12.03)	.42	.673	3.39	5.23	.08

Note. DASS = Depression, Anxiety and Stress Scale; M = Mean; SD = Standard Deviation; CI = Confidence Interval; LL = Lower Limit; UL = Upper Limit.

An independent sample t-test was conducted in order to compare the levels of stress, anxiety and depression among Introverts and Extroverts. There was no significant difference ($t(df)=98, p= .67$) in scores of introverts ($M=46.02, SD=9.55$) and extroverts ($M=45.10, SD=12.03$)

6. Discussion

This study focused on to explore the psychometric properties of the Introversion Scale (IS) and the Depression, Anxiety, and Stress Scale (DASS), including to investigate differences in levels of depression, anxiety, and stress between introverts and extroverts. The findings shed light on the reliability of the scales and provided insights into potential variations in psychological distress between personality types. Firstly, the psychometric properties of the IS and DASS were examined, demonstrating suitable levels of internal consistency as suggested by Cronbach's alpha coefficients. The IS exhibited high reliability ($\alpha = .88$), while the DASS also demonstrated good internal consistency ($\alpha = .87$). Moreover, the means and standard deviations of both scales allowed for an understanding of the distribution of introversion and psychological distress scores among the participants.

The t-test for mean comparison between introverts and extroverts revealed no statistical relevance in levels of depression, anxiety, and stress. Both groups reported similar mean scores on the DASS, suggesting that introversion or extroversion alone may not significantly influence psychological distress levels in this sample. The small effect size (Cohen's $d = .08$) further supports this finding, indicating a negligible difference between the two personality types in terms of psychological distress. These results may provide an insight about this complex relationship between personality traits and psychological well-being. While introversion and extroversion are often associated with different social behaviors and preferences, they may not necessarily be strong predictors of depression, anxiety, and stress levels in isolation. Other than that coping strategies, life events, and social support networks can play a substantial role in determining an individual's psychological well-being. According to tripartite model of anxiety and depression, suggests that anxiety and depression are linked with negative affectivity (NA), while depression is interpreted with low positive affectivity (PA). The findings indicate that while introversion may contribute to Symptoms of depression due to lower PA, it may not be a strong predictor of anxiety in isolation (Clark & Watson, 1991). One of the studies discusses the role of self-efficacy beliefs in coping with stressful life transitions. While not directly focused on introversion and extroversion, it highlights the importance of individual differences in coping strategies and resilience in duplicating the effect of stressors on mental health, suggesting that personality traits alone may not determine psychological distress outcomes (Jerusalem & Mittag, 1995). Behavioral theories and treatments of depression emphasized the multifaceted nature of depressive symptoms and its value in viewing behavioral and cognitive factors in learning and treating depression. It suggests that while introversion may contribute to certain aspects of depression, other factors are likely involved in determining overall levels of depression (Lewinsohn & Gotlib, 1995).

6.1. Limitations and Suggestions

1. The study was constrained by a small sample size and convenience sampling technique was used which potentially limited the generalizability and issues related to participants fully representing a population, the future researches should aim to include larger and more diverse samples and sampling techniques to improve the generalizability and complete representation of a population.
2. Data collection exclusively from a single university and regional specificity and the cultural factors could have restricted the breadth of perspectives and experiences represented in the research. Utilizing data from multiple universities would have enhanced the study's comprehensiveness.
3. The limited duration of data collection restricted the amount of data gathered, potentially hindering the depth of analysis and insights derived from the study, highlighting the need for a longer data collection period to gather a larger volume of data for more in-depth analyses and richer insights.
4. The potential areas for future researches can be based on other personality dimensions influencing psychological distress; it would help in exploring the types of personalities in depth.

7. Conclusion

In conclusion, this current study's objective is to inquire about the levels of depression, anxiety, and stress among introverts and extroverts. Contrary to the initial hypothesis, the findings revealed no statistically significant differences in these psychological outcomes between introverted and extroverted individuals among the sample of university students in Rawalpindi and Islamabad, Pakistan. This suggests that personality orientation may not be a major factor in determining levels of depression, anxiety, and stress in this population. Moreover, this research also explores other potential factors which can influence mental health outcomes among introverted and extroverted individuals. These findings will benefit the mental health professionals in planning the management plan and interventions for introverts and extroverts.

References

- Clark, L. A., & Watson, D. (1991). Tripartite model of anxiety and depression: Psychometric evidence and taxonomic implications. *Journal of Abnormal Psychology, 100*(3), 316-336. <https://doi.org/10.1037/0021-843X.100.3.316>
- Dong, J., Xiao, T., Xu, Q., Liang, F., Gu, S., Wang, F., & Huang, J. H. (2022). Anxious Personality Traits: Perspectives from Basic Emotions and Neurotransmitters. *Brain Sciences, 12*(9), 1141. <https://doi.org/10.3390/brainsci12091141>
- Eysenck, H. J. (1991). Dimensions of personality: The biosocial approach to personality. In *Explorations in temperament: International perspectives on theory and measurement* (pp. 87-103). Springer. https://doi.org/https://doi.org/10.1007/978-1-4899-0643-4_7
- Fleeson, W., Malanos, A. B., & Achille, N. M. (2002). An intraindividual process approach to the relationship between extraversion and positive affect: Is acting extraverted as "good" as being extraverted? *Journal of Personality and Social Psychology, 83*(6), 1409-1422. <https://doi.org/10.1037/0022-3514.83.6.1409>
- Jerusalem, M., & Mittag, W. (1995). Self-efficacy in stressful life transitions. In A. Bandura (Ed.), *Self-Efficacy in Changing Societies* (1 ed., pp. 177-201). Cambridge University Press.
- Jung, C. G. (1921). Psychological types (H. Godwin Baynes, Trans.). In: London: Routledge & Kegan Paul.
- Kalin, N. H. (2020). The Critical Relationship Between Anxiety and Depression. *American Journal of Psychiatry, 177*(5), 365-367. <https://doi.org/10.1176/appi.ajp.2020.20030305>
- Lewinsohn, P. M., & Gotlib, I. H. (1995). Behavioral theory and treatment of depression.
- Lorant, V., Delière, D., Eaton, W., Robert, A., Philippot, P., & Ansseau, M. (2003). Socioeconomic inequalities in depression: a meta-analysis. *American journal of epidemiology, 157*(2), 98-112. <https://doi.org/https://doi.org/10.1093/aje/kwf182>
- Lovibond, S. H., & Lovibond, P. F. (2011). Depression Anxiety Stress Scales. <https://doi.org/10.1037/t01004-000>
- Sullivan, P. F. (2020). Predictors of Major Depression and Antidepressant Response in Patients with Myocardial Infarction: A Sub study of the Myocardial Infarction and Depression-Intervention Trial (MIND-IT). *PLOS ONE, 15*(4). <https://www.sciencedirect.com/science/article/abs/pii/S002239991630352X>
- World Health Organization, w. (2021). Depression. <https://www.google.com/url?q=https://www.who.int/health-topics/depression&sa=U&sqi=2&ved=2ahUKEwiSnZjdnqyJAxVrgf0HHVMMMYAQFnoECCYQAQ&usq=AOvVaw0CezViphmWeGxPW80I7eck>
- World Health Organization, w. (2023). Stress. <https://www.google.com/url?q=https://www.who.int/news-room/questions-and-answers/item/stress&sa=U&sqi=2&ved=2ahUKEwis5uimnqyJAxWs8LsIHSxbHokQFnoECBEQAQ&usq=AOvVaw2fCcr8TPr3zKhZNBmLPkEh>