

# MENTAL HEALTH CHALLENGES IN PHYSICAL DISABILITIES: THE IMPACT OF GENDER ON DEPRESSION, ANXIETY, AND STRESS

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## Abstract

Individuals with disabilities experience poorer mental health outcomes in comparison to their non-disabled counterparts; however, the degree to which disability impacts mental health remains ambiguous. This study employs this dataset to evaluate the correlation between disability and the diagnoses of depression and anxiety, in addition to assessing stress among adult populations. We measured the occurrence of mental health issues among 185 respondents. Chi square analysis estimated the odds of mental health diagnoses among physically disabled and not physically disabled samples. Gender differences were measured using the T test and for relationship among variables, Pearson Coefficient of correlation was used. Physically disabled people have significantly more probabilities of depression, anxiety and stress than non-physically disabled people,  $\chi^2(4) = 46.86$ ,  $p = .000$ ,  $\chi^2(4) = 76.82$ ,  $p = .000$ ,  $\chi^2(4) = 16.79$ ,  $p = .000$  respectively. There are significant means differences for males ( $M = 15.12$ ,  $M = 15.96$ , and  $M = 13.46$ ) and females ( $M = 21.12$ ,  $M = 22.05$ , and  $M = 20.42$ ) on depression, anxiety and stress scales respectively. Results show significant correlation among anxiety and depression ( $r = .86$ ,  $p = .000$ ), stress and depression ( $r = .92$ ,  $p = .000$ ) and between stress and anxiety ( $r = .89$ ,  $p = .000$ ). Results support that physically disabled people have lower mental health than non-physically disabled people.

**Key Words:** Physical Disability, Depression, Anxiety, Stress, Gender

## 1. Introduction

A physical disability refers to a condition that adversely affects an individual's capacity to execute physical tasks or to function effectively. Individuals with physical disabilities encounter greater limitations in social engagements compared to non-physically disabled population (Nurhayati et al., 2023). Those affected by physical disabilities frequently necessitate lifelong

assistance and face obstacles in sustaining or (re)defining their degree of autonomy (Dam et al., 2024). More over one billion people, or 15% of the whole population, are estimated by the World Health Organisation to have physical disability. This figure is anticipated to escalate due to demographic aging and variations in the prevalence of chronic health conditions (Martin et al., 2016). A research investigation examined the psychological stressors, mental health status, and self-perception among a cohort of 50 individuals with physical disabilities and 50 individuals without such disabilities, revealing that those with physical impairments exhibit significantly lower levels of self-esteem alongside elevated intensities of depression, anxiety, and stress, when contrasted with normative sample (Mushtaq & Akhouri, 2016). The mental health of individuals with physical impairments is of paramount importance (Qureshi et al., 2021). Persons with physical disabilities are at an increased risk of developing depression when compared to the overall population (Asdaq et al., 2024). Depression is characterized as A variety of specific behavioural or motor symptoms, including agitation or psychomotor retardation, suicidal ideation, general inhibition, weeping, impaired communication, substance dependencies, facial expressions of despair and sorrow, self-harm, negative verbal expressions, grievances, and dishevelled appearance, as well as cognitive, social, and biological symptoms. These include differences in weight, sleep disturbances, fatigue, diminished vigour and hunger, changed sexual function, generalised bodily soreness and pain, which, taken together, make it difficult for the person to receive reinforcement from their surroundings and cause issues with their day-to-day functioning. It is also essential to differentiate that “sadness” is an emotional state with adaptive functions, whereas depression constitutes a persistent condition primarily situated within the emotional domain, resulting in dysfunctionality within the individual's environment (Bernard, 2018). Dilhani and Karunanayake (2023) conducted a study on a sample comprising of 60 children aged between 6-15 years with physical disabilities and concluded that physical disability exhibited a statistically significant positive correlation with depression. According to Karki et al. (2023) depression represents one of the most prevalent mental health disorders globally, impacting approximately 300 million individuals and with 75% of these cases occurring in low- and middle-income nations. Individuals with physical disabilities constitute a vulnerable demographic and exhibit a higher susceptibility to depressive symptoms compared to the general populace. Their research was conducted on 162 individuals with physical disabilities residing in the Kathmandu district and they revealed that approximately 77% of participants with physical disabilities reported experiencing depressive symptoms. Similarly, a study conducted by Gebeyehu et al. (2020) investigated that nearly three-quarters of their data, specifically 70.5% of participants with physical disabilities were diagnosed with depression. The predominant mental health issues examined within the scholarly literature pertaining to individuals with physical disabilities include depressive disorders and mood disturbances, anxiety disorders, as well as social and behavioural challenges (Lal et al., 2022). Findings indicated that individuals with physical impairments typically encountered difficulties pertaining to social anxiety and the pursuit of lifelong education (Santos, 2023). Anxiety can manifest in a variety of contexts; at times, it presents as a mild condition that dissipates within a brief period, while at other instances it may persist for an extended duration and escalate to a degree that precipitates both physiological and psychological impairments (Asamoah, 2021). Within the realm of healthcare, individuals are predisposed to experience anxiety attributable to medical conditions, which can occasionally adversely influence clinical outcomes (Pritchard,

2009). Anxiety represents a disquieting subjective experience and is exhibited through maladaptive somatic and cognitive responses when individuals are beset by intrusive cognitions regarding an unpredictable future (Xi, 2020). Roy et al. (2023) executed a comprehensive survey amidst the COVID-19 pandemic, revealing that the occurrence rates for depression, anxiety, and stress were found to be 65.7%, 78.5%, and 61.4%, respectively. A multitude of factors were identified as being significantly associated with these mental health challenges, which included male gender, marital status characterized by being married, lower educational attainment, the presence of multiple impairments, comorbid medical conditions, suboptimal sleep quality, rural living conditions, auditory disabilities, the onset of disabilities later in life, and a positive COVID-19 test result. Individuals with disabilities, in contrast to their non-disabled counterparts, encounter heightened levels of psychological distress and exhibit a greater propensity to encounter determinants correlated with an increased prevalence of mental health disorders (Cree et al., 2020). According to Oxford Lerner's Dictionaries, stress can be defined as burden or apprehension produced caused by problems in someone's life or by having too much work to do (Oxford University Press, 2024). When mental health issues are common among persons with physical impairments in affluent nations, the danger may be considerably higher in a resource-poor nation like Pakistan, where social acceptance and knowledge of disability are still in their infancy. This study aims to determine whether individuals with physical disabilities experience anxiety, stress and depression. The main objectives of the current investigation were determining the degree of stress, anxiety, and depression in persons with physical impairments as well as the variations in stress, anxiety, and depression among the sample's genders.

## **2. Methodology**

### **2.1 Research Design**

The current study's research design was a cross-sectional and correlational.

#### **2.1.1 Sample**

Sample size was calculated by G-Power calculator, which suggested a total of 176 (Group 1 = 88, Group 2 = 88) sample size. A total of 185 sample (95 physically disabled population and 90 normal population) who voluntarily participated were randomly recruited from different organizations of Peshawar. They were aged between 15 to 50 years. Participants in the study had to meet certain inclusion and exclusion criteria, which were that, that both congenital and acquired physically disabled population with minimum age of 15 and maximum age of 50 will be sampled. Mentally disabled population were not the part of this study. The normal population should not have any psychiatric history.

#### **2.2.2 Instruments**

##### **2.2.3 Demographic Sheet**

The demographic sheet was consisted of participants' biological sex, age, qualification, job, family system, marital status, type of physical disability.

##### **2.2.4 DASS-21**

The 42-item DASS is condensed into the DASS-21, a self-reported questionnaire used to assess symptoms of negative emotions, such as stress, anxiety, and depression (Lovibond & Lovibond, 1995). Participants are required to express how they felt during the preceding week. The seven items on each subscale were rated on a 4 point Likert scale ranging from 0 to 3 i.e. did not apply to me at all, applied to me most of the time. Higher levels of stress, anxiety, and depression symptoms are indicated by higher mean scores for each subscale. The negative emotion symptoms are reflected in the overall mean score (Wenjie et al., 2020). According to Coker et al. (2018), the Cronbach's alpha values for stress, anxiety, and depression are 0.78, 0.89, and 0.81, respectively. The reliability coefficients of current study are, for depression subscale is 0.94, for anxiety subscale is 0.92 and for stress subscale is 0.92, which indicates that all the subscales show significantly high reliability.

### 3. Statistical Analysis

The data was analysed using the SPSS (Version 26.0). In descriptive analysis frequencies, percentages of the samples' demographics and means, standard deviations, skewness, kurtosis and reliabilities of the scales were measured. Pearson coefficient of correlation was used to assess relationships between study variables (depression, anxiety and stress). The t test was employed to observe mean differences between males and females. The Chi-square test was applied to the categorical data analysis.

### 4. Result

The purpose of the present study was to evaluate the prevalence of stress, anxiety, and depression in the community of people with physical disabilities and normal population and to investigate differences across gender. Besides descriptive statistics and reliabilities, independent sample *t*-test, Pearson coefficient of correlation and chi-square test were applied to achieve the objectives of the study. The demographic characteristics are shows that there was total 185 of sample, in which 95 (Males = 52, Females = 43) were physically disabled and 90 (Males = 44, Females = 46) were not physically disabled. The range of age of the current sample was 15 to 50 years. 50% of physically disabled sample were from nuclear family system and 50% from joint family system, similarly 58.9% of not physically disabled sample were from nuclear family system while 38.9% were from joint family system. 50.5% of physically disabled data reported their marital status as married, 44.2% unmarried, 1.1% divorced and 4.2% widow. 37.8% not physically disabled samples reported themselves as married, 58.9 unmarried 0.0% divorced and 3.3% widow. The mean of Depression Subscale (DASS-21) is  $M = 11.78(SD = 11.86)$ , Anxiety Subscale (DASS-21) is  $M = 11.78(SD = 11.43)$  and Stress Subscale (DASS-21) is  $M = 11.47(SD = 10.99)$ . Kurtosis for depression subscale is .06, for anxiety subscale is -.33 and for stress subscale is -.22 which is less than the criteria i.e kurtosis  $< \pm 2$  indicating that all the variables fall within the range (kurtosis  $< \pm 2$ ). Thus, data is normally distributed.

Table 1

*Correlations of study variables*

Variables	1	2	3
1.DEP	1		

2.ANX	.86***	1	
3.STR	.92***	.89***	1

\*\*. Correlation is significant at the 0.001 level (1-tailed). DEP= Depression, ANX= Anxiety, STR= Stress,

Table 1 tells us about the correlations among study variables. It shows a significant positive correlation between depression and anxiety ( $r = .86, p = .000$ ), depression and stress ( $r = .92, p = .000$ ) and between stress and anxiety ( $r = .89, p = .000$ ).

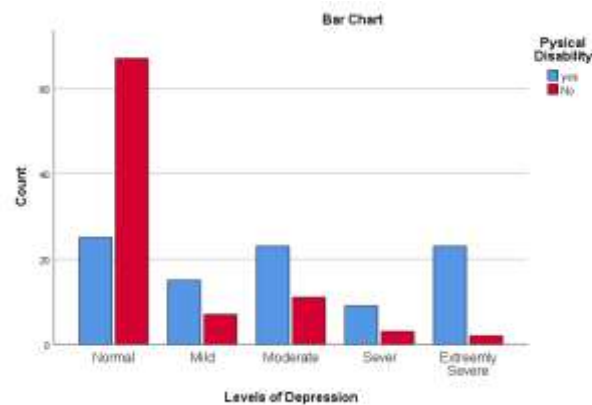


Figure. 1 presents levels of depression among physically and non physically disabled sample

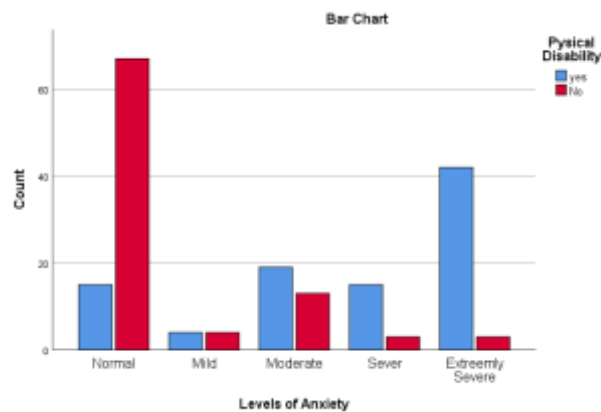


Figure. 2 presents levels of anxiety among physically and non physically disabled sample

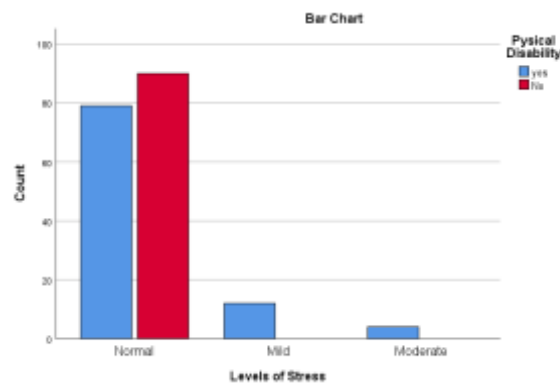


Figure. 3 presents levels of stress among physically and non physically disabled sample

Table 2

*Chi-Square Results for different levels of Depression, Anxiety, and Stress among Normal and Physically Disabled Population (N = 185)*

	Source	Physical Disability				$\chi^2$ (df)	p
		Yes		No			
		n	%	n	%		
Depression	Normal	25	26.3	67	74.4	46.86(4)	.000
	Mild	15	15.8	07	7.8		
	Moderate	23	24.2	11	12.2		
	Severe	09	9.5	3	3.3		
	Extremely Severe	23	24.2	2	2.2		
Anxiety	Normal	15	15.8	67	74.4	76.82(4)	.000
	Mild	04	4.2	04	4.4		
	Moderate	19	20.0	13	15.6		
	Severe	15	15.8	03	3.3		
	Extremely Severe	42	44.2	03	3.3		
Stress	Normal	79	83.2	90	100	16.59(4)	.000
	Mild	12	12.6	00	00		
	Moderate	04	4.2	00	00		
	Severe	00	00	00	00		
	Extremely Severe	00	00	00	00		

\*\*\* $p < 0.001$

To ascertain the presence of associations between each variable, we conducted a crosstabulation analysis employing Chi-square tests. The variables pertaining to depression, anxiety and stress were categorized into five different levels to facilitate the application of the The relationship between the categorical variables, Physical disability, Depression, Anxiety and Stress were

examined to look for associations. The frequencies corresponding to each variable pair, alongside the chi-square statistic and associated p-values, are enumerated in Table 2. A chi-squared test result presents the following values,  $\chi^2(4) = 46.86$ ,  $p = .000$  for Depression,  $\chi^2(4) = 76.82$ ,  $p = .000$  for Anxiety and  $\chi^2(4) = 16.79$ ,  $p = .000$  for Stress. The chi-square statistic serves to evaluate the independence of the observed frequencies in relation to the expected frequencies. These results, with significant p values have given strong support against null hypothesis and in favour of alternative hypothesis that Physical Disability and Depression, Anxiety and Stress are dependent and there is therefore some significant relationship between these variables. This test demonstrated that participants who were physical disabled were more probably to experience depression, anxiety and stress as compared to the participants who were not physically disabled.

Table 3

*Mean comparison of Males and Females with physical disability on Anxiety, Depression and Stress.*

Variables	Males n = 52		Females n = 43		<i>t(df)</i>	<i>p</i>	Cohen's <i>d</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>S.D</i>			
Depression	15.12	11.26	21.12	11.90	-2.52(93)**	.007	0.52
Anxiety	15.96	10.33	22.05	10.50	-2.84(93)**	.003	0.58
Stress	13.46	10.42	20.42	11.03	-3.16(93)***	.000	0.65

\* $p < 0.05$ , \*\* $p < 0.01$ , \*\*\* $p < 0.000$

Table 3 revealed significant mean changes in depression, anxiety and stress were found between males and females. The mean differences between males and females with physical disability on depression with  $t(93) = -2.52$ ,  $p < .01$ . Findings showed that females with physical disability exhibited higher score on depression scale ( $M = 21.12$ ,  $SD = 11.90$ ) as compared to males with physical disability ( $M = 15.12$ ,  $SD = 11.26$ ). The value of Cohen's  $d$  was  $0.52(>.5)$  which indicated large effect size. The mean differences between males and females with physical disability on anxiety with  $t(93) = -2.84$ ,  $p < .01$ , which revealed that females with physical disability exhibited higher scores on anxiety scale ( $M = 22.05$ ,  $SD = 10.50$ ) as compared to males with physical disability ( $M = 15.96$ ,  $SD = 10.33$ ). The value of Cohen's  $d$  was  $.58(>.5)$  which indicated large effect size. Similarly, the mean differences between males and females with physical disability on stress with  $t(93) = -3.16$ ,  $p < .01$ , which revealed that females with physical disability exhibited higher scores on anxiety scale ( $M = 20.42$ ,  $SD = 11.03$ ) as compared to males with physical disability ( $M = 13.46$ ,  $SD = 10.42$ ). The value of Cohen's  $d$  was  $.65(>.5)$  which indicated large effect size.

#### 4.1 Discussion

People with disabilities are more likely to have mental health issues as in the general population. They might require and utilise mental health treatments even more frequently than the general population. This study looked at the prevalence of mental health diagnoses and associated symptoms in groups of people based on their handicap status. Regardless of whether they were

diagnosed with anxiety or depression, we predicted that people with physical disabilities would have higher levels of psychological discomfort and anxiety and depression than people without physical disabilities. The mean values of Depression, Anxiety and Stress subscales of the whole sample were 11.78, 11.78 and 11.47 respectively. Result shows significant reliability values for depression, .94, for anxiety, .92 and for stress, .92. It was hypothesized that depression, anxiety and stress will be significantly and positively correlated.

Table 1 shows significant relationship among these three variables (depression, anxiety and stress). Our findings are in line with the study conducted in Saudi Arabia suggested, if someone has anxiety there will be high chances of having depression and stress, and they also found a significant correlation with depression and stress (Alshehri et al., 2024). According to Radulovic et al. (2024) physical disabilities have emerged as a significant contributor to life stress, and they also found a significant correlation between anxiety and depression. Life stressors can occasionally precipitate mental health disorders, including but not limited to depression, anxiety, and hyperactivity. In another study, patients with physical disability recruited and their results confirmed the occurrence of stress, depression and anxiety among them (Saha, et al, 2024). A study in Tamil Nadu found that differently abled persons exhibited more stress, depression, and anxiety, with significant correlations among these variables (Kuppuswamy & Jebaseelan, 2017).

In this current study It was hypothesized that there will be significant relationship of physical disability with depression, anxiety, and stress. The table 2 revealed an interesting difference in the occurrence of mental health disorders amongst people with physical disabilities as compared to people without physical disabilities and shows significant association of physical disability with depression, anxiety and stress. People with physical disability scored higher on depression scale as compared to normal population (Noh et al., 2016). Mental health impairment is strongly associated with physical health impairments (Strine et al., 2004). Stress and depression are significantly correlated among individuals with physical disabilities. Individuals with disabilities exhibit a heightened propensity for unemployment, demonstrate an increased likelihood of experiencing financial instability, depend on governmental support, report diminished health status, and are subject to elevated levels of discrimination, often resulting in the inability to engage in prior activities due to functional limitations of specific bodily systems, subsequently leading to stress and, ultimately, depression (Road, 2008).

It was also hypothesized that female physically disabled participants will have higher degrees of depression, anxiety and stress as compared to male participants. Table 3 indicates significant means differences for males ( $M = 15.12$ ,  $M = 15.96$ , and  $M = 13.46$ ) and females ( $M = 21.12$ ,  $M = 22.05$ , and  $M = 20.42$ ) on depression, anxiety and stress scales respectively. Supporting the hypothesis that females have higher negative emotions symptoms as compared to males. Noh et al. (2016) conducted a study on physically disabled population and they have concluded that female disabled population had higher score on depression scale as compared to male disabled population. Longitudinal analysis revealed that physically disabled individuals consistently show elevated depressive symptoms across genders and age groups (Turner & Noh, 1988). It is well established that there exists no significant disparity in the prevalence of depression between male and female individuals during the childhood stage. Empirical evidence indicates that boys exhibited a notably higher incidence of depressive symptoms compared to

girls; however, in the adolescent demographic, the prevalence of depression is markedly elevated in females relative to their male counterparts. The observed increase in depression rates among adult females aligns with the findings identified within the adolescent cohort (Girgus & Yang 2015). Numerous investigations have identified minimal or negligible gender disparities (Park et al., 2012; Girgus & Yang 2015). Conversely, other research has revealed distinct gender differences (Cole & Dendukuri, 2003; Luppia et al., 2012; Wild et al., 2012). The prevalence of depression and anxiety is notably elevated among women, a phenomenon that has been ascribed to various gender-associated determinants, including encounters with gender-based discrimination (LaMontagne et al., 2008). Women with chronic physical illnesses exhibit anxiety disorders at rates approximately twice that of men (Gadalla, 2008). Factors such as being young, single, and having specific chronic conditions (e.g., fibromyalgia) correlate with higher anxiety levels in women (Gadalla, 2008). Gender differences were noted, with females generally exhibiting worse mental health outcomes, including higher anxiety and stress levels (Bermejo-Franco et al., 2022). A study on self-esteem and social anxiety revealed that physically disabled women had lower self-esteem and higher social anxiety levels than men (Liaqat & Akram, 2014). Research on adolescents indicated that lower self-efficacy correlated with increased internalized psychological issues, including anxiety and stress, with significant gender differences observed (Raza et al., 2022). Females demonstrated lower self-efficacy and higher levels of anxiety compared to males (Raza et al., 2022). This propose that gender shows a vital role in the psychological experiences of physically disabled population. This research demonstrated that disability is significantly correlated with and serves as a factor which risky for the manifestation of depression, anxiety, and stress. Consequently, when implementing interventions aimed at preventing mental health complications among individuals with disabilities, it is imperative to take into account the gender disparities present within disability populations.

## **5. Conclusion**

Individuals with disabilities exhibit markedly elevated probabilities of receiving diagnoses linked to depression, anxiety, and stress. There is significant difference in the occurrence of depression, anxiety and stress among physically disabled and not physically disabled population. Gender differences in depression, anxiety, and stress, were also significant among physically challenged population.

### **5.1 Recommendations**

The implementation of studies addressing depression, anxiety, and stress among the disabled population reveals significant insights into effective interventions and the psychological challenges faced by these individuals, they are necessitating targeted interventions and mental health care services.

### **Abbreviations**

DEP = Depression

ANX = Anxiety

STR = Stress

DASS-21 = Depression Anxiety Stress Scale - 21

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### **Author's Contributions**

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### **Data Availability**

All data generated or analysed during this study are included in this article.

### **Declaration**

### **Ethics Approval and Consent to Participate**

Shaheed Benazir Bhutto Women University Peshawar gave it's approval to the study (Reference No. 58/RERC-QEC/SBBWU).

### **Consent for Publication**

Not applicable

### **Competing Interests**

No competing interests

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