



THE PREVALENCE AND CORRELATED FACTORS OF SELF-REPORTED SUICIDAL BEHAVIOR AMONG INDIVIDUALS WITH DISABILITIES

Muhammad Haris Khan Khattak¹, Rabia Rasheed², Syeda Maryam Gillani³, Muhammad Farhan⁴, Anam Qasim⁵, Syeda Manal Fatima^{6*}

¹MS (Clinical Psychology) Scholar, Department of Professional Psychology, Bahria University, Islamabad, Pakistan Email: m.hariskhankhattak@gmail.com

²MS (Clinical Psychology) Scholar, Department of Professional Psychology, Bahria University, Islamabad, Pakistan Email: rabiarasheed3765@gmail.com

³MBBS Student, Rawalpindi Medical University, Rawalpindi, Pakistan, Email: syedamaryam326@gmail.com

⁴MS (Clinical Psychology), Riphah Institute of Clinical and Professional Psychology, Riphah International University Lahore, Pakistan. Email: farhankhan2018@gmail.com

⁵MS Clinical Psychology, Department of Psychology, Foundation University, Rawalpindi, Pakistan. Email: anamqasim66@gmail.com

^{6*}MS (Clinical Psychology), Riphah Institute of Clinical and Professional Psychology, Riphah International University Lahore, Pakistan. Email: syedamanalfatima543@gmail.com

***Corresponding Author:** Syeda Manal Fatima
*Email: syedamanalfatima543@gmail.com

Abstract

Disability in Pakistan marginalizes a large percentage of the population. Both global pre- and post-pandemic research shows that people with disabilities are more likely to acquire mental health disorders, which raises their risk of self-harm and suicide. Understanding and resolving disability-related mental health issues is crucial to their community integration and Lahore's socioeconomic progress. However, Lahore lacks comprehensive data on disability-related suicide prevalence and causes. Thus, this study seeks to understand the extent and causes of suicide behavior in this population to inform targeted interventions and support systems. Lahore's three divisions' disabled residents were surveyed cross-sectional in September and October 2023 using probability proportional to size sampling. Socio-demographic, lifestyle, and health data were collected using a semi-structured questionnaire and the SBQ-R. Chi-square test was applied to examine determinants' effects on mental health. At an SBQ-R score cut-off of 7, 10.45% of individuals reported suicidal behavior, including ideation, attempts, or completion. At least 40% of respondents had suicidal thoughts at some point, and 9.01% did so in the past year. 8.87% of subjects told family members they were suicidal, and 5.94% predicted suicide. Female gender, various disabilities, and family and friend isolation were substantially connected with suicidal behavior. This study emphasizes the necessity of addressing mental health concerns and improving service accessibility to reduce disability challenges. These findings can help policymakers develop large-scale research and implement suicide prevention and management approaches for susceptible groups.

Keywords: suicidal ideation, physical handicapped, old age disabilities

Introduction

The state of one's mental health is among the most important issues that affect public health all over the world. An increase in the likelihood of suicide conduct across populations is frequently associated with the absence of treatment for prevalent mental health issues (Buerke et al., 2024). It is possible for suicidal behavior to appear in a variety of forms and intensities, including suicidal thoughts, attempts, and completed suicides. On an annual basis, around 730,000 people lose their lives as a result of suicide across the world, with over 79% of these fatalities happening in countries with low and moderate incomes. There are around 10,000 fatalities that occur yearly in Pakistan due to the fact that the suicide rate is claimed to be eight per 100,000 individuals. The true rate, on the other hand, is thought to be greater than what is recorded since many occurrences are labeled as accidental deaths rather than suicides due to the shame associated with suicide and the desire to escape social ramifications related to suicide (Nawaz et al., 2021).

The presence of a handicap itself appears to be a substantial risk factor for suicidal thoughts because of the evidence. About fifteen percent of the world's population is affected by some kind of disability, which might include a physical impairment (either in the upper or lower limbs), a vision disability, a speech disability, or a hearing disability. A number of studies conducted in the past have shown that anywhere between 5.6 and 10 percent of the population in Pakistan is affected by at least one type of impairment. The physical and mental health results of people with disabilities are much worse when compared to those of people who do not have impairments. There are a number of variables that contribute to this disadvantaged population's greater poverty rates, including a lack of access to healthcare facilities, lower levels of education, restricted social and economic involvement, and overall lower levels of education. This makes individuals more susceptible to mental health disorders since they are more likely to experience chronic stress as a result of constraints in their everyday activities, stigma, discrimination, isolation from wider society, and physical and financial dependence (Sawangchai et al., 2022). Due to the stigma associated with suicide and disability, as well as the absence of adequate resources, these individuals are prevented from seeking professional assistance, which reflects a double burden for this community that is already disadvantaged (Stacey et al., 2017). Additional symptoms that indicate mental health concerns were encountered during the COVID-19 pandemic. These symptoms might potentially raise the risk of suicide behavior among those who have impairments when the pandemic was ongoing. Evidence from nations with higher incomes indicates that individuals with disabilities reported a greater burden of suicide thoughts during the COVID-19 pandemic, ranging from 20.7% to 30.8%, in comparison to individuals without disabilities, who experienced this burden ranging from 4.1% to 8.3% (Roy et al., 2022). Depending on factors such as a person's age, gender, general health, the frequency of stresses, and whether or not they have attempted suicide or had suicidal thoughts in the past, suicidal thoughts and behavior might vary from person to person. According to the findings of previous research, these factors have an impact on the likelihood of engaging in suicide conduct (Marlow et al., 2021).

Despite this, Pakistan has not yet conducted any form of epidemiological study on the subject of suicide behavior among those who have been diagnosed with disability. These studies primarily determined the suicidal behavior among individuals who had certain functional limitations, such as disabilities due to chronic illnesses, multiple sclerosis, Huntington's disease, and intellectual disabilities (Acheampong & Aziato, 2018). Although suicidality among the general population has been investigated in the past, but those studies focused primarily on determining suicidal behavior among individuals with these functional limitations (Khazem et al., 2023). There is just one research that was carried out in Pakistan, and it found that the incidence of suicide thoughts among people with disabilities was 23.9% (Meltzer et al., 2012). The suicidal thoughts of individuals in a few regions of Pakistan were evaluated in this specific study; however, no evaluation method was utilized in the process. In light of this, there is a significant information gap concerning suicidal conduct. Our research, on the other hand, aims to conduct a survey throughout the entire country in order to determine the prevalence of suicidal behavior among this group of people and the factors that influence it.

Methods

Research Design and Sampling Strategy

Participants in the cross-sectional study were handicapped people who were connected to Pakistan's leading non-governmental organization (NGO) for disability rights, the Lahore Disability Development Center (LDDC). Furthermore, LDDC collaborates with over 350 OPDs and DSOs both domestically and internationally. The nine divisions (highest administrative units) of Punjab, namely Dera Ghazi Khan, Lahore, Faisalabad, Rawalpindi, Gujranwala, Multan, Sargodha, Sahiwal, Bahawalpur, and Sahiwal, included the participants, whose ages varied from 18 to 60. The bulk of LDDC grantees lived in Dera Ghazi Khan. People with a wide range of impairments, including those that impair their ability to walk, communicate, hear, or see, were taken into consideration for this study. Approximately 31,546 people with disabilities were receiving support from LDDC and its collaborative partners, the OPDs and DSOs, as of 2021.

Using probability proportional to size (PPS) sampling, a sample frame including an LDDC recipient list was produced. The entire sample was distributed across the beneficiary regions in accordance with the proportion of total beneficiaries serviced by each division in the selected OPDs and DSOs. All nine divisions were taken into account, and sampling was also employed to pinpoint particular geographic areas within each division based on the locations of the day surgery facilities and outpatient departments. Gulberg, Shadman, and Model Town are from Lahore; Faisalabad, Lyallpur Town, Jaranwala, and Tandlianwala; Rawalpindi, Murree, and Gujar Khan; Gujranwala, Wazirabad, and Kamoke; Multan, Jalalpur Pirwala, and Shujabad; Sargodha, Sargodha City, and Bhalwal; Sahiwal, Sahiwal City, and Chichawatni; Bahawalpur, Yazman, and Ahmedpur East; and lastly, Dera Ghazi Khan City and Taunsa. If a participant was pregnant, lacked verbal communication skills, had an intellectual handicap, was under the age of 18, or was older than 60, they were not allowed to participate in the study.

Sample Size

Regrettably, there is a scarcity of data regarding the mental health issues faced by individuals with disabilities, which hinders the accurate determination of the prevalence of suicidal behavior in this community. The sample size for this study was determined by estimating the prevalence rates of autism spectrum disorder (ASD) among mothers from previous studies conducted in Pakistan who had children with ASD. Individuals with disabilities experience social exclusion, barriers, and a diminished standard of living, which can exacerbate untreated common mental health issues and result in suicidal tendencies. Mothers of children with Autism Spectrum Disorder (ASD) were considered because of the similar challenges they face. Hence, a prevalence rate of 15.7% for suicidal conduct was utilized to determine the sample size. The projected sample size for this investigation was 353, taking into account a 99% confidence interval and a 5% margin of error. In order to account for a potential non-response rate of 10% and a design effect of 1.5%, a higher sample size of 353 was used. The sample size calculation was performed using the probability proportional to size (PPS) sampling method.

Instruments

In order to evaluate the main result of suicidal conduct, we employed the updated edition of the Suicidal Behaviour Questionnaire-Revised (SBQ-R). This questionnaire, which was originally translated into Urdu and administered to Pakistani university students during the second wave of the COVID-19 epidemic, has also been tested and confirmed to be effective among individuals with autism, functional impairments, and motor disabilities in the United States. The SBQ-R consists of four items, each addressing a distinct aspect of suicidality. Item 1 examines lifetime suicide ideation and attempts, item 2 measures the frequency of suicidal ideation in the past twelve months, item 3 evaluates the level of threat posed by suicidal behavior, and item 4 assesses the self-reported likelihood of engaging in suicidal behavior. In order to maintain uniformity with the current 4-item versions, the responses of the original questions were altered. We conducted a separate evaluation

of the total item scores for the SBQ-R. Afterwards, we computed the overall response by combining the final results. Previous literature was used to create dichotomous replies, with a threshold of 7. In addition to the existing body of literature and recognized variables that can influence the results, we incorporated the following socio-demographic data to examine the correlation with suicidal behavior: lifestyle, health and disease, and factors connected to seeking medical care.

The obtained socio-demographic data encompassed age, gender, educational attainment, disability type, occupation, religion, marital status, division, and residential region. Age and educational qualification were assessed based on the number of completed years. Initially, age was gathered as a continuous variable but then divided into three groups (18–35 years, 36–54 years, and above 54 years) to better understand the relationship between age and suicidal behavior. Participants were additionally queried regarding their food accessibility, duration of sleep, smoking habits, reception of family and community support, and self-care routines in order to comprehend lifestyle patterns. The sleep duration was determined by recording the actual number of hours slept, and then classified into standard durations based on previous research findings, with 7 hours serving as the reference point. The health and disease-related part encompassed the historical background of non-communicable diseases (NCDs) and other health concerns. In addition, the section on healthcare-seeking behavior addressed inquiries regarding typical procedures and obstacles encountered when seeking treatment.

Statistical Analysis

The study team used SPSS 26 to enter, organize, clean, and process all the data and STATA 13.0 to do statistical analysis. Initially, frequency and percentage were used for descriptive statistics. Group differences were identified using the χ^2 (Chi-square) test for categorical data and the independent sample t-test for continuous data.

Results

Table 1 Demographic Characteristics of disable persons (N=350)

Variable	F (%)	M(SD)
Male	204 (58.3)	
Female	146 (41.7)	
Age		29 (12.5)
Living Area		
Rural	179 (51.1)	
Urban	171 (48.9)	
Marital Status		
Married	83 (23.7)	
Un-married	267 (76.2)	
Occupation		
Employed	107 (30.5)	
Un-employed	132 (37.7)	
Do blue collar work	117 (33.4)	

The study included 350 individuals with disabilities (table1), comprising 204 males (58.3%) and 146 females (41.7%). The mean age of participants was 29 years (SD = 12.5). Regarding living area, 179 participants (51.1%) resided in rural areas, while 171 (48.9%) lived in urban areas. In terms of marital status, 83 participants (23.7%) were married, and 267 (76.2%) were unmarried. Employment status varied among the participants, with 107 (30.5%) employed, 132 (37.7%) unemployed, and 117 (33.4%) engaged in blue-collar work.

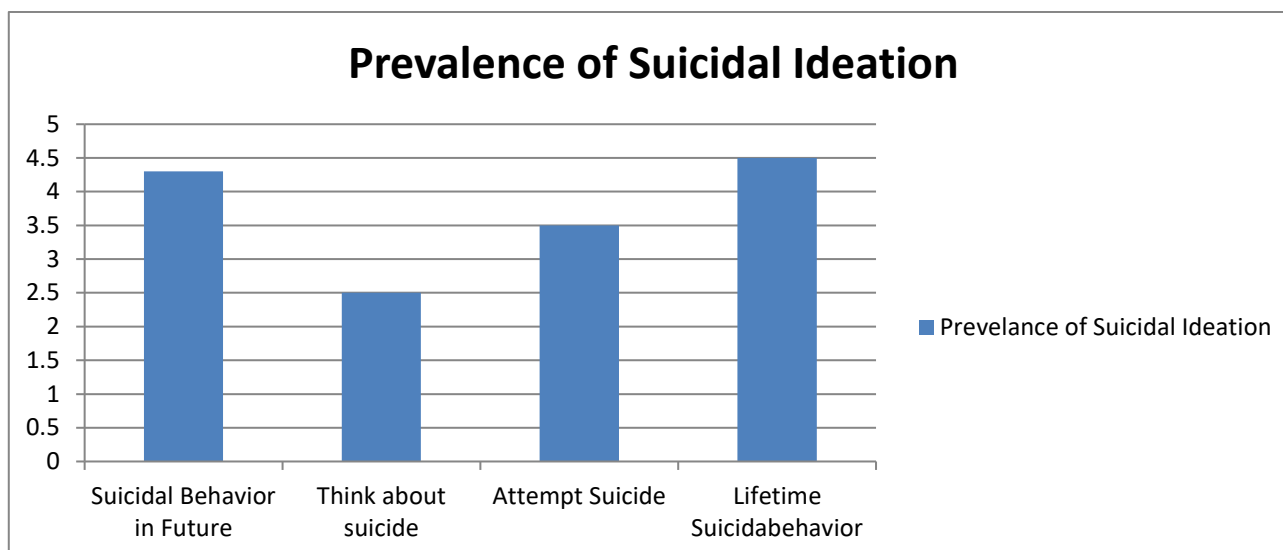


Figure 01 Prevalence of Suicidal Ideation among Disable persons

The prevalence of suicidal ideation among the participants revealed various concerning statistics (figure 01). Specifically, 4.3% of individuals reported a likelihood of engaging in suicidal behavior in the future, 2.5% had thought about suicide, 3.5% had attempted suicide, and 4.5% had experienced suicidal behavior at some point in their lifetime.

Table 2 Association of demographic variables and suicidal ideation

Variable	F (%)	Suicidal Ideation	Chi-square (P-value)
Male	204 (58.3)	17 (4.8)	3.21 (0.021)
Female	146 (41.7)	25 (7.1)	4.87 (0.001)
Living Area			
Rural	179 (51.1)	15 (4.2)	4.40 (0.01)
Urban	171 (48.9)	24 (7.0)	3.51 (0.032)
Marital Status			
Married	83 (23.7)	14 (4.0)	2.02 (0.02)
Un-married	267 (76.2)	19 (5.4)	3.45 (0.004)
Occupation			
Employed	107 (30.5)	5 (1.4)	1.44 (0.13)
Un-employed	132 (37.7)	16 (4.5)	2.76 (0.034)
Do blue collar work	117 (33.4)	11 (3.1)	2.98 (0.021)

The association between demographic variables and suicidal ideation among the participants showed significant differences. Males (4.8%) and females (7.1%) exhibited suicidal ideation with chi-square values of 3.21 (p=0.021) and 4.87 (p=0.001), respectively. Participants from rural areas (4.2%) and urban areas (7.0%) showed a significant association with suicidal ideation, with chi-square values of 4.40 (p=0.01) and 3.51 (p=0.032), respectively. Marital status also played a role, with married individuals (4.0%) and unmarried individuals (5.4%) having chi-square values of 2.02 (p=0.02) and 3.45 (p=0.004), respectively. Employment status revealed that employed individuals had a lower prevalence of suicidal ideation (1.4%) with a chi-square value of 1.44 (p=0.13), while unemployed individuals (4.5%) and those doing blue-collar work (3.1%) had chi-square values of 2.76 (p=0.034) and 2.98 (p=0.021), respectively.

Discussion

Suicide is a major social and public health issue in Pakistan, particularly influenced by the presence of disabilities. Numerous studies have significantly linked suicidal behavior and suicides with common mental health conditions. The COVID-19 pandemic exacerbated mental well-being, especially among vulnerable populations like people with disabilities. However, limited research exists on suicidal behavior among people with special needs, prompting our study to assess the

prevalence and determinants of suicidal behavior among persons with disabilities in Pakistan. These findings aim to inform evidence-based, inclusive strategies for reducing suicide rates among people with disabilities.

Compared to high-income countries, studies report higher suicide prevalence in low- and middle-income countries (LMICs) like Pakistan. However, few studies highlight suicide prevalence among people with disabilities in these regions. Our study found an overall prevalence of suicidal behavior at 10.45% among people with disabilities (Huang et al., 2018). Global studies similarly indicate a threefold increase in suicides among people with disabilities compared to those without. According to the International Classification of Functioning, Disability, and Health (ICF), interconnected factors like functional impairment, activity limitation, and restricted participation impact how people with disabilities access and participate in society, increasing their risk of mental health conditions (Andleeb et al., 2021). Unaddressed mental health issues can lead to more severe conditions and increased suicidality. Thus, early interventions, including early diagnosis, tailored therapy, and coordinated care at individual, community, and governmental levels, are essential.

Suicide is a heterogeneous phenomenon influenced by factors such as gender, age, culture, geography, and personal attributes like relationships, education, and income. In LMICs, disability is highly stigmatized, and intersecting factors like multiple disabilities and being female in male-dominant societies further increase the risk of suicidal behavior. Our study identified significant associations between suicidal behavior and being female, having multiple disabilities, poor family and friend connections, excessive sleep, and food inaccessibility, aligning with existing research (Osama et al., 2014).

Studies consistently report a gender disparity in suicide rates, with higher suicidal behavior among females, though successful suicide rates are higher among males. In patriarchal societies like Pakistan, women are often primary caregivers yet considered economic burdens, facing child marriages, and violence. Disability combined with marital issues, perceived failures, and family expulsion can trigger suicidal behavior among women. Gender-sensitive advocacy and mental health interventions are necessary to address this disparity (Arafat et al., 2020).

Our findings also emphasized that participants with multiple disabilities are more prone to suicidal behavior. Previous studies indicate that multiple disabilities increase the risk of suicidal thoughts and suicide by three to eight times. People with multiple disabilities face greater health issues and daily limitations, raising their cumulative suicide risk (Arafat & Al Mamun, 2019). Thus, accommodations at family, community, policy, and infrastructural levels, along with access to augmentative communication skills for health staff, are needed.

Prior studies across diverse settings report that low socio-economic status and food inaccessibility among people with disabilities are interrelated. Our study found that food inaccessibility increased suicidal behavior. Few employment opportunities and the strong link between poverty and disability result in financial dependence for basic needs. Inclusive policies ensuring access to poverty alleviation efforts, including livelihood and cash transfer programs, are essential for people with disabilities.

Research globally highlights family and friend connections as protective factors against suicidal behavior. However, many people with disabilities face barriers to social participation and fundamental rights. Family support is crucial for fulfilling emotional and resource needs. Our findings confirmed poor connections with family and friends are significantly associated with suicidal behavior. Therefore, encouraging access to social rights and community participation is important. Our study also reported that insufficient sleep is linked to suicidal behavior. Previous research from LMICs similarly highlights that sleep disruptions significantly influence suicidal thoughts and attempts. Educating this group on maintaining a healthy lifestyle, including adequate sleep, is necessary.

Suicidal behaviors often remain unreported or underreported, and our research reflects only part of the issue. In resource-poor settings like Pakistan, common mental health conditions burden females, low-income families, and people with disabilities. Reducing suicide rates is crucial for achieving the United Nations Sustainable Development Goals. A multisectoral strategy, including diverse

sector involvement and healthcare, is necessary to prevent suicide among people with disabilities. A national suicide prevention strategy might include media workshops and compassionate reporting of suicide cases. These findings can guide additional suicide prevention interventions, particularly for marginalized communities.

Limitations and Implications of the Study

There was no causal relationship between the variables in this cross-sectional analysis. Subsequent investigations should employ longitudinal study designs to examine the risk of suicide. Due to limited communication tools, the study specifically recruited individuals who had physical, speech, hearing, or vision impairments. The inclusion of individuals with psychosocial disabilities would likely have heightened the occurrence of suicidal behavior. The psychometric tools had established specific thresholds primarily for non-disabled individuals from Pakistan. Quantifying and classifying self-reported responses to suicide is challenging, which increases the likelihood of underreporting because to the stigma attached to admitting positive answers. Due to the exclusion of those without impairments, the study was unable to examine suicide behavior between those with and without disabilities. This comparison could have provided insight into the relative impact of social variables against concerns particular to disabilities. The substantial social disapproval associated with suicide behavior in Pakistan may have resulted in a lower number of reported cases, even though the field personnel, who were trained for this purpose, assured participants of privacy, confidentiality, and anonymity during the consent process. This study is the inaugural investigation of the suicidal risk factors among disabled individuals in Pakistan. Examining this delicate and insufficiently researched demographic can have an impact on intervention endeavors for this susceptible cohort. The study evaluated suicidal behavior on a broad scale by employing validated methods. Furthermore, it elucidated the majority of significant variables that could potentially distort the results, as identified in previous studies. Pakistan's largest disability organization employs a scientific methodology to monitor and analyze this demographic, establishing a strong basis for future extensive research endeavors.

Conclusion

The COVID-19 pandemic has had a notable effect on mental health, particularly in individuals with disabilities. We anticipate that the results of our nationwide survey will serve as a basis for future research and therapies that are especially created for people with impairments, as there hasn't been much research done on this particular group. Our research on the risk factors associated with suicidal behavior in people with disabilities may be useful for evidence-based treatments aimed at enhancing the mental health treatment system's inclusivity in Pakistan. Raising awareness of this issue within the nation's disability support system and expanding the accessibility of mental health treatments for individuals with disabilities are critical.

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