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Psychological factors of individuals with physical disabilities during COVID-19

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ABSTRACT:
Background: The virus that causes COVID-19 is mainly transmitted through droplets generated when an infected person coughs, sneezes, or exhales. These droplets are too heavy to hang in the air, and quickly fall on floors or surfaces. People with physical disability experience multiple risk factors for depressive symptoms, including stereotypic social and personal attitude; abuse; loss of roles; and stressors related to poverty, environmental barriers, and/ or lack of access to appropriate health care. **Objectives:** To assess the psychological factors of individuals with physical disabilities during Covid-19 **Methods:** This is a cross-sectional study involving 118 individuals with physical disabilities. Each filled out an online survey with three sections: a personal questionnaire, the hindi versions of the Hopkins Symptom Checklist-25 and the Fear of COVID-19 scale. Data regarding participants' baseline characteristics, fear and anxiety were collected and analyzed using the Chi-square test and regressions models. **Results:** Individuals with physical disabilities exhibited mild fear of COVID-19, with fear being correlated with age, educational level, and employment status. Furthermore, 22.9% of the population was found to be anxious. Anxiety was associated with both marital status and employment status. **Conclusion:** Results extracted showed that individuals with physical disabilities require substantial attention in order to manage their psychological state during pandemics.

Keywords:
Covid-19, Disability, Physical, Psychological, anxiety

INTRODUCTION

A physical disability is a physical condition that affects a person's mobility, physical capacity, stamina, or dexterity. This can include brain or spinal cord injuries, multiple sclerosis, cerebral palsy, respiratory disorders, epilepsy, hearing and visual impairments and more. A person can acquire a physical disability due to a number of reasons. These can be severe accidents, brain injuries, infections, diseases and as a side effect of disorders and other medical conditions, such as a stroke and dementia. The Corona-virus Disease-2019 (COVID-19) is a transmissible infectious disease caused by SARS-Cov-2, with an incubation period of 1–14 days in most entities. Its most reported clinical symptoms include fever, fatigue, pain, dry cough, and dyspnea. The implementation of effective preventive measures is thought to be the exclusive option to control its spread; such measures included social reactions, quarantine, and distancing. It is safe to say that the worldwide emergence of COVID-19 is currently menacing the well-being of individuals all over the world. During the COVID-19 pandemic, it has been perceived that mental health problems are increasing among general and vulnerable populations. Anxiety and stress along with accelerated levels of fear are some of the problems reported during this outbreak. Few studies aimed to assess the psychological outcomes of the COVID-19 pandemic and their impact on the social response.

Review of Literature:

A study conducted in China reported high levels of negative emotional indicators (anxiety and depression) among 17,865 individuals, which lead in turn to ameliorated social risk judgment and deteriorated life satisfaction. Another Canadian study indicated that the anxiety manifested among people influenced their thinking, behaviors and abilities in making decisions within the outbreak. These examples indicate the cruciality of evaluating the psychological impacts of the COVID-19 outbreak, given the negative sequel it may have on the community.

As mentioned, limited studies estimated the psychological impact of COVID-19 among the public healthcare professionals and vulnerable populations, including elderly patient's homeless individuals and pregnant women. Evidence is limited regarding the psychological effect of COVID-19 on individuals with physical disabilities. At baseline, these individuals may be more susceptible to mental health distress or have co-morbid underlying mental health conditions that increase their vulnerability during this time.

Objectives: To assess the Psychological factors of individual with disabilities during Covid-19

Methods: Universe/Population: Sample with 118 was selected and random sampling technique was used to select these respondents of 59 rural and 59 urban, those who worked in the units of health services.

Research Design: This research was a correlation and cross-sectional study. Participants were respondents of 59 urban and 59 rural in Patna. .

Tools and Techniques of Data collection: A cross-sectional online survey was carried out between April 2020 and June 2020 to assess the psychological state of subjects with physical disabilities during the epidemic of COVID-19. Eligible subjects were selectively chosen based on data (medical files, neurocognitive and physical assessments) taken from the centers' record-based archives.

Inclusion criteria covered any person aged above 18, having good comprehensive skills, and living with a physical disability due to an established medical diagnosis (traumatic brain injury, spinal cord injury, amputation, and other medical consideration) while disregarding the date of onset. Physical disabilities were categorized into Tetraplegia, Paraplegia, Hemiplegic, Paresis and Amputation. Hence, any patient below 18 years or suffering from any intellectual disorder or cognitive delay was excluded from the study.

Procedures:

After extracting the required data, 118 eligible subjects were contacted to introduce them to the study's aims and take their preliminary approval in participating. Out of all those contacted, 25 refused to enroll in the study. An online survey including a personal questionnaire, the Arabic versions of the Hopkins Symptom Checklist - 25, and the Fear of COVID-19 Scale was sent to the 138 participants. This was done either by mail or phone, depending on their preference. However, a total of 118 subjects signed the written consent form and completed the survey. Therefore, the present study included a convenient sample of 118 participants with physical disabilities. Along with the measurement scales, hindi written socio-demographic questionnaire was prepared. The questionnaire conveyed three main categories reflecting the general personal information, socioeconomic status, and medical history of participants. The measurement scales used were the Arabic versions of the Hopkins Symptom Checklist - 25 and the Fear of COVID-19 Scale.

The Hindi fear of COVID-19 scale (A-FCV-19S)

The Fear of COVID-19 Scale (FCV–19S) was first established in March 2020 by Ahorsu et al. its foremost purpose was to evaluate fear resulting from the spread of COVID-19. It includes seven statements; the individual is asked to precisely determine the level of his/her agreement or disagreement based on a five-point Likert scale. The total score is obtained by summing up the responses and ranges between 7 and 35.

Hopkins symptom checklist −25 (HSCL-25)

The Hopkins Symptom Checklist (HSCL) aims to evaluate the patients' psychoneurotic complaints. The scale is available in multiple versions, in which the number of items ranges between 25 and 90. The HSCL-25 was used within this study; it is a brief self-report screening test that validates the presence of anxiety and depression symptoms. This shortened version has been validated within several populations and translated into several languages, including Arabic. The checklist consists of 25 questions, with four response selections for each item (1 = not at all, 2 = a little, 3 = quite a bit, and 4 = extremely). The total score of the scale is obtained by summing up the 25 responses and averaging them together.

Statistical analysis

Data entry and analysis were conducted using the IBM SPSS Statistics version 22.0. Descriptive statistics were calculated for the socio-demographic characteristics, socioeconomic variables, medical history information, and participants' psychological symptoms. Means and Standard deviations (SD) were used to describe the A-FCV-19S score, a continuous variable. At the same time, categorical variables were presented by frequency and percentages. In order to estimate the univariate associations between demographic variables and fear of COVID-19, Poisson regressions were launched.

However, to assess the correlation between the different baseline characteristics of the participants and anxiety or depression, multiple logistic regressions were run. For this aim, the sample was divided into two groups: anxiety and non-anxiety groups based on the cut off value of the HSCL-anxiety subscale. And according to the cutoff proposed for the HSCL-depression subscale, the sample was divided into depression and non-depression groups. For assessing the relationship between categorical variables and anxiety or depression, a Chi-square test was used. All statistical tests were two-sided, and a p-value less than 0.05 were considered statistically significant.

Results: The population included 118 participants with physical disabilities. Males constituted the majority of 88.1% of the total sample. The average age of the participants was 37.75 ± 11.33 years, with 65.3% aging between 20 and 40 years and 34.7% aged between 41 and 68 years. Out of the total sample, 87.3% were married, and 12.7% were unmarried. Regarding the employment status, 66.1% were unemployed, while 33.9% had a financially productive job. As for the educational level, 76.3% of the sample was college-educated, and 23.7% were not. Finally, concerning the participants' outcome scores on the different psychological measures, they scored a mean of 15.77 ± 6.87 on the A-FCV-19S reflecting mild fear of COVID-19 among the total sample. In addition to that,

the population had a mean score of 1.62 ± 0.68 on the HSCL-25, 1.57 ± 0.69 on the HSCL-anxiety and 1.77 ± 0.77 on the HSCL-depression.

Somatic and emotional symptoms

In terms of somatic symptoms, results extracted from the A-FCV-19S showed that 9.3% of the participants exhibited an increase in heart rate and 6.8% complained of having wet hands whenever thinking about the COVID-19 virus. Moreover, 8.5% expressed that they were suffering from insomnia due to being afraid of infection. Consequently, the data taken out of the HSCL-25 revealed the appearance of several somatic symptoms within this population during the outbreak. 5.1% exhibited dizziness, 8.5% reported having a tremor in their whole body, 16.1% expressed being physically agitated, 21.2% had headaches and 14.4% felt tired.

As for the emotional symptoms, the A-FCV-19S revealed that during the outbreak 30.5% of the subjects felt afraid, 32.2% were annoyed, and 23.7% felt stressed. Additional symptoms were extracted from the HSCL-25, where 33.9% expressed feeling angry, 20.3% felt anxious and 31.4% reported sadness.

Associations between baseline characteristics of participants and fear of COVID-19

Since the A-FCV-19S does not have a cutoff, its total score was taken as a continuous variable, and therefore Poisson regression model was launched. The regression model showed a significant correlation of fear with age, educational level, and employment status. Participants whose ages were above 40 years presented higher fear levels than participants aging between 20 and 40 ($W_T = 2.565$, p-value = 0.032). Older participants were 2.096 times (1.980–2.227) as likely to experience fear compared to younger ones. Reaching college was associated with lower levels of fear as compared to the group who didn't attend college ($W_T = 15.036$, p-value = <0.0001). The risk of developing fear among participants who weren't college-educated was 1.774 times (95% CI 1.681 to 1.881) that of college-educated participants. Furthermore, unemployed participants demonstrated elevated levels of fear ($W_T = 1.129$, p-value = 0.013), with a risk of 2.155 times (95% CI 2.030 to 2.294) than those employed.

Associations between the baseline characteristics of participants and anxiety

Based on the HSCL-anxiety, 91 (77.1%) participants were classified in the non-anxiety group, whereas, 27 (22.9%) were classified in the anxiety group. The Chi-square test results, along with the multiple logistic regressions are reported. Chi-square tests showed a significant association between anxiety and marital status ($X^2 = 5.099$, p-value = 0.025); the anxiety ratio was higher for the married group. Moreover, the anxiety was higher for unemployed participants than the employed group ($X^2 = 2.130$, p-value = 0.036). For the multiple logistic regression analysis, the employment status was correlated with anxiety. It was reported that the risk of anxiety among the unemployed group was 2.088 times that of employed participants (95% CI 0.767 to 5.685).

Discussion

Different studies have proposed that subjects with physical disabilities can be considered a susceptible population for mental health disorders. Along with such suggestions, the emergence of a pandemic can accelerate the risk of developing mental health disorders expressed by depression, anxiety, fear, and worry among this vulnerable population. The current COVID-19 outbreak has imposed extra safety and preventive measures that have frustrated the different populations worldwide. During these times, comprehending and evaluating the psychological state of individuals with physical disabilities during the COVID-19 emergence can be regarded as highly crucial. Provided with such information, the different governments can establish the appropriate strategies not only to control the viral spread, but also, to ensure good mental health for individuals with physical disabilities.

The present study aimed to evaluate the psychological consequences of a pandemic among individuals with physical disabilities and study the associated factors influencing their mental health. The survey, along with the administered assessment tools indicated that the sample exhibited mild fear of COVID-19, with 22.9% suffering from anxiety and 31.5% having depression. In the current outbreak, the fast transmission of COVID-19 and its tremendous impact or threat imposed on the global healthcare systems induced a "public panic" resulting in elevated stress levels among the different populations. As a response to stress, humans usually demonstrate physiological, emotional, and behavioral alterations. Within this study, the physiological responses of the participants were manifested by increased heart rate in 9.3% of the subjects, wet hands in 6.8% of the subjects, insomnia in 8.5% of the subjects, dizziness in 5.1% of the subjects, headaches in 21.2% of the subjects and tremor in 8.5% of the subjects. In terms of emotional responses, 30.5% of the participants reported being afraid of COVID-19, 32.2% were annoyed, 23.7% were more stressed than usual, 20.3% were anxious, and 31.4% felt sad and unhappy. As for the behavioral responses, 33.9% were angry more than usual and 16.1% reported physical agitation and restlessness.

This study indicated that age, educational level and employment status are associated with fear of COVID-19 in individuals with physical disabilities. Participants aged 40 and above presented higher fear levels than the younger ones ($W_T = 2.565$, p-value = 0.032). This correlation might be explained by the contribution of age to mortality in older patients with COVID-

19. Moreover, participants with low educational levels exhibited a higher risk of fear than participants with high educational levels ($W_T = 15.036$, p-value = <0.0001). This can be explained by the fact that highly educated subjects are habituated to demanding work and might have a more stable monthly income enabling them to be more comfortable delivering their families' needs. Furthermore, unemployed participants were more prone to developing fear of COVID-19 ($W_T = 1.129$, p-value = 0.013). Individual with physical disabilities don't benefit from the government's financial support or health insurance. Thus, they have neither a stable monthly income nor medical coverage unless they are employed.

Furthermore, the anxiety state of the participants was significantly associated with both marital status ($X^2 = 5.099$, p-value = 0.025) and employment status ($X^2 = 2.130$, p-value = 0.036). In the logistic regression model, the risk of anxiety among the unemployed group was proved to be 2.088 times more than that of employed participants (95% CI 0.767 to 5.685, p-value = 0.040). Limited research about the association between employment status and anxiety exists, especially within participants living with physical disabilities. However, the findings observed within this study are consistent with researches highlighting the strong links between anxiety and status within the general population.

As for the depression state, the Chi-square results showed that it was linked to the marital status of the individuals (p-values = 0.022), with the risk of developing depression being 3.346 times more within the group of married when compared to the unmarried group (95% CI 0.715 to 15.661, p-value = 0.041). This can be explained by the fact that married persons living with physical disabilities are more likely to exhibit feelings of unproductively, which intensifies the risk of developing depression. The educational level was also reported as an associated factor to depression (p-values = 0.038). Those who weren't college-educated had a 2.538 more risk of developing depression than those who achieved a higher educational level (95% CI 0.880 to 7.318, p-value = 0.012). This is because individuals with high education are more likely to display protective mechanisms against the development of depressive symptoms, as they exhibit a sense of mastery associated with higher levels of self-esteem. Finally, the rural status of participants with physical disabilities was also related to depression (p-values = 0.027), where the urban group had a risk of 2.367 (95% CI 0.962 to 5.826, p-value = 0.034).

Thus, as the COVID-19 is spreading, this study will encourage establishing the appropriate strategies to support and manage psychological problems and amend mental health in individuals with physical disabilities. As an urgent step, the health authorities need to identify individuals with physical disabilities as a high-risk group for psychological distress during this pandemic and apply the required interventions. The targeted management strategies should be adapted to meet this population's needs while considering the different social distancing measures. It is plausible that online psychological approaches can be provided.

Thus, this might restrict the ability to generalize the findings, as this sample might not reflect the actual demographics of all individuals with physical disabilities. This study's results were grounded on self-reported levels of fear, anxiety, and depression, which propose the likelihood that the responses may be influenced by the participants' social or personal aspects. Moreover, information on the participants' psychological state at baseline was not available; thus, potential confounding factors could not be controlled. On the other hand, this study provides prominent information about the initial psychological response of individuals with physical disabilities during the COVID-19 outbreak.

Consequently, this study can be considered an exploratory one and a preliminary resource for upcoming studies targeting this population, especially that study concerning the impacts of COVID-19 on people with physical disabilities are limited worldwide and are null in the Arab world. Therefore, the findings extracted from this study serve as a call for the different countries worldwide to develop public health measures specific to this population's needs, especially during pandemics. On the other hand, governments and social associations should collaborate in helping people with physical disabilities overcome the barriers that might alter their coping ability during pandemics

Conclusion

The findings of this study advance the understanding of the initial psychological response of Lebanese individuals with physical disabilities during the crucial period of the COVID-19 pandemic. Findings should encourage the governments of bihar and specifically the Lebanese government to resource more information on mental health issues confronted by individuals with physical disabilities and consequently implement the appropriate psychological management approaches.

No conflict of interest was declared.

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