



The impact of pandemic fatigue on anxiety and quality of life in patients attending physical medicine and rehabilitation clinics

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Abstract

Objectives: The current study aims to investigate the impact of pandemic fatigue on anxiety and quality of life in patients visiting physical therapy and rehabilitation outpatient clinics.

Methods: A cross-sectional study was conducted involving 303 patients over the age of 18 who had not previously contracted COVID-19. These patients sought treatment at the Physical Medicine and Rehabilitation outpatient clinic for musculoskeletal disorders and reported experiencing symptoms of pandemic fatigue for at least one month.

Results: A low-level positive significant relationship was identified between COVID-19 anxiety and pandemic fatigue. Additionally, perceived health status demonstrated a low-level negative significant relationship with both behavioral fatigues, a sub-dimension of pandemic fatigue, and COVID-19 anxiety. Furthermore, a significant effect of COVID-19 anxiety on pandemic fatigue was observed, as well as a reciprocal significant effect of pandemic fatigue on COVID-19 anxiety.

Conclusion: The findings provide empirical evidence for policymakers, decision-makers, and clinicians studying pandemic fatigue and anxiety. It is recommended that stakeholders develop their plans and programs based on this evidence and draw appropriate conclusions from these findings.

Keywords: Pandemic fatigue, Anxiety, Quality of life, COVID-19, Health management.

Introduction

The World Health Organization (WHO) has characterized COVID-19 as the most impactful pandemic in history, defining it as a widespread occurrence of cases across a large geographical area over a specific period. In response to the negative effects of COVID-19, many countries have implemented emergency measures to mitigate its impact. The prolonged nature of the pandemic, coupled with restrictions on daily habits, the dissemination of misinformation about the disease, and heightened fears of severe illness-even in response to mild symptoms like a sore throat-has contributed to a complex situation that extends beyond health concerns. This complexity has been recognized as leading to what is termed pandemic fatigue (PF).^[1-4]

Pandemic fatigue is characterized by a range of symptoms, including physical and mental exhaustion, decreased motivation and attention, emotional outbursts, and heightened anxiety. Several studies have reported an increase in psychological issues, such as anxiety, depression, stress, and sleep disorders, associated with these symptoms.^[5,6] Throughout the pandemic, it has also been noted that fatigue frequently coincides with musculoskeletal complaints, including fibromyalgia, bodily pain, stiffness, muscle weakness, headaches, and limitations in movement.^[4,7]

The WHO has emphasized the importance of considering physical, mental, and socio-economic factors in promoting health and well-being. Evidence suggests that pandemic fatigue diminishes when individuals receive

adequate physical stimulation along with social and psychological support. Furthermore, COVID-19-induced fatigue has been shown to significantly impair individuals' quality of life. Some studies indicate that those experiencing the hallmark symptoms of PF struggle to meet their self-care and daily living needs.^[8-12]

It has become evident that there is insufficient information available to address the challenges faced by patients suffering from PF, many of whom require medical intervention. This situation has led to an increase in consultations at Physical Medicine and Rehabilitation (PMR) departments by individuals seeking solutions for musculoskeletal health issues.^[13] The current study aims to examine the effects of pandemic fatigue on anxiety and quality of life among patients attending PMR outpatient clinics and to provide empirical evidence on this topic. Theoretically, this study will contribute to the ongoing discourse surrounding PF by conceptualizing it as a form of fatigue arising from the continuous adaptation required in response to changing environments and circumstances. This fatigue may manifest as a perceived inability to "keep up" with various constraints. By integrating perspectives from social and health sciences, we argue that feelings associated with PF negatively impact patients' anxiety levels and overall quality of life. The primary challenges we faced in gathering information from patients seeking PMR were the number of participants and time constraints. However, we were able to overcome these difficulties through concise questioning and the expertise of the research team conducting the study.

Objectives

The present study aims to investigate the impact of pandemic fatigue on anxiety and quality of life in patients visiting physical therapy and rehabilitation outpatient clinics.

Methods

This study was conducted in the Diyarbakır province of Turkey. The study population comprised patients who visited the physical medicine and rehabilitation outpatient clinic at Gazi Yaşargil Training and Research Hospital, presenting with musculoskeletal disorders and experiencing at least some symptoms of pandemic fatigue. Data collection took place through face-to-face surveys conducted between September 10, 2021, and December 10, 2021.

The study was designed as an exploratory cross-sectional study, utilizing a relational screening model, which is a

causal comparison subtype of quantitative research methods. A physician-researcher, one of the authors of this study, administered the survey to patients with musculoskeletal complaints, regardless of whether they had contracted COVID-19. Questionnaires were distributed individually to patients, who completed them on their own before returning them to the researcher. The study adhered to the guidelines set forth by the Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) statement for reporting cross-sectional studies.

Participants in this study were patients over the age of 18 who had not contracted COVID-19 during the pandemic but presented with musculoskeletal disorders one month prior to their visit to the outpatient clinic and were experiencing symptoms of pandemic fatigue. The study aimed to uncover the physical, psychological, and social challenges faced by this patient population.

Over the course of three months, 2,000 individuals over the age of 18 sought treatment at the Physical Medicine and Rehabilitation clinic for musculoskeletal complaints and reported experiencing symptoms of pandemic fatigue for at least one month. Among these, 1,440 individuals experienced musculoskeletal pain despite not having COVID-19 in the preceding month. Of this group, 303 individuals met the inclusion criteria and were selected as the sample size [Figure 1].

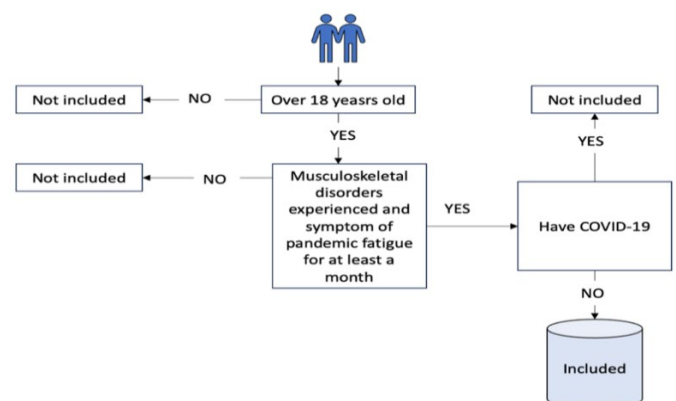


Figure 1. Sample selection process diagram

The sample size was calculated to be 303, using a 95% confidence interval and a 5% margin of error. To mitigate selection bias, every patient who met the inclusion criteria was informed about the study and voluntarily agreed to participate.

The sample size calculation formula is as follows:^[14]

$$n = (N \cdot t^2 \cdot p \cdot q) / (d^2 \cdot (N - 1) + t^2 \cdot p \cdot q)$$

Where:

- N represents the total number of individuals in the study population,

- n is the number of individuals to be sampled,
- p is the probability of occurrence of the event under study,
- q is the probability of non-occurrence of the event,
- t is a theoretical value corresponding to a specific degree of freedom and predetermined error level,
- d denotes the desired deviation ($\pm$) based on the frequency of occurrence of the event.

The data were collected using a demographic information form created by the authors and the Pandemic Fatigue Scale, developed by Lilleholt et al.,^[15] and validated in Turkish by Kurt et al.^[16] The sociodemographic information form included variables such as gender, age, marital status, educational level, and economic status. The Pandemic Fatigue Scale is a two-factor, 7-point Likert-type scale (1=Strongly disagree, 2=Disagree, 3=Somewhat disagree, 4=Neither agree nor disagree, 5=Somewhat agree, 6=Agree, 7=Strongly agree) consisting of six items.

The scale comprises two sub-factors:

1. Information Fatigue Sub-factor: This sub-factor consists of three items that measure fatigue resulting from news and information related to COVID-19.
2. Behavioral Fatigue Sub-factor: This sub-factor also contains three items that assess fatigue stemming from both desirable and undesirable behaviors and regulations in the fight against the COVID-19 pandemic.

Higher scores on the scale indicate severe pandemic fatigue, while lower scores suggest mild pandemic fatigue.

Data analysis

Multiple linear regression analysis was conducted to determine the impact of various variables on the dependent variables. A P-value of <0.05 was considered statistically significant, and results were analyzed at a 95% confidence level. All analyses were performed using IBM SPSS (version 25.0, SPSS Inc, Chicago, IL, USA).^[17,18]

Ethical considerations

The study was conducted in accordance with the Declaration of Helsinki. Ethical approval was obtained from the ethics committee of an Education and Research Hospital (decision number: IRB864-2021). Necessary administrative permissions were secured from the institution conducting the study. All patients included in the survey participated voluntarily, and oral consent was obtained from each participant. The present study did not interfere with the process of diagnosis and treatment of patients and all participants signed an informed consent form.

Results

Fifty-three percent of the participants in this research were men. Among four different age groups, individuals aged 34-49 comprised the largest segment. Additionally, most participants were married, resided in the city center, and were employed. The proportion of primary and secondary school graduates, as well as those with a monthly household income between 2001-3000 ₺, was higher than in other groups.

The multiple linear regression analysis indicated that the model, which included age, gender, pandemic fatigue, loss of a relative due to COVID-19, and vaccination status, explained approximately 12.5% of pandemic fatigue. Within this model, both pandemic fatigue and gender had a significant effect on COVID-19 anxiety. No multicollinearity was detected among the independent variables [Table 1].

The factors influencing participants' perceived health status were also evaluated using multiple linear regression analysis, revealing that the variables in the model explained approximately 24% of perceived health status. The independent variables negatively impacted perceived health status [Table 2].

Table 1. Factors Affecting COVID-19 Anxiety

	Unstandardized Coefficients		Standardized Coefficients	Sig.	VIF
	B	Std. Error	Beta		
(Constant)	9.636	2.927		0.001	
Age	0.012	0.023	0.032	0.599	1.254
Losing a relative to Covid-19	-1.268	0.663	-0.106	0.057	1.028
Vaccinated	0.251	0.834	0.017	0.764	1.041
Gender	-1.272	0.598	-0.117	0.034	1.018
Pandemic fatigue	0.145	0.027	0.298	0.000	1.026

Dependent Variable: Covid-19 anxiety, VIF: Variance inflation rate, R=0.354 R Square= 0.125 Durbin-Watson= 1.959 p=0.000

Table 2. The impact of the pandemic and individual characteristics on perceived health status

	Unstandardized Coefficients		Standardized Coefficients	Sig.	VIF
	B	Std. Error	Beta		
(Constant)	0.653	0.103		0.000	
Age	-0.004	0.001	-0.233	0.000	1.210
Gender	0.058	0.024	0.123	0.017	1.032
Anxiety	-0.009	0.002	-0.200	0.000	1.129
Pandemic fatigue	-0.013	0.004	-0.019	0.000	1.125

Dependent Variable: Perceived health status, VIF: Variance inflation rate, R=0.488 R Square= 0.238 Durbin-Watson= 1.812 p=0.000

Discussion

This study aimed to identify the physical, mental, and social problems associated with pandemic fatigue (PF) in patients who have not contracted COVID-19 but have experienced musculoskeletal disorders over the past month. These patients sought treatment at the PTR Polyclinic for this reason. We have presented evidence that can inform policymakers, decision-makers, and health managers. To raise public awareness and understanding of this issue, it is essential to provide relevant information and training, utilizing the evidence we have gathered.

Our findings indicate that pandemic fatigue did not vary by gender; however, COVID-19 anxiety exhibited significant differences based on gender. A study conducted in Poland found that women reported higher PF scores than men.^[19] Conversely, another study on COVID-19 anxiety concluded that gender did not significantly influence anxiety levels.^[1] A survey indicated that gender significantly impacted PF, with men experiencing pandemic fatigue nearly 1.5 times more than women.^[20] The discrepancies among these studies are not surprising, as individual personality traits, environmental factors, and other variables may contribute to varying experiences of pandemic fatigue.

Additionally, both behavioral fatigue scores—one of the sub-dimensions of PF—and COVID-19 anxiety scores were significantly higher among individuals who lost a relative due to COVID-19 compared to those who did not.^[21] Similar findings were reported in previous research, suggesting that the loss of a loved one heightens sensitivity to COVID-19, leading to increased anxiety and pandemic fatigue. Authors such as Colizzi et al.,^[22] and Mamun & Griffiths^[23] have noted that fear of COVID-19 often stems from concerns about infecting friends or loved ones. This fear can contribute to both COVID-19 anxiety and pandemic fatigue, as the loss of relatives exacerbates feelings of PF.

Furthermore, our study found a negative relationship between COVID-19 anxiety, pandemic fatigue, and overall health status. This outcome is expected, as heightened

anxiety and fatigue can weaken individuals' immune systems and adversely affect important emotional states. Previous studies have similarly demonstrated that COVID-19 anxiety and pandemic fatigue can impair health and contribute to mental illness.^[15, 24-26]

This study is one of the few that explores the impact of pandemic fatigue on COVID-19 anxiety and quality of life. The COVID-19 pandemic has been extraordinary, placing a significant burden on health expenditures across all aspects of society. One notable consequence of this epidemic is pandemic fatigue, a phenomenon that has emerged as a result of the ongoing crisis. It is crucial to examine the implications of this phenomenon, making this study particularly significant.

The findings of this research have the potential to inform future studies on this topic. Additionally, it will provide valuable evidence for clinicians and policymakers, outlining necessary steps to address these issues. These factors highlight the strengths of the study.

However, despite its strengths, this research also has some limitations. Firstly, it was conducted with a specific patient population, which may limit its generalizability to other health services. Another significant limitation is that this study was carried out in a public health institution, meaning that private health institutions may not fully represent their circumstances regarding pandemic fatigue and its effects.

Conclusions

This study demonstrates that pandemic fatigue significantly increases individuals' anxiety levels, although it does not directly affect quality of life. The positive correlation between pandemic fatigue and anxiety indicates that these two phenomena influence each other. Specifically, the increase in anxiety due to pandemic fatigue suggests an indirect effect on quality of life. Therefore, it is essential for policymakers to consider these dynamics when developing strategies related to pandemic fatigue and implementing training or awareness initiatives.

The findings provide empirical evidence for policymakers, decision-makers, and clinicians addressing pandemic fatigue and anxiety. It is recommended that relevant stakeholders develop plans and programs informed by this evidence, drawing appropriate inferences and interpretations from the results.

Health policymakers and managers must collaborate to mitigate unnecessary health service utilization stemming from pandemic fatigue and anxiety. Education and awareness-raising initiatives with significant social benefits should be planned in conjunction with all relevant stakeholders. These initiatives should be effectively communicated to the public, ensuring active participation. Failing to do so may result in continued unnecessary health service utilization, undermining the efforts of health managers to enhance effectiveness and efficiency.

This study highlights the impact of pandemic fatigue on COVID-19 anxiety and quality of life, providing valuable insights for psychiatric nurses. Understanding these anxiety factors will help eliminate unnecessary confounding variables in patient care. By considering the phenomenon of pandemic fatigue, nurses can achieve more effective outcomes in improving individuals' quality of life.

Pandemic fatigue is a challenge that individuals can often overcome without requiring hospital-based healthcare services. Through various educational and awareness activities, even in a home setting with support from vital healthcare professionals like nurses, individuals can address this issue effectively. To raise awareness about pandemic fatigue, nurses can reduce hospital workloads by visiting potential patients at home. This approach allows hospitals to focus on those who genuinely need treatment, facilitating easier appointment scheduling for patients seeking care.

Furthermore, as technology continues to advance, nurses can connect with patients remotely to provide timely solutions for alleviating potential pandemic fatigue. This strategy not only promotes efficient resource utilization but also addresses patients' needs more effectively.

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None.

Competing interests

The authors declare that they have no competing interests.

Abbreviations

Coronavirus disease 2019: COVID-19; World Health Organization: WHO; Pandemic fatigue: PF; Strengthening

the Reporting of Observational Studies in Epidemiology: STROBE; Physical Medicine and Rehabilitation: PMR.

Authors' contributions

The authors confirm their contributions to the paper as follows: study conception and design: HÇ, CÇ, AT, AK; data collection: AT, CÇ; analysis and interpretation of results: HÇ, AK, CÇ; draft manuscript preparation: AT, CÇ, MEK, HÇ, AK. All authors read and approved the final manuscript. All authors take responsibility for the integrity of the data and the accuracy of the data analysis.

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Availability of data and materials

The data used in this study are available from the corresponding author on request.

Ethics approval and consent to participate

The study was conducted in accordance with the Declaration of Helsinki. Ethical approval was obtained from the ethics committee of an Education and Research Hospital (decision number: IRB864-2021).

Consent for publication

By submitting this document, the authors declare their consent for the final accepted version of the manuscript to be considered for publication.

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