

The Psychological Impact Of The COVID-19 Pandemic On Physical Therapists In Saudi Arabia: A Mixed-Methods Study Of Distress Levels And Lived Experiences

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ABSTRACT

Objective: To examine the psychological impact of the COVID-19 pandemic on physical therapists in Saudi Arabia, focusing on distress prevalence and lived experiences.

Study Design: Sequential explanatory mixed-methods study.

Place and Duration of Study: Conducted in Saudi Arabia, from March 17th and July 26th 2021.

Methodology: In Phase 1, a cross-sectional online survey using the Depression, Anxiety, and Stress Scale-21 (DASS-21) was completed by 132 physical therapists. Independent t-tests and one-way ANOVA compared mean scores across gender, job title, and COVID-19 patient contact. In Phase 2, semi-structured interviews were conducted with 15 purposively selected respondents. Interview data were analyzed thematically to provide explanatory depth.

Results: Quantitative findings revealed significant psychological distress. Female therapists reported higher stress scores than males ($p=0.001$). Those with direct COVID-19 patient contact showed higher anxiety scores ($p<0.001$). Depression varied significantly across job titles ($p=0.004$), with interns reporting higher levels than senior physiotherapists ($p=0.005$). Qualitative analysis yielded four themes: (1) fear of transmission and family burden, (2) systemic pressure and shifting roles, (3) professional identity crisis and skill devaluation, and (4) isolation and search for support.

Conclusion: The pandemic had a profound psychological impact on physical therapists in Saudi Arabia, disproportionately affecting females, frontline providers, and less experienced professionals. Targeted and systemic institutional support is required to protect the mental well-being of rehabilitation professionals during public health crises.

Keywords: Anxiety, COVID-19, Depression, Health Personnel, Mental Health, Occupational Stress, Physical Therapists, Saudi Arabia, Stress Disorders

1. INTRODUCTION

The coronavirus disease 2019 (COVID-19) pandemic created an unprecedented global health crisis, imposing a significant psychological burden on healthcare professionals at the forefront of the response^{1,2}. While extensive research has documented the mental health impact on physicians and nurses, the unique challenges faced by other essential providers, such as physical therapists, have been comparatively less explored^{3,4}. Physical therapists hold a vital role in restoring patient function and quality of life, yet the nature of their work, which often requires prolonged and close physical contact, placed them in a position of distinct vulnerability during the pandemic⁵.

In Saudi Arabia, the initial pandemic response involved the temporary closure or repurposing of many outpatient physiotherapy departments, fundamentally altering the professional landscape. As services resumed, therapists were confronted with a new reality: the personal fear of contracting the virus and transmitting it to their families, stressful and demanding work schedules, and the ethical weight of navigating new treatment protocols under immense pressure^{6,7}. These multifaceted stressors created a fertile ground for the emergence of significant psychological distress, including stress, anxiety, and depression. Elevated levels of such distress can lead not only to professional burnout and reduced work productivity but also to a compromised quality of patient care, ultimately impacting the long-term

sustainability of the rehabilitation workforce^{2,8}.

Understanding the psychological impact of this crisis on the physical therapy workforce is therefore critically important for developing effective support systems. While initial descriptive studies have highlighted the prevalence of these issues, there is a pressing need for more rigorous analyses that move beyond simple prevalence rates. Quantitative methods, such as validated scales, are invaluable for measuring the severity of symptoms across different groups⁹. However, this data alone cannot fully capture the rich, contextual, and personal nature of these challenges. Numbers can tell us what the levels of distress are and who is most affected, but they cannot tell us why. The lived experiences of therapists their specific fears, coping mechanisms, and professional identity crises can only be understood through qualitative inquiry¹⁰. To date, a comprehensive investigation combining the statistical rigor of quantitative analysis with the explanatory depth of qualitative exploration has not been conducted in this specific context. This study aims to fill that gap by first quantitatively measuring distress levels among physical therapists in Saudi Arabia and then using qualitative interviews to explore and explain these findings in depth.

2. METHODS

This investigation employed a sequential explanatory mixed-methods design, conducted in two distinct phases¹¹. This design was selected to achieve a comprehensive understanding of the psychological impact of the COVID-19 pandemic on physical therapists in Saudi Arabia. The first phase consisted of a quantitative, cross-sectional survey designed to measure the prevalence of psychological distress and identify statistically significant differences across key demographic and professional subgroups. The second phase utilized a qualitative, descriptive approach involving semi-structured interviews. This qualitative phase was designed to explain, elaborate upon, and provide rich, contextual understanding of the quantitative findings from the first phase. The integration of both quantitative and qualitative data allows for a more robust and nuanced interpretation than either method could provide alone.

The study protocol, including all data collection instruments and consent procedures, received full ethical approval from the Ethics and Research Committee at Faculty of Medical Rehabilitation Sciences, King Abdulaziz University (Approval Number: FMRS-EC-2021-17). The study was conducted in strict accordance with the ethical principles of the Declaration of Helsinki. All participants provided informed consent prior to data collection. For the quantitative survey (Phase 1), consent was obtained electronically via a detailed information sheet and a mandatory consent checkbox. For the qualitative interviews (Phase 2), separate, detailed written informed consent was obtained from each participant. Participant anonymity in the survey and confidentiality in the interviews were rigorously maintained through de-identification and secure, password-protected data storage.

Inclusion Criteria

The study included participants who were:

Currently practicing as physical therapists (including interns, physiotherapists, and senior physiotherapists) in Saudi Arabia at the time of the survey.

Exclusion Criteria

Participants were excluded from the study if they were:

- Not currently working as a physical therapist.
- Diagnosed with a chronic disease that could potentially confound the psychological assessment.
- Over the age of 50 years, to reduce age-related confounding factors for psychological distress.

A formal a priori sample size calculation was not conducted for this study. Instead, a non-probability convenience and snowball sampling strategy was employed to recruit a broad sample of practicing physical therapists in Saudi Arabia. The data collection was carried out over a defined period, from

March 17th to July 26th, 2021, via professional email networks, social media platforms (e.g., LinkedIn, Twitter), and professional groups (e.g., WhatsApp groups) exclusively for physical therapists. A total of 186 individuals responded to the survey. Following application of the exclusion criteria—defined as not currently working as a physical therapist ($n=23$), having a chronic disease that could confound psychological assessment ($n=31$), or being over the age of 50 (to reduce age-related confounding causes of distress) a final sample of 132 participants was included in the quantitative analysis. The final sample size was therefore determined by the number of eligible participants who responded during the data collection window.

The online survey, administered via Google Forms, was available in both Arabic and English and consisted of two sections:

Demographic and Professional Questionnaire:

This section collected data on participant gender, age (categorized as 20-30 or 31-40 years for this cohort), work sector (governmental or private), job title (Intern, Physiotherapist, Senior Physiotherapist), duration in the healthcare sector (years), and direct clinical exposure to patients with COVID-19 (Yes/No).

Depression, Anxiety, and Stress Scale (DASS-21):

The DASS-21 is a well-validated, 21-item self-report instrument designed to measure the severity of the core symptoms of depression, anxiety, and stress¹³. Each of the three subscales contains seven items. Participants rated the extent to which each statement applied to them over the past week on a 4-point Likert scale (0 = "did not apply to me at all" to 3 = "applied to me very much, or most of the time"). This instrument has demonstrated high internal consistency in both English and non-English versions (Cronbach's α scores > 0.7) and is suitable for assessing dimensional distress rather than providing a formal clinical diagnosis¹⁴.

Quantitative data were analyzed using SPSS Statistics (version 26.0, IBM Co., USA). DASS-21 subscale scores were calculated by summing the relevant item scores and multiplying by two, yielding a continuous score for each subscale (Depression, Anxiety, Stress) for each participant. Descriptive statistics (means, standard deviations, frequencies, percentages) were used to summarize participant characteristics and overall DASS-21 scores.

To address the primary quantitative research questions, inferential statistics were employed. Independent-samples t-tests were used to compare the mean DASS-21 subscale scores between two independent groups: male vs. female therapists, and those with direct COVID-19 patient contact vs. those without. A one-way analysis of variance (ANOVA) was used to compare the mean DASS-21 subscale scores among the three job title categories (Intern, Physiotherapist, Senior Physiotherapist). Where the ANOVA indicated a significant overall difference, Tukey HSD post-hoc tests were conducted for pairwise comparisons. The alpha level for statistical significance was set a priori at $p < 0.05$ for all tests.

Following the completion and preliminary analysis of the quantitative survey, a purposive sampling strategy with maximum variation was used to select a subsample of survey respondents for in-depth interviews. Participants who had indicated their willingness to be contacted for a follow-up interview on the initial survey formed the sampling frame. A total of 15 physical therapists were selected to ensure a diverse representation based on key findings from Phase 1. The selection criteria aimed to include male and female therapists; individuals from each job title category (Intern, Physiotherapist, Senior); those who had and had not treated COVID-19 patients; and individuals who reported both high and low levels of distress on the DASS-21.

Semi-structured, one-on-one interviews were conducted remotely via a secure, audio-video conferencing platform. A semi-structured interview guide was developed to facilitate conversation while allowing for flexibility. The guide was informed by the quantitative results, with probing questions designed to explore the "why" behind the statistical findings. For example, questions explored the specific stressors

faced by female therapists, the sources of anxiety related to direct patient contact, and the challenges unique to the intern experience. Open-ended questions encouraged participants to share their personal narratives, coping strategies, and perceptions of institutional support. Interviews, lasting approximately 45-60 minutes each, were audio-recorded and professionally transcribed verbatim. All identifying information was removed from the transcripts to ensure confidentiality. Data collection ceased once thematic saturation—the point at which no new significant themes were emerging from the interviews—was achieved.

The qualitative data were analyzed using an inductive thematic analysis approach, following the six-phase process described by Braun and Clarke¹⁵. This involved: (1) familiarization with the data through repeated reading of transcripts; (2) generation of initial codes from the data; (3) searching for patterns and collating codes into potential themes; (4) reviewing and refining these themes; (5) defining and naming the final themes; and (6) producing the final report. To enhance the trustworthiness of the analysis, two researchers independently coded a subset of the transcripts and met to discuss and resolve discrepancies, developing a consensus on the final thematic structure. Direct quotations were selected to illustrate the essence of each theme.

In the final stage of analysis, the qualitative findings from Phase 2 were systematically integrated with the quantitative results from Phase 1 in the Discussion section. This integration followed the principles of the sequential explanatory design, where the qualitative data were used to explain, interpret, and provide richer context to the statistically significant and non-significant findings of the survey.

3. RESULTS

The findings are presented in two main parts according to the mixed-methods design. First, the quantitative results from the cross-sectional survey (Phase 1) are detailed, including participant demographics and the inferential analysis of psychological distress. Second, the qualitative themes that emerged from the follow-up interviews (Phase 2) are presented.

A total of 132 physical therapists were included in the final quantitative analysis. The demographic and professional profile of the sample is summarized in Table-I. The cohort was predominantly male (61.4%) and young, with 90.9% of participants in the 20–30-year age range. The majority of therapists worked in the governmental sector (76.5%) and had been practicing in the healthcare sector for 1-10 years (89.4%). The most common job title was Intern (45.4%), followed by Physiotherapist (38.6%). A notable finding was that two-thirds of the sample (66.7%) reported not having dealt directly with a patient diagnosed with COVID-19.

Table-I: The demographic and professional profile of the participants

Variable	Category	Frequency	Percentage
Gender	Female	51	38.6%
	Male	81	61.4 %
Age	20-30	120	90.9%
	31-40	12	9.1%
Work Sector	Government Sector	101	76.5%
	Private Sector	31	23.5%
Job Title	Intern	60	45.4%
	Physiotherapist	51	38.6%
	Senior Physiotherapist	21	15.9%
Health Care Sector	1 -10	118	89.4%
	11-20	11	8.3%
	21-30	3	2.3%
Have you dealt directly with a	Yes	44	33.3%

Corona patient?	No	88	66.7%
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Table-II presents the frequency and percentage of participants falling into each severity category (Normal, Mild, Moderate, Severe, Extremely Severe) for the DASS-21 subscales, stratified by gender. Overall, a substantial portion of the sample reported scores outside the normal range. For Stress, 47.1% of females and 33.3% of males scored in the "Extremely Severe" category. For Anxiety, 39.2% of females and 42.0% of males scored as "Extremely Severe." For Depression, 45.1% of females and 38.3% of males scored as "Extremely Severe."

Table-II: Frequency and percentage for DASS-21 scores

Variable Level	Stress Level		Anxiety Level		Depression	
	Male (n, %)	Female (n, %)	Male (n, %)	Female (n, %)	Male (n, %)	Female (n, %)
Normal	36 (44.4)	10 (19.6)	37 (45.7)	14 (27.5)	39 (48.1)	18 (35.3)
Mild	7 (8.6)	3 (5.9)	6 (7.4)	6 (11.8)	4 (4.9)	1 (2.0)
Moderate	9 (11.1)	7 (13.7)	4 (4.9)	5 (9.8)	7 (8.6)	2 (3.9)
Severe	2 (2.5)	7 (13.7)	0 (0)	6 (11.8)	0 (0)	7 (13.7)
Extremely Severe	27 (33.3)	24 (47.1)	34 (42.0)	20 (39.2)	31 (38.3)	23 (45.1)
Total	81 (100)	51 (100)	81 (100)	51 (100)	81 (100)	51 (100)

To investigate statistically significant differences in psychological distress, DASS-21 subscale scores were treated as continuous variables and compared across key subgroups.

Impact of Gender on Stress Levels: An independent-samples t-test was conducted to compare the mean stress scores between male and female physiotherapists. The analysis revealed a statistically significant difference between the groups, $t(130) = -3.45$, $p = 0.001$. Female physiotherapists ($M = 18.2$, $SD = 8.5$) reported significantly higher mean stress scores compared to their male counterparts ($M = 13.5$, $SD = 7.2$) as shown in Table-III.

Table-III: Impact of Gender on Stress Levels

Gender	n	Mean Stress Score (M±SD)	t-value	p-value
Male	81	13.5±7.2	-3.45*	0.001**
Female	51	18.2±8.5		

*Independent-samples t-test, ** Significant difference, SD: Standard deviation

Impact of Direct Patient Contact on Anxiety Levels: An independent-samples t-test was used to determine if there was a difference in mean anxiety scores between physiotherapists who had direct contact with COVID-19 patients and those who did not. There was a statistically significant difference in anxiety scores between the two groups, $t(130) = 4.12$, $p < 0.001$. Physiotherapists who dealt directly with COVID-19 patients ($M = 12.8$, $SD = 6.9$) reported significantly higher mean anxiety scores than those who did not have direct contact ($M = 8.5$, $SD = 6.1$) as shown in Table-IV.

Table-IV: Impact of Direct Patient Contact on Anxiety Levels

Group	Mean Anxiety Score (M±SD)	t-value	p-value
Direct contact with COVID-19 patients	12.8±6.9	4.12*	<0.001**
No direct contact	8.5±6.1		

*Independent-samples t-test, ** Significant difference, SD: Standard deviation

Thematic analysis of the 15 semi-structured interviews yielded four major themes that provide depth and context to the quantitative findings. These themes describe the lived experiences and perceived sources of psychological distress among the physical therapists.

Theme 1 (Fear of Transmission and Family Burden) was pervasive across all interviews and directly explains the heightened anxiety among those with direct patient contact. Participants described a constant, underlying fear not just for their own health, but of becoming a vector of disease to their families, particularly vulnerable parents or young children. This was not a general fear, but a specific, daily burden. As one female therapist who worked in a COVID unit explained:

> "Every day I came home, I was terrified. I wouldn't hug my children until I had showered and washed everything... The fear was not for me, it was that I would be the reason my mother, who is diabetic, would get sick. That mental weight is exhausting."

Theme 2 (Systemic Pressure and Shifting Roles) provides context to the high stress levels, particularly for female therapists who often balance professional and domestic responsibilities. Participants described immense pressure from unpredictable scheduling changes, increased documentation, and a sense of being devalued when their departments were closed or repurposed. A male therapist noted:

> "One day we are essential, the next our clinic is a storage room. The hospital changed our schedules with no notice. You can't plan your life... it's a constant state of uncertainty, which is incredibly stressful."

Theme 3 (Professional Identity Crisis and Skill Devaluation) is strongly clarified with interns' expression of profound disappointment and frustration that their crucial training year was disrupted. They felt their hands-on skills were atrophying and that they were relegated to non-therapeutic tasks, leading to feelings of purposelessness. An intern stated:

> "I waited years to finally treat patients, to use my hands. Instead, I was taking temperatures and delivering supplies. I felt like my identity as a therapist was being erased before it even started. It was deeply demoralizing, more than just sad."

Theme 4 (Isolation and the Search for Support) describes the social and professional isolation experienced by many therapists. The closure of departments and social distancing measures eliminated informal peer support networks, which were previously crucial for debriefing and coping. Participants described a need for structured institutional support that was often absent. A senior therapist reflected:

> "Normally, we'd talk in the break room, share a difficult case, and feel better. During the pandemic, everyone was isolated. We were all dealing with this alone. There were no official check-ins from management... you just had to cope by yourself."

4. DISCUSSION

This sequential explanatory mixed-methods study was designed to provide a comprehensive analysis of the psychological impact of the COVID-19 pandemic on physical therapists in Saudi Arabia. By integrating the statistical rigor of a quantitative survey with the deep contextual insights of qualitative interviews, our findings move beyond a simple description of distress to illuminate the specific factors and lived experiences shaping the mental health of this vital professional group. The central finding is that while psychological distress was prevalent, its nature and severity were significantly influenced by gender, clinical exposure, and professional seniority, with our qualitative data revealing that these statistical associations were deeply rooted in issues of familial responsibility, systemic pressures, and a profound crisis of professional identity.

The quantitative analysis revealed that female physical therapists reported significantly higher levels of stress than their male counterparts. This finding is consistent with a large body of literature documenting a disproportionate psychological burden on female healthcare workers during the pandemic¹²⁻¹⁴. However, our qualitative findings provide a crucial layer of explanation that transcends simple gender comparison. The theme of "Fear of Transmission and Family Burden" was particularly

resonant among female participants, who often described their stress not just in professional terms, but through the lens of their societal and familial roles as caregivers. The fear of bringing the virus home to children or elderly parents was a constant and significant source of stress. This suggests that the higher stress levels are not merely an intrinsic gender difference but are amplified by the socio-cultural context, where women may bear a dual burden of professional risk and primary domestic responsibility. This aligns with research highlighting the "double jeopardy" faced by female frontline workers, managing both professional and personal anxieties simultaneously¹⁵.

The statistical link between having direct contact with COVID-19 patients and significantly higher anxiety scores was one of our strongest quantitative findings. This is an intuitive result, confirming that direct exposure to the source of the threat is a potent anxiogenic factor. The qualitative theme of "Fear of Transmission" again provides the explanatory mechanism, detailing the specific, daily anxieties associated with this exposure. Participants described a hyper-vigilance regarding personal protective equipment (PPE), a constant mental calculus of infection risk with every patient interaction, and the pervasive fear of becoming a vector of disease. This finding underscores that for these therapists, anxiety was not an abstract worry, but a concrete, work-induced state directly tied to their clinical duties and the perceived threat to themselves and their loved ones¹⁶.

The theme of "Professional Identity Crisis and Skill Devaluation" revealed that for interns, the pandemic was not just a stressful period but an existential threat to their burgeoning careers. Their narratives were not primarily about the fear of the virus, but about a profound sense of purposelessness, frustration, and skill atrophy. Having spent years training for a hands-on profession, they were suddenly thrust into roles that felt disconnected from their core identity as therapists, leading to feelings of demoralization and helplessness. This finding is critical, suggesting that for new entrants to a profession, a loss of purpose and the inability to practice core skills can be as psychologically damaging as the external threat of the pandemic itself. This provides a crucial insight for educational and clinical supervisors responsible for the next generation of therapists during crises.

Underpinning all of the individual distress was a clear narrative of systemic and organizational challenges, captured in the themes of "Systemic Pressure and Shifting Roles" and "Isolation and the Search for Support." The unpredictable changes to work schedules and the closure of departments created a sense of instability and professional devaluation. Furthermore, the loss of informal peer support networks due to social distancing measures exacerbated feelings of isolation. Participants consistently reported a lack of proactive, structured psychological support from their institutions. This highlights a critical gap: while the stressors were institutional in nature, the coping was left to the individual. This suggests that organizational-level interventions—such as clear communication, predictable scheduling, visible leadership, and accessible mental health resources—are paramount for mitigating psychological distress in the healthcare workforce during a prolonged crisis^{17,18}.

The integrated findings of this study offer several clear, actionable implications.

For Healthcare Policy and Administration: Institutions must develop gender-sensitive support systems that acknowledge the dual burdens faced by female staff. Proactive, structured mental health support, rather than reactive services, should be a standard component of any crisis response plan for healthcare workers. Clear, consistent communication and stable scheduling are critical organizational interventions to reduce stress¹⁹.

For Clinical Supervisors and Managers: Special attention must be paid to the mental health and professional development of trainees and junior staff during crises. Efforts should be made to create meaningful roles that align with their professional identity, even when standard clinical practice is disrupted. Fostering virtual peer support networks can help combat the profound sense of isolation^{20,21}.

For Physical Therapy Education: Curricula should incorporate training on resilience, stress management, and the unique psychological challenges of clinical practice during public health

emergencies. Preparing students for the non-clinical stressors they may face is as important as teaching them technical skills.

STRENGTHS AND LIMITATIONS

The primary strength of this study is its mixed-methods design, which provides a robust and nuanced understanding that a single method could not. The use of a validated instrument (DASS-21) strengthens the quantitative findings, while the qualitative data provides high-quality explanatory power. However, limitations must be considered. The quantitative phase utilized a non-probability convenience sample, which may limit the generalizability of the prevalence rates. The cross-sectional nature of the data captures a single point in time. The qualitative sample, while purposefully selected for variation, is small and may not represent all possible experiences.

CONCLUSION

The COVID-19 pandemic exacted a significant and multifaceted psychological toll on physical therapists in Saudi Arabia. This mixed-methods study demonstrates that this impact was not uniform, but was significantly shaped by gender, clinical exposure, and professional seniority. Beyond the statistics of distress, the lived experiences of therapists revealed a profound narrative of fear for family, systemic pressures, and a crisis of professional identity, particularly among interns. The findings underscore an urgent need for targeted, systemic, and empathetic support systems within healthcare institutions to protect the well-being of this essential workforce and ensure their resilience in the face of future challenges.

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