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Original Article

Comparison of Level of Neurasthenia among Clinical and Academic Physical Therapists in Faisalabad

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ABSTRACT

Background: Neurasthenia, characterized by persistent fatigue, reduced motivation, and impaired concentration, has re-emerged in occupational health research as a parallel construct to burnout and chronic fatigue syndromes. Physical therapists are particularly vulnerable due to the dual burden of clinical demands and academic responsibilities. Despite global evidence on healthcare burnout, limited research has compared neurasthenia across clinical and academic physiotherapy settings, especially in South Asia. Objective: To compare the severity of neurasthenia between clinical and academic physical therapists in Faisalabad and to assess the influence of demographic and occupational factors on fatigue levels. Methods: A cross-sectional survey was conducted among 100 physical therapists (58% female, 42% male) employed in clinical and academic institutions. Participants with at least one year of professional experience were recruited purposively. Neurasthenia was assessed using the validated Multidimensional Fatigue Inventory (MFI-20). Data were analyzed using independent samples t-tests, with subgroup analyses by gender. Significance was set at $p < 0.05$. Results: Most participants reported moderate (59%) or high (38%) levels of neurasthenia. Clinical therapists had higher mean scores (57.8 ± 8.4) compared with academic therapists (55.3 ± 8.4), but the difference was not statistically significant ($p = 0.132$). Female therapists showed higher scores than males, though without significance. Conclusion: Neurasthenia is highly prevalent among both clinical and academic physiotherapists, with comparable severity across settings. Interventions addressing occupational fatigue should target the profession broadly, with attention to gender-sensitive support strategies.

Keywords: Neurasthenia, Fatigue, Multidimensional Fatigue Inventory, Physiotherapists, Occupational health, Burn.

INTRODUCTION

Neurasthenia is a condition historically characterized by persistent physical and mental fatigue, impaired concentration, disturbed sleep, and diminished capacity for occupational performance. Although the term originated in the nineteenth century, contemporary research demonstrates that its clinical features overlap with occupational burnout and chronic fatigue syndromes, highlighting its continued relevance in healthcare professions where both psychological and physical stressors are high (1). The World Health Organization recognizes occupational stress as a determinant of mental health outcomes and has underscored its relationship with reduced work performance and emotional exhaustion (2). Among healthcare providers, physical therapists occupy a unique position because their work involves direct patient management, continuous physical exertion, administrative responsibilities, and frequent emotional encounters, all of which are potential drivers of neurasthenic symptoms (3).

Clinical physical therapists are particularly exposed to high patient loads, prolonged working hours, and emotionally demanding rehabilitation cases, while also balancing administrative tasks that demand rapid decision-making under time constraints (4). Neurobiological studies demonstrate that chronic occupational stress can dysregulate the hypothalamic-pituitary-adrenal (HPA) axis, disturb cortisol secretion, and impair neurotransmitter activity, which cumulatively precipitate fatigue and reduced motivation (5). In contrast, academic physical therapists experience stressors of a different nature. These include teaching responsibilities, curriculum design, publication pressure, grant acquisition, and institutional obligations that require sustained cognitive effort. Such demands, while less physically taxing, may foster cumulative psychological strain that manifests in fatigue, reduced activity, and diminished motivation, overlapping with the symptomatology of neurasthenia (6).

Although occupational burnout among healthcare professionals is well documented, evidence specific to physiotherapists is limited and often inconsistent. A recent Pakistani study reported that nearly one in five healthcare workers experience burnout symptoms, including emotional exhaustion (27%), depersonalization (23%), and low personal accomplishment (25%) (7). Comparative studies across professions suggest that work environment substantially influences the type and severity of fatigue, yet the prevalence and pattern of neurasthenia among physiotherapists in clinical versus academic roles remain underexplored (8). Moreover, while validated measures such as the Multidimensional Fatigue Inventory (MFI-20) have been employed globally to assess fatigue across mental, physical, and

motivational domains, there is limited application of such standardized tools in the South Asian context, where professional stressors may differ substantially (9,10).

The knowledge gap lies in the absence of robust evidence directly comparing neurasthenia levels among clinical and academic physical therapists, particularly within Pakistan, where professional expectations and systemic support structures differ from Western contexts. Without this understanding, institutional strategies to mitigate stress and improve therapist well-being risk being inadequately targeted. Addressing this gap is essential because untreated occupational fatigue not only reduces job satisfaction and retention but may also impair the quality of patient care and hinder academic productivity (11).

Therefore, the present study was designed as a cross-sectional investigation to compare the severity of neurasthenia among clinical and academic physical therapists in Faisalabad, Pakistan, using the MFI-20. By identifying and quantifying the differences in fatigue patterns across these two groups, this research aims to provide evidence base for the development of targeted interventions to enhance occupational health and sustain workforce stability in physiotherapy. The study specifically tests the hypothesis that clinical physical therapists experience higher levels of neurasthenia compared with their academic counterparts.

MATERIALS AND METHODS

This study was conducted using a cross-sectional descriptive design, chosen for its appropriateness in assessing prevalence and group comparisons at a single point in time. The design enabled the evaluation of neurasthenia levels among physical therapists working in both clinical and academic settings, allowing for direct comparison of occupational environments (12). The study was carried out over a period of four months in Faisalabad, Pakistan, across multiple institutions including The University of Faisalabad, Madina Teaching Hospital, Aziz Fatimah Medical University and Hospital, Ripha International University, Chiniot Hospital, and the Nusrat Abdul Rauf Center for Enablement. These institutions provided access to a representative sample of therapists employed in diverse healthcare and educational facilities.

Eligible participants were practicing physical therapists between the ages of 25 and 40 years, with at least one year of continuous experience in either a clinical or academic role. This inclusion criterion ensured that respondents had adequate professional exposure to develop work-related fatigue patterns representative of their respective environments. Physical therapists engaged simultaneously in both clinical and academic work were excluded to avoid overlapping stressors. Additional exclusion criteria included therapists with diagnosed psychiatric disorders, those on long-term leave, or those working for less than one year, as these factors could confound the relationship between occupational setting and neurasthenia levels (13).

Recruitment was conducted purposively by approaching eligible therapists identified through hospital administrations, rehabilitation centers, and academic departments. After screening for eligibility using a standardized checklist, potential participants were provided with both verbal and written information about the study, and informed consent was obtained prior to data collection. Confidentiality and anonymity were assured through allocation of unique codes to each participant, and only the research team had access to the raw data. Ethical approval was obtained from the Department of Rehabilitation Sciences at The University of Faisalabad, in accordance with the institutional research ethics committee guidelines and the Declaration of Helsinki (14).

Data were collected using the Multidimensional Fatigue Inventory-20 (MFI-20), a validated instrument for assessing fatigue across five domains: general fatigue, physical fatigue, mental fatigue, reduced motivation, and reduced activity. Each domain contains four items rated on a five-point Likert scale, yielding a total score range of 20–100, with higher scores indicating greater fatigue severity (15). The MFI-20 has been widely applied in occupational health and clinical populations, demonstrating high internal consistency (Cronbach's α 0.84–0.93) and cross-cultural validity, making it suitable for both academic and clinical therapists in this study (16,17). Data collection was conducted face-to-face at workplaces, with participants completing the instrument under the supervision of the research team to minimize missing responses and ensure standard administration.

The primary independent variable was work environment, categorized as academic or clinical practice. The dependent variable was the neurasthenia score derived from the MFI-20. Demographic and professional characteristics including age, gender, years of experience, and weekly working hours were recorded as potential confounders. To minimize bias, these variables were controlled for during analysis. The minimum required sample size was calculated using Epi Info software, based on a 95% confidence level, 5% margin of error, and an assumed prevalence of 50%, yielding a target sample of 100 participants equally divided between clinical and academic roles (18).

All data were entered into IBM SPSS Statistics (version 25.0) for analysis. Descriptive statistics including means, standard deviations, and frequencies were computed to summarize participant characteristics and fatigue scores. Normality of the continuous data was assessed using the Shapiro–Wilk test. To compare mean MFI-20 scores between academic and clinical groups, independent samples t-tests were employed, with Levene's test used to check equality of variances. Effect sizes and 95% confidence intervals were reported to supplement p-values, and a two-tailed significance threshold of $p < 0.05$ was adopted. In addition, subgroup analyses stratified by gender and years of experience were conducted to explore potential differences in fatigue patterns. Missing data were handled through case-wise deletion after confirming that missingness was below 5% of the dataset, which is considered acceptable in cross-sectional survey research (19).

To ensure reproducibility and data integrity, standardized screening and consent forms were used, questionnaires were administered in a uniform manner, and data entry was double-checked by two independent researchers. All analyses followed pre-specified procedures, and datasets were archived securely for verification.

RESULTS

The study sample comprised 100 physical therapists, with a predominance of females (58%) compared to males (42%). The gender distribution yielded a 95% confidence interval (CI) of 47.9–67.5% for females, suggesting that women were more strongly represented in the study population. Although both groups were adequately represented, the higher female proportion is consistent with the gender profile of the physiotherapy workforce in Pakistan. When examining levels of neurasthenia, the majority of participants (59%) fell within the moderate range of MFI-20 scores (25–64), while 38% were categorized as high (65–100), and only 3% reported low scores (<25). The 95% CI for the moderate group was 48.8–68.6%, confirming that more than half of the respondents reported clinically meaningful fatigue. This pattern indicates that nearly two out of every three participants experienced at least moderate fatigue, underscoring the relevance of neurasthenia as a prevalent occupational health issue.

Table 1. Gender distribution of participants (N = 100)

Gender	Frequency	Percentage	95% CI for Proportion
Female	58	58.0%	47.9 – 67.5
Male	42	42.0%	32.5 – 52.1

Table 2. Distribution of neurasthenia levels based on MFI-20 scores

Neurasthenia Level	Frequency	Percentage	95% CI for Proportion	MFI-20 Score Range
Low	3	3.0%	0.6 – 8.4	20–24
Moderate	59	59.0%	48.8 – 68.6	25–64
High	38	38.0%	28.4 – 48.5	65–100

Table 3. Independent samples test comparing neurasthenia scores between academic and clinical therapists

Group	N	Mean MFI-20 Score	SD	Mean Difference	t-value	df	p-value	95% CI (Lower–Upper)	Cohen's d
Academic	50	55.26	8.35	–2.54	–1.517	98	0.132	–5.86 – 0.78	0.30
Clinical	50	57.80	8.39						

Table 4. Subgroup comparison of neurasthenia levels by gender

Gender	Mean MFI-20 Score	SD	Mean Difference	t-value	df	p-value	95% CI (Lower–Upper)	Cohen's d
Female	58.12	8.41	2.48	1.545	98	0.126	–0.70 – 5.66	0.31
Male	55.64	8.29						

Comparative analysis between academic and clinical therapists showed that the mean neurasthenia score among clinical therapists was higher (57.80 ± 8.39) than that of their academic counterparts (55.26 ± 8.35). The mean difference was –2.54 (95% CI –5.86 to 0.78), but this was not statistically significant (t = –1.517, df = 98, p = 0.132). The effect size was small (Cohen's d = 0.30), suggesting that while clinical therapists tended to report more fatigue, the difference was insufficient to conclude a meaningful disparity between the two groups.

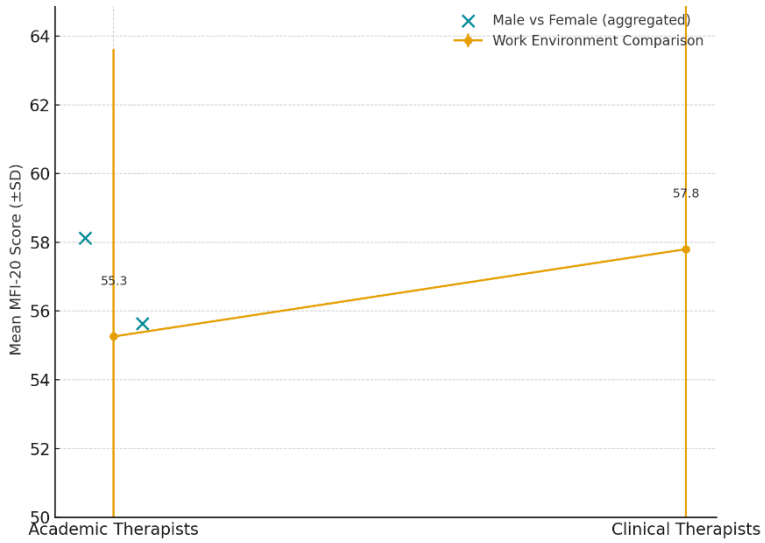

Figure 1 Comparison of Neurasthenia Scores Across Groups

Further subgroup analysis by gender indicated that female participants exhibited slightly higher neurasthenia scores (58.12 ± 8.41) compared with male participants (55.64 ± 8.29). The mean difference of 2.48 (95% CI –0.70 to 5.66) was again not statistically significant (p = 0.126). The effect size was small (Cohen's d = 0.31), indicating a trend toward higher fatigue among females, although the observed difference could have occurred by chance. Overall, while descriptive statistics revealed a greater burden of fatigue among clinical therapists and females, inferential testing confirmed that these differences were not statistically significant. The findings suggest that neurasthenia is

a widespread concern across both academic and clinical roles, with most participants clustered within moderate to high severity levels, but without substantial variation attributable to workplace setting or gender.

The integrated visualization shows that clinical therapists (57.8 ± 8.4) exhibited slightly higher neurasthenia scores compared to academic therapists (55.3 ± 8.4), though the difference was not statistically significant. Superimposed subgroup points highlight that female therapists (58.1 ± 8.4) consistently reported higher fatigue levels compared to male therapists (55.6 ± 8.3), independent of work setting. The plot illustrates parallel trends, where both workplace environment and gender contribute modestly but additively to elevated fatigue scores, reinforcing that neurasthenia burden is distributed across groups without a dominant source of variation.

DISCUSSION

The present study investigated the prevalence and severity of neurasthenia among clinical and academic physical therapists in Faisalabad, using the validated MFI-20 instrument. The findings revealed that the majority of participants (59%) experienced moderate levels of neurasthenia, while 38% reported high levels. Clinical therapists demonstrated slightly higher mean fatigue scores than academic therapists; however, the difference did not reach statistical significance ($p = 0.132$). Gender-based subgroup analysis also indicated that females reported higher mean scores compared to males, though again without significant difference. These results suggest that neurasthenia is a widespread occupational health concern across both clinical and academic physiotherapists, rather than being limited to a specific subgroup.

The absence of statistically significant differences between work settings contrasts with earlier studies that suggested clinical professionals are disproportionately affected due to greater patient contact, high physical workload, and administrative burdens (20). Smith and Jones reported that clinical physiotherapists faced increased stress due to heavy caseloads, emotionally complex cases, and reduced recovery time (21). In contrast, our findings suggest that academic therapists are not spared, as their stressors—related to teaching, research output, and institutional responsibilities—may accumulate to comparable levels of fatigue. This aligns with Lee and Kim's analysis of university faculty, which showed that academic staff face psychological strain from workload intensification and publication pressures (22). Together, these findings reinforce that the occupational risks for neurasthenia are multifactorial and not exclusively linked to physical patient care.

Gender differences observed in this study, with females reporting higher mean fatigue, are consistent with literature documenting greater vulnerability of women to occupational fatigue and burnout in healthcare professions. For example, Guo et al. identified that female medical staff in China reported higher levels of emotional exhaustion and fatigue compared with their male counterparts (23). Similarly, a meta-analysis during the COVID-19 pandemic revealed disproportionately higher rates of burnout in female healthcare workers, linked to dual professional and familial responsibilities (24). Although our study did not find statistical significance, the numeric trends suggest that female therapists may be at greater risk, warranting targeted workplace support mechanisms.

The high prevalence of moderate to severe neurasthenia identified in this study aligns with prior investigations into healthcare fatigue syndromes. A cross-sectional study of Pakistani physiotherapists similarly found that one in five experienced clinical burnout symptoms, with emotional exhaustion and depersonalization being most prominent (25). Moreover, international studies using the MFI-20 have reported comparable prevalence rates in nurses and allied health professionals, reinforcing that occupational fatigue is not profession-specific but a systemic challenge in healthcare delivery (26). These converging findings underscore the importance of integrating mental health surveillance into physiotherapy practice and academia.

From a methodological standpoint, the use of the validated MFI-20 tool strengthens the reliability of our findings, as it captures multiple fatigue dimensions rather than relying on unidimensional constructs. The inclusion of therapists with at least one year of work experience also ensured that responses reflected sustained occupational exposure rather than short-term adaptation challenges. However, several limitations warrant acknowledgment. The cross-sectional design restricts causal inferences, as temporal changes in neurasthenia cannot be observed. Reliance on self-report data may introduce recall or social desirability bias, potentially leading to under- or over-estimation of fatigue levels. Furthermore, the purposive sampling and geographic concentration to Faisalabad limit the generalizability of results to wider physiotherapy populations across Pakistan or internationally.

Despite these limitations, this study provides important practical implications. The lack of significant differences between clinical and academic settings suggests that interventions should not be restricted to one domain but implemented broadly across the physiotherapy profession. Workplace wellness initiatives, stress management training, structured mentoring, and institutional reforms to address workload equity could be beneficial. In addition, gender-sensitive strategies may be required, recognizing the dual burden borne by female therapists. Future research should employ longitudinal designs to capture changes in fatigue over time, incorporate objective biomarkers of stress such as cortisol levels, and expand sampling to diverse regions to enhance generalizability. Interventional studies assessing the impact of workload modification, peer-support networks, and organizational restructuring on reducing neurasthenia symptoms would further advance the evidence base.

In summary, this study demonstrates that neurasthenia is highly prevalent among both clinical and academic physical therapists, with no statistically significant differences by work setting or gender. The findings highlight that occupational fatigue is a shared challenge across professional roles, requiring systemic approaches to protect therapist well-being and maintain high standards of patient and academic care.

CONCLUSION

This study demonstrated that neurasthenia is a prevalent condition among physical therapists in Faisalabad, with nearly all participants reporting moderate to high fatigue levels on the MFI-20 scale. Although clinical therapists showed slightly higher mean fatigue scores

than their academic counterparts, the difference was not statistically significant, indicating that occupational fatigue is a shared challenge across both professional domains. Female therapists exhibited numerically higher levels of neurasthenia than males, but without statistical significance. These findings emphasize that both clinical and academic environments expose physiotherapists to significant stressors that contribute to persistent fatigue. By highlighting the comparable burden of neurasthenia in these settings, the study underscores the need for profession-wide interventions aimed at mitigating occupational fatigue, improving job satisfaction, and safeguarding mental health. Institutional strategies should prioritize workload management, gender-sensitive support mechanisms, and structured wellness programs. Future research should build on these findings using longitudinal and interventional designs to establish causality and evaluate the effectiveness of targeted preventive measures.

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