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Work, Home, and Health: A Sociological Inquiry into Nurses' Perceived Physical Health in Pakistan

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Abstract

The study addresses a critical issue of finding potential sociodemographic variables associated with physical wellbeing of healthcare workers. Specifically, the study aims to identity significant differences in perceived physical health based on marital status, hospital type, and family structure among nurses working in public sector hospitals. The study used quantitative and cross-sectional research design. Date were collected from nurses working in public sector hospitals using convenient sampling technique. SPSS was utilised to manage and perform data analysis. Collected data were analysed by employing statistical tests of Kruskal wails and post hoc test of Bonferroni to identify significant differences in perceived physical across various categories of marital status, hospital type, and family structure. The findings show that there are statistically significant disparities in perceived physical health across different subcategories of marital status, family structure, and hospital type. Particularly, nurses working in tehsil hospitals and belonging to joint families reported better perceived physical health. The study findings suggest work environment and family dynamics are crucial for making perceptions towards physical state among nurses.

***Keywords**: Perceived Physical Health, Nurses, Marital Status, Family Structure, Hospital Type.*

Introduction

Nursing profession is arguably the most demanding physically, emotionally, and psychologically in healthcare sector (Z. Liu, Shi, & Yang, 2022). Nurses working in public sector hospital often have to face several issues like resource constraints, insufficient supporting staff, high patient loads, bureaucratic ritualism, and lack of

institutional support (Christensen, Lægreid, & Stigen, 2006; Hussain et al., 2019). These challenges not only affect their mental health but also can potentially influence their perception about their physical health (Xu & Yang, 2021). Perceived physical health refers to how nurses subjectively evaluates their own physical state (Gallardo-Rodríguez, Poblete-Valderrama, Rodas-Kürten, & Vilas-Boas, 2024). While there have been considerable research on burnout, psychological health, quality of life, and life satisfaction among nurses, perceived physical health remains under-investigate but equally significant aspect of occupational health research (Aiken, Clarke, Sloane, Sochalski, & Silber, 2002; Cha, Lee, Cho, Choi, & Lee, 2022; Cheng, Liu, Yang, Wang, & Yang, 2023; Kang & Lim, 2015).

Perceived physical health is influenced by both sociodemographic (Musshauser, Bader, Wildt, & Hochleitner, 2006) and institutional contexts (Richter & Dragano, 2018). Nurses work in a certain institutional context. It could ne public, private, and semipublic health care facility. Similarly, nurses live in a particular context that shape their attitudes towards their own physical condition. Marital status is potential sociodemographic variable that shape perceived physical health. Married nurses can take advantage of spousal support in performing their official and domestic role. Spousal support helps in improving physical and mental health outcomes. It provides emotional support and necessary resource to face health related challenges (Artazcoz, Cortès, Borrell, Escribà-Agüir, & Cascant, 2011). However, married nurses have to carry out domestic responsibilities along with official obligations. Married nurses has limited access to rest and recovery due to concomitant responsibilities of marriage (Cañadas-De la Fuente et al., 2018). Thus, these diametrically opposite pathways suggest the need to examine the association between marital status and perceived physical health of nurses.

Similarly, institutional context may also affect perceived physical health of nurses. Institutional context refers to a particular healthcare setting where nurses work. Past research indicates that district headquarter hospitals have access to better financial resources, administrative staff, better working conditions, whereas nurses working in tehsil hospital often has to face pathetic working conditions, resource constraints, long duty hours, and broader job roles (Shahzad, Ghafoor, & Ahmad, 2024). Thus, these structural differences between districts headquarter and tehsil hospital may cause variations in perceived physical health of nurses working in different hospital settings.

Family structure is salient feature of collectivist societies like Pakistan. It also potential associated variable of perceived physical health (Cruz, Araujo, & Paixão, 2018). Nurses living in joint of extended family system may face greater caregiving responsibilities and domestic obligations compared to those in nuclear families (Mazzuco & Meggiolaro, 2014). These responsibilities and obligations may take toll on how nurses perceive their own physical state. These dynamics may reduce the time

and energy available for self-care (M.-Y. Chen, Shiao, & Gau, 2007). This may influence nurses' perceived physical health.

This study contributes to the growing but still limited body of literature on the occupational health of nurses by highlighting sociodemographic and institutional factors associated with perceived physical health among nurses. While prior research has explored stress, burnout, and mental health among nurses, few studies have specifically examined perceived physical health through the intersecting lenses of marital status, hospital type, and family structure within the context of Pakistan's public healthcare system. By disaggregating physical health outcomes across these key variables, this study offers important insights into how sociodemographic and institutional arrangements may associate with physical health challenges for nurses. The study findings may inform workforce policies in health context. It can also open new avenues for comparative research across healthcare systems in similar socio-cultural settings.

Literature Review

Past research on occupational research indicates that physical health of nurses is a critical aspect of workforce well-being in healthcare systems (Ferri et al., 2016; Langton & Berger, 2011; Moksnes, Bjørnsen, B. Eilertsen, & Espnes, 2022; Sörensen & Pinquart, 2005). Health scholars have also substantiated this and stated that this was particularly true in low- and middle-income countries. Scholars have argued that perceived physical health associated with sociodemographic, institutional, economic, cultural and social factors. Marital status, family structure and hospital setting are potential factors that are associated with variation in perceived physical health (Durand-Sanchez et al., 2023; Gallardo-Rodríguez et al., 2024).

Marital status has been consistently linked to health outcomes, though its direction and strength often depend on gender, social context, and role expectations (Artazcoz et al., 2011; H. Liu & Umberson, 2008). Some studies suggest that marriage provides emotional and instrumental support that promotes better health outcomes, while others indicate that role strain from balancing professional and domestic duties may negate these benefits for working women, including nurses (Y.-H. Chen et al., 2022; Robles, 2014). In the South Asian context, marriage may intensify gendered responsibilities. It can potentially erode the health benefits typically associated with marital support (Mehrara, Mazaheri, & Hasanzadeh, 2019).

The institutional setting, particularly the type of hospital where nurses work, also plays a significant role. Research has shown that nurses in tertiary or well-resourced hospitals tend to report better health outcomes (Shahzad et al., 2024). Past research show that this could be due to more structured workflows, higher staffing ratios, and improved infrastructure in district hospital (Choi, Um, & Cho, 2023; Chong, Frey, Chien, Cheng, & Gloster, 2023; Cui et al., 2023; Leonard, Linden, & Grant, 2020; Martínez, Valencia, & Trofimoff, 2020). In contrast, those working in tehsil or rural health centers often experience higher physical workloads and job insecurity. Past

studies demonstrate that these factors are associated with musculoskeletal complaints and fatigue (Sharma et al., 2014). These variations in perceived physical health highlight the need to examine the association between hospital type health perceptions of nurses.

Furthermore, family structure shapes the daily lives of nurses in culturally significant ways. Extended and joint families, while offering emotional and financial support, may also impose additional caregiving burdens on women, especially in patriarchal societies (Leonard et al., 2020; Martínez et al., 2020). The lack of autonomy and increased domestic responsibilities associated with such family systems have been linked to poorer health outcomes among working women (Santos, Sousa, Serra, & Rocha, 2016; Trógolo, Moretti, & Medrano, 2022). Conversely, nuclear families may allow greater control over personal routines, potentially facilitating better health maintenance (Vargas-Jiménez, Castro-Castañeda, Agulló Tomás, & Medina Centeno, 2020).

Despite these insights, there remains a dearth of empirical research investigating the potential differences in perceived physical health based on marital status, hospital type, and family structure in the Pakistani public health system. This study seeks to fill that gap. Thus, the study propose the following hypotheses 1) there is a significant difference in perceived physical health among nurses with different marital statuses, 2) there is a significant difference in perceived physical health among nurses working in different types of public hospitals, and 3) there is a significant difference in perceived physical health among nurses from different family types.

Material and Methods

The study used a convenience sampling technique. The study sample consisted of nurses working in public health facilities in Punjab. Data were collected through in-person visits and online questionnaire distribution on social media platforms (such as Facebook, WhatsApp, etc.). Data were collected from health facilities located in District Head Quarters (DHQ), Tehsil Head Quarters (THQ), and Rural Health Centers (RHC) in one of 9 divisions of Punjab province. 450 questionnaires were distributed to get a representative sample from DHQ, THQ, and RHC. 340 questionnaires were returned (response rate = 75 %). 30 questionnaires were not filled and had many missing values. So these questionnaires were not considered.

Finally, 310 questionnaires were found complete and usable. The sample for this study comprised 310 participants, with distribution across different hospital statuses as follows: 82 individuals from district hospitals (26.45%), 88 from tehsil hospitals (28.39%), and 140 from rural hospitals (45.16%). In terms of shift time, 119 individuals (38.39%) worked morning shifts, 127 (40.97%) worked evening shifts, and 64 (20.65%) worked night shifts. Regarding education level, the sample included 31 individuals (10%) with a middle-level education, 119 (38.39%) with matric-level education, 92 (29.68%) with intermediate-level education, 44 (14.19%) with graduate-level education, and 24 (7.74%) with masters-level education. In terms of average work

hours, 87 participants (28.06%) worked full-time (8 hours), 119 (38.39%) had extensive hours (12 hours), 76 (24.52%) had intensive hours (16 hours), and 28 (9.03%) had prolonged hours (20 hours). Regarding marital status, 95 participants (30.65%) were single, 157 (50.65%) were married, 26 (8.39%) were separated, 19 (6.13%) were divorced, and 13 (4.19%) were widowed.

The questionnaire comprised two parts. In the first part, socio-demographic information was asked including marital status, education level, and hospital status. In the second part, Perceived Physical Health Scale was employed to assess the physical well-being of nurses. This scale comprised six items that reflect common physical health concerns experienced in the workplace. The items included statements such as: "I experience physical pain, neck and back ache, sore arms, legs etc.", "I experience fatigue.", "I have headache.", "I feel dizziness.", "I have faced accidents or near accidents.", and "I experience sleep disturbances." Each item was measured using a 5-point Likert scale ranging from *Strongly Disagree (1)* to *Strongly Agree (5)*, with higher scores indicating greater levels of perceived physical health issues.

Table 1 presents the psychometric properties of the Perceived Physical Health scale. The scale demonstrated strong internal reliability, with a Cronbach's alpha of .802 and a composite reliability (CR) of .870, indicating good consistency among the six items. The average variance extracted (AVE) was .527, surpassing the recommended threshold of .50, which confirms adequate convergent validity of the construct (Fornell & Larcker, 1981).

Item loadings ranged from .694 to .772, all exceeding the .60 criterion, suggesting each item meaningfully contributes to the latent construct. Multicollinearity was assessed using the variance inflation factor (VIF), with all values below 2, indicating no serious multicollinearity issues among items (Hair et al., 2014). The median score for perceived physical health was 18.5, with an interquartile range of 14 to 21, reflecting moderate to high perceived physical wellbeing in the sample. Overall, the scale shows satisfactory reliability and validity, supporting its use for measuring perceived physical health in this study.

Table 1

Item Loadings, Internal Reliability, Construct Validity, and Multicollinearity of Perceived Physical Health Scale

Items	Loadings	Internal reliability	CR	AVE	VIF
Perceived physical health scale		.802	.870	.527	
Perceived physical health_1	.719				1.498
Perceived physical health_2	.772				1.700
Perceived physical health_3	.700				1.451
Perceived physical health_4	.757				1.638
Perceived physical health_5	.694				1.283
Perceived physical health_6	.709				1.526
Median (Q1, Q3)	18.5(14,21)				

Note: CR= Composite Reliability, AVE= Average Variance Extracted, VIF= Variance Inflation Factor

Results and Discussion

This section presents the results of the study along with discussion.

Hypothesis 1: There is a significant difference in perceived physical health among nurses with different marital statuses.

Hypothesis 1 evaluates whether there is a significant difference in perceived physical health among nurses with different marital statuses. The results provided strong evidence of a difference ($p < 0.05$) between the mean rank of at least one pair of marital status groups, $\chi^2(4) = 18.961$, $p = .001$, with a mean rank of perceived physical health 136.05 for single, 149.94 for married, 148.64 for separated, 183.82 for divorced, and 239.65 for widowed nurses. Hence, hypothesis 1 is approved.

Two potential reasons for the significant difference in perceived physical health among nurses with different marital statuses are: (1) Married nurses may have greater social and emotional support, which can buffer stress and promote better physical health (Umberson & Montez, 2010); (2) Widowed or divorced nurses might experience higher stress and reduced self-care, negatively affecting their physical health (Liu & Umberson, 2008). This finding aligns with existing literature showing marital status as a significant associative variable of health, where married individuals often report better physical health outcomes compared to their single, divorced, or widowed counterparts (Robles et al., 2014).

Table 2						
Comparative Analysis of Perceived Physical Health						
Groups	**n**	**Mean rank**	**Median (Q1, Q3)**	**df**	**Chi square**	**P value**
Marital status				4	18.961	.001
single	94	136.05	17.50 (9, 21)			
Married	151	149.94	19 (13, 21)			
Separated	25	148.64	17 (16, 20)			
Divorced	19	183.82	19 (17, 25)			
Widow	13	239.65	23 (20.50, 26)			
Hospital status				3	14.622	.001
District headquarter	80	147.76	18 (14.25, 21)			
Tehsil headquarter	86	180.77	20 (16, 23)			
Rural health center	136	135.19	18 (11, 20)			
Family structure				2	9.177	.010
nuclear	108	137.26	18 (12, 20)			
Joint	169	154.22	18 (14, 21)			
Extended	25	194.62	21 (17, 23)			

Hypothesis 2: There is a significant difference in perceived physical health among nurses working in different types of public hospitals

Hypothesis 2 evaluates whether there is a significant difference in perceived physical health among nurses working in different types of public hospitals. The results provided strong evidence of a difference ($p < 0.05$) between the mean ranks of at least one pair of hospital types, $\chi^2(2) = 14.622$, $p = .001$, with a mean rank of perceived physical health 147.76 for district hospitals, 180.77 for tehsil hospitals, and 135.19 for rural health centers. Therefore, hypothesis 2 is approved.

This finding could be due to two potential causes for the significant difference in perceived physical health among nurses working in different types of public hospitals. First, variation in workload and resource availability, where nurses in better-equipped hospitals may experience less physical strain and better health (Aiken et al., 2002). Second differences in work environment conditions, such as staffing levels and patient acuity, which can affect physical health through stress and fatigue (Shields & Wilkins, 2009).These factors are consistent with research indicating that hospital setting is associated with nurses' health due to disparities in organizational support and job demands (Bae, 2011).

Hypothesis 3: There is a significant difference in perceived physical health among nurses from different family types.

Hypothesis 3 evaluates whether there is a significant difference in perceived physical health among nurses from different family types. The results provided strong evidence of a difference ($p < 0.05$) between the mean ranks of at least one pair of

family structures, $\chi^2(2) = 9.177$, $p = .010$, with a mean rank of perceived physical health 137.26 for nuclear families, 154.22 for joint families, and 194.62 for extended families. Thus, hypothesis 3 is approved

The significant difference in perceived physical health among nurses from different family types may be influenced by variations in social and emotional support. Nurses living in extended families often benefit from greater practical assistance and emotional backing, which can buffer stress and promote better health outcomes (Thompson & Walker, 1989). In contrast, nurses in nuclear families may face higher work-family conflict, as they bear more direct responsibility for household and childcare duties without extended family help, leading to increased fatigue and poorer physical health (Greenhaus & Beutell, 1985).

Additionally, nurses from joint families might experience increased household and caregiving responsibilities, which can contribute to physical strain and negatively affect their health perception (Parveen & Sinha, 2018). The availability of caregiving support within different family types can also influence nurses' ability to rest and engage in self-care, directly impacting their physical wellbeing (Voydanoff, 2005). Lastly, cultural norms associated with family structures shape health behaviors and stress levels differently, potentially contributing to disparities in perceived physical health among nurses (Liu et al., 2016).

Post hoc tests were also applied to assess the significant difference between groups.

The table presents a comprehensive comparison of mean scores on perceived physical health across different categories of three sociodemographic and institutional factors: marital status, hospital type, and family structure. The comparisons use post-hoc statistical of Bonferroni to determine where significant differences lie between groups. The table provides mean differences, significance values (p-values), and 95% confidence intervals for each pairwise comparison.

Table 3

Multiple Comparisons of Perceived Physical Health based on Marital Status, Family Structure, Hospital Type

Groups		Mean Difference	P value	95% Confidence Interval	
				Lower Bound	Upper Bound
Marital Status					
single	Married	-1.07102	1.000	-3.1306	.9886
	Separated	-1.75234	1.000	-5.2800	1.7753
	Divorced	-3.76708	.073	-7.7103	.1761
	Widow	-6.64157*	.001	-11.2804	-2.0028
Married	single	1.07102	1.000	-.9886	3.1306
	Separated	-.68132	1.000	-4.0662	2.7036
	Divorced	-2.69606	.466	-6.5121	1.1199
	Widow	-5.57056*	.006	-10.1017	-1.0394
Separated	single	1.75234	1.000	-1.7753	5.2800
	Married	.68132	1.000	-2.7036	4.0662
	Divorced	-2.01474	1.000	-6.7859	2.7565
	Widow	-4.88923	.104	-10.2496	.4712
Divorced	single	3.76708	.073	-.1761	7.7103
	Married	2.69606	.466	-1.1199	6.5121
	Separated	2.01474	1.000	-2.7565	6.7859
	Widow	-2.87449	1.000	-8.5170	2.7680
Widow	single	6.64157*	.001	2.0028	11.2804
	Married	5.57056*	.006	1.0394	10.1017
	Separated	4.88923	.104	-.4712	10.2496
	Divorced	2.87449	1.000	-2.7680	8.5170
Hospital					
District headquarter	Tehsil headquarter	-2.09535*	.047	-4.1685	-.0222
	Rural health center	1.25588	.327	-.6247	3.1364
Tehsil headquarter	District headquarter	2.09535*	.047	.0222	4.1685
	Rural health center	3.35123*	.000	1.5125	5.1900
Rural health center	District headquarter	-1.25588	.327	-3.1364	.6247
	Tehsil headquarter	-3.35123*	.000	-5.1900	-1.5125
Family type					
Nuclear	Joint	-1.37053	.147	-3.0411	.3000
	Extended	-3.57148*	.014	-6.5811	-.5619
Joint	Nuclear	1.37053	.147	-.3000	3.0411
	Extended	-2.20095	.208	-5.1067	.7048
Extended	Nuclear	3.57148*	.014	.5619	6.5811
	Joint	2.20095	.208	-.7048	5.1067

*The mean difference is significant at the 0.05 level.

Beginning with marital status, the data reveal that widowed nurses consistently report significantly higher values on the perceived physical health compared to those who are single or married. The mean difference between widows and single nurses is 6.64, which is statistically significant with a p-value of .001 and a confidence interval that does not cross zero (2.00 to 11.28). A similarly significant difference is observed between widowed and married nurses (mean difference = 5.57, p = .006). These findings suggest that widowhood may be associated with perceived physical health—possibly stress, alienation, or another psychosocial condition—when compared with those who are still in marital relationships or never married. Interestingly, the comparisons between divorced and single nurses approach significance (p = .073), indicating a potential trend, but the data are not strong enough to confirm a significant difference.

Other comparisons among single, married, and separated groups yield no statistically significant differences, suggesting that, aside from widowhood, marital status may not significantly associate with perceived physical health.

When examining hospital type, nurses employed in Tehsil Headquarter Hospitals exhibit significantly higher mean scores on the dependent variable compared to those in District Headquarter Hospitals and Rural Health Centers. The mean difference between Tehsil and District HQ hospitals is 2.09 (p = .047), and between Tehsil HQ and Rural Health Centers is 3.35 (p < .001). These statistically significant differences indicate that working in a Tehsil Headquarter Hospital is associated with higher levels of perceived physical health, perhaps due to unique stressors such as understaffing, administrative inefficiencies, or greater patient load. Conversely, no significant difference was observed between nurses in District HQ and Rural Health Centers, which may reflect more stable or comparable working conditions in those institutions.

In terms of family type, the only statistically significant finding is between nurses from nuclear and extended families. Nurses from extended families report higher mean scores on the perceived physical health, with a significant mean difference of 3.57 (p = .014). This suggests that living in extended families may contribute to increased psychological or social strain, perhaps due to larger household responsibilities, intergenerational conflict, or a lack of personal space. While the joint-extended family comparison is not statistically significant, it trends in a similar direction, hinting at possible patterns that might become clearer with a larger sample size. The nuclear-joint family structure comparison shows no significant difference. This suggests that the distinction between these two family structures might not be meaningful in relation to the perceived physical health.

Taken together, these results underscore the importance of sociodemographic and institutional contexts in shaping nurses' perceptions about their physical condition. Widowhood, employment in Tehsil-level health institutions, and living in extended family systems emerge as significant factors associated with perceived physical health. Psychosocial support for widowed workers, reforms in Tehsil-level hospitals,

and family counseling in extended households may be viable directions to mitigate these impacts. Further analysis, including multivariate modeling, could help clarify the interplay of these factors and assess their independent and combined effects more robustly.

Conclusion

The study concludes that perceived physical health among nurses is significantly associated with their marital status, type of hospital they work in, and family structure. These findings underscore the importance of sociodemographic and institutional contexts in shaping nurses' perceptions towards their physical state. Future research should explore potential factors associated with perceived physical health among nurses. Family-work conflict, family centrality, family satisfaction could be potential variables associated with perceive physical health of nurses. Future research on occupational health can also assess association of the study variables in private sector hospitals.

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