Pakistan Journal of Gender Studies
Vol. 26(2), 2026, pp.125-143,ISSN: 2072-0394(Print), ISSN: 2663-8886(Online)

Shifting Demographics in Knee Osteoarthritis: Psychosocial Needs of Younger and Poor Women Seeking Services from the Public Sector in Pakistan

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Abstract

The study aimed to identify predictors of social support and emotional Well-being among poor women with knee osteoarthritis. *Methods*: Standardized measures were included in the survey. Reliability tests, independent sample t-tests, and multivariate logistic regression were applied. A total of 310 women seeking consultation at the out-patient department of a large public tertiary care hospital in Pakistan were sampled. The majority (54.8%) were younger than 45 years and reported lower emotional and spiritual Well-being, greater financial burden, and less social support. Lower odds of social support were associated with women having high pain severity (AOR=1.33; p=0.002), widowhood (AOR=1.65; p=0.003), rural residence (AOR=1.38; p=0.003), lack of education (AOR=1.60; p=0.007), lower emotional Well-being (AOR=1.48; p=0.015), and higher financial costs (AOR=1.56; p=0.044). Lower emotional Well-being was associated with higher financial costs (AOR=4.71; p=0.001), illiteracy (AOR=1.52; p=0.001), unemployment (AOR=1.79; p=0.002), rural residence (AOR=1.01; p=0.004), lower spiritual Well-being (AOR=1.45; p=0.006), and greater pain severity (AOR=1.28; p=0.060). The study recommends urgent socio-psychological interventions for poor women reliant on public health services, especially younger women, with implications for other developing countries. Younger women require greater support for childcare and early lifestyle modifications, while both age groups need interventions to improve health management, self-efficacy, and spiritual coping.

Keywords: Social Support, Emotional Well-Being, Knee Osteoarthritis, Chronic Disease, Pakistan.

Introduction

Ranked as the most common form of osteoarthritis (OA), knee OA affects more than 654 million people worldwide and is known to be a progressive multi-factorial joint disease

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affecting more women than men (Cui et al., 2020). Existing literature has pointed to the high prevalence of knee OA in low-income and middle-income countries (Fransen et al., 2011), with Pakistan being at high risk too due to its large population of over 250 million. Some of the reasons why knee OA is found more in women compared to men are due to differences in knee anatomy, kinematics, previous knee injury, and hormonal influences; with social factors also playing a role, such as management of treatment and the allocation of resources (Hame & Alexander, 2013). Women are also more likely than men to suffer from severe arthritis in the knee, with greater pain symptoms, and a higher incidence of recommended arthroplasty (O'Connor, 2007; Eun et al., 2022). There is concern that women from the developing world need more medical attention, social support, treatment protocols, and finances to manage knee OA as they are deprived of resources and support due to poverty, illiteracy, and lower social status (Bhaskar et al., 2016).

Despite the fact that knee OA is assumed to be a disease associated with aging, many younger women suffer from the disease, mainly due to inflammation, increased joint load, joint injury, obesity, type of physical work, and family history (Ackerman et al., 2017). Global estimates suggest that the risk of knee OA is 16% for people aged 15 years and over; 23% for people 40 years and over (Cui et al., 2020). Though clinicians may argue for the need for weight management, physical activity, and timely health-seeking to manage knee OA in women (Claassen et al., 2018), there is recognition that disease management also requires adequate social support (Ethgen et al., 2004) and emotional Well-being (Minaković et al., 2023). This is because the disease is associated with pain, compromised mobility, and progression over the years, and is known to contribute to psychological challenges and withdrawal from society in patients (Hawker et al., 2011; Rathbun et al., 2018).

Resource-poor countries are known to focus on diagnosis and management of disease rather than developing holistic policy and interventions for social support and emotional Well-being (Nulu, 2017). Additionally, poor women who are dependent on the public sector for health services have very little support for the socio-psychological services needed for the management of disease (Ackerman et al., 2017). Pakistan's incidence of knee OA is reported to be nearly 30%, with approximately two-thirds estimated to be women patients (Iqbal et al., 2011). There is very little research in the country to guide policy recommendations for the socio-psychological Well-being of women patients with knee OA (Malik et al., 2022). In fact, poor women with chronic disease burdens are not a priority for research in Pakistan, and they are known to be deprived of social, financial, and emotional support for health management (Rizvi Jafree, 2020a). In addition, poor women, and especially women of reproductive years, struggling with pain and immobility issues, may receive less support in a conservative society which expects them to assume primary care for the house and family (Rizvi Jafree, 2020b). In lieu of this, this study aimed to identify the socio-demographic characteristics of poor women knee OA

patients seeking free services at a public sector hospital, and to determine predictors of lower social support and emotional Well-being. The study findings would have implications for other poor women across the developing world dependent on the public sector for free health services (Hussain et al., 2018).

Review of the Literature

Review of scholarship suggests that knee OA has become one of the fastest-growing causes of pain, immobility, and deteriorating life quality for women (Geng et al., 2023). This increase in non-communicable disease burden is not only because of natural aging, but is affecting younger women due to unfavorable eating habits, rising obesity, sedentary lifestyles, desk jobs, occupational and family stress, joint injuries, and chronic inflammatory conditions (Driban et al., 2020). Evidence also confirms that low and middle-income countries are experiencing the greatest increase in knee OA disease burden due to lack of awareness, preventive services, and delayed diagnosis (Li et al., 2024). Scholarship also explains that knee OA is not just a physical and degenerative joint disease, but that it is a bio-psychosocial condition, affecting emotions and overall Well-being (Wallis et al., 2019). Though clinicians commonly address physical conditions such as cartilage degeneration and inflammation, they may not be focusing on other areas such as psychosocial Well-being, financial access and poverty levels, family support and social isolation, and health literacy and access (Thom et al., 2023). In this way, the treatment plan for patients can be limited, preventing optimal results for symptom containment, treatment adherence, and mobility outcomes. Researchers have also recommended that health policymakers and health social workers approach knee OA management for women through a holistic bio-psychosocial approach (Fouad et al., 2026).

Women from patriarchal and conservative regions like Pakistan may represent one of the most vulnerable populations affected by knee OA. Evidence already confirms that women in the country are burdened by housekeeping and care giving responsibilities for children and other dependents, which compromises their ability to self-care and seek medical attention (Saeed & Qureshi, 2024). Furthermore, women in the country face socio-economic inequalities and belong predominantly to the non-working or informal sector of the economy, leaving them with limited out-of-pocket expenses to manage chronic disease burdens (Rizvi Jafree, 2023). Family responsibilities and lack of finances in women contribute to delays in treatment and lack of follow-up when tests and medication are costly (Rizvi & Barlow, 2023). In the case of knee OA and lack of support for household and child care, women may be forced to continue with daily activities without relief for pain management and rest, presenting poorer physical functioning over time and advanced disease progression compared to men. International scholarship also confirms that women with less social control, family agency, and decision-making rights have poorer outcomes for chronic disease management (August & Sorkin, 2010).

International scholarship has recognized the integral role of social support (August & Sorkin, 2010) and emotional Well-being (Turner & Kelly, 2000) for women dealing with chronic diseases. Women who have greater social and emotional support are known to have better access to healthcare and better adherence to treatment plans and pain management (Gallant, 2003). Additionally, specific care for knee OA such as physical rehabilitation, support for physical mobility, and practical assistance for daily life tasks may require immense family support (Al-Taiar et al., 2013). This practical support must also be coupled with emotional encouragement and kind behavior, so that women do not feel guilty and overwhelmed that they have become a burden on their family and friends (Carmona-Terés et al., 2017). Alternatively, when women do not receive social and emotional support, they are known to suffer from mental health challenges (Rizvi Jafree, 2020a) and functional decline and social isolation, with poor health-related outcomes for chronic disease management (Theofilou, 2023).

Scholarship further reveals that coping strategies are an important predictor for women's management of chronic disease burdens (Conduah et al., 2025). Patients who are able to adopt problem-focused coping, emotion-focused coping, and avoidance coping are able to manage challenges such as stress, maintaining a normal life, and adapting to treatment regimes. International literature has reviewed, women with knee OA who have positive coping strategies and resilience have better health-related outcomes for pain management and disease progression (Bartley et al., 2017). Another major determinant of knee OA in developing countries is socio-economic inequalities and poverty levels. Impoverished women dependent on free public health care services are reliant on the quality of services by providers and centers, the extent of preventive care and early diagnosis follow-up by the health sector, and comprehensive financial coverage for health-related issues (Sapkota et al., 2021). Apart from poverty-related issues, women in developing countries also suffer from low literacy, low health awareness, and lack of family prioritization for women's health (Rizvi Jafree et al., 2023). This affects early diagnosis, timely treatment, and the severity of disease progression. Households with fewer resources will also not be able to support women with dietary needs, additional and continued medical tests not supported by the public sector, and replacement for household and childcare duties. These combined socio-economic inequalities can worsen quality of life in women with knee OA.

Though there is some international focus on the psychosocial dimensions of knee OA (Yijia et al., 2024), studies in Pakistan have primarily focused on clinical aspects, ignoring factors such as social support, emotional Well-being, and socio-economic characteristics among poor women seeking public health sector services (Tayyab et al., 2025). It is important to investigate these gaps so that Pakistan's health policy can be developed along the lines of a comprehensive and holistic model, which is also responsive to gender-based needs and realities. In lieu of this, the aim of this study is to identify the socio-demographic characteristics of poor women with knee OA, who are

seeking free treatment at a public sector hospital, and to examine the predictors of lower social support and emotional Well-being in these women.

Research Methodology

Research Design and Ethics

This is a cross-sectional quantitative study, which received ethics approval from the Institute Review Board of [Blinded for Review]. Informed consent was taken from participants, and the survey was anonymous and confidential. Interviews took place in a private space provided by the hospital administration. Standardized scales were used, and no sensitive questions were included.

Sample, Selection Criteria and Data Collection

The selection criterion was poor women patients with knee OA seeking free treatment at a large tertiary healthcare unit in Lahore, Pakistan- Jinnah Hospital (JH). Lahore is the capital of Punjab province, the second largest city in the country, and home to nearly 15 million people. JH is free of cost to the public, frequented by almost 2,000 patients a day (Jinnah Hospital Lahore, 2008), with 1,250 beds (Raza et al., 2021), and ranked as Pakistan's second-best public sector hospital (Junaidi, 2016). It is also a teaching hospital, associated with Allama Iqbal Medical College, and has departments related to 30 different specialties, including services for osteoarthritis. Though JH is in urban Lahore, it is frequented by many rural community members residing in and around the city. We collected data between the months of August 2024 to November 2024. Patients were approached while they were waiting for their turn at the out-patient clinical area. A total of 609 women were contacted, of whom 310 gave their consent.

Instrument

The questionnaire included seven socio-demographic questions. Relevant items were taken to measure the study domains, from the following standardized scales: (1) ‘Pain Severity’, using The Western Ontario and McMaster Universities Osteoarthritis Index (Ebrahimzadeh et al., 2014); (2) ‘Emotional Well-being’ using the Body-Mind-Spirit Well-Being Scale (Ng et al., 2005); (3) ‘Spiritual Well-being’, using the Body-Mind-Spirit Well-Being Scale; (4) ‘Financial cost’ using the Health-Related Out-of-Pocket Costs Survey (Laberge et al., 2021); and (5) ‘Social Support’, using the Social Support Scale in Chronic Diseases–TR (SSCII-TR) (Aykar et al., 2014). The survey was translated into Urdu by the third author through the forward-backward method and was double-checked by the second author. The data was collected through a Google survey using the assisted method, as the majority of patients at public sector tertiary care hospitals of Pakistan are illiterate.

Data Analysis

The data was coded and transferred to SPSS 25.0 for analysis. Descriptive statistics were used to present the socio-demographic characteristics of participants. Bivariate coding was used to present predictors of social support and emotional Well-being. The multivariate logistic regression model was controlled for age and monthly household income, and both odds ratios (OR) and adjusted odds ratios (AOR) were reported with 95% confidence intervals. In addition, independent-samples t-tests were used to show mean comparisons between younger and older patients with OA. P values of less than 0.05 were considered significant.

Reliability Results

Table 1 presents the reliability results for the study domains, which showed satisfactory Cronbach alpha values.

Table 1: Reliability results for study domains		
	Items	**Cronbach alpha**
Pain severity scale	3	0.680
Feelings & Emotions Well-being	3	0.847
Spiritual Coping	4	0.814
Financial Cost	4	0.938
Social Support	3	0.887

Results

Socio-Demographic Results

Table 2 presents the socio-demographic characteristics of the sample. Our sample is nearly evenly split between women above the age of 46 years (45.2%) and women below 45 years (54.8%). Majority of them belong to very poor households, earning less than USD 179.66 per month (63.2%), and are either uneducated (45.5%) or with less than secondary schooling of 10th grade studies (24.2%). Nearly all are unemployed (85.5%), currently married (83.8%), and 81.7% have between 2 to 5 children. A considerable proportion of women belonged to rural areas (32.2%).

Table 2: Socio-Demographic characteristics of women knee OA patients (N=310)		
	F	**%**
Age		
Less than 30	40	12.9%
31-45	130	41.9%
46-60	97	31.3%
61 and above	43	13.9%

Monthly Household Income		
Less than PKR 24,999/ USD 89.83	55	17.7%
PKR 25,000-49,999/ USD 89.84-179.66	141	45.5%
PKR 50,000/ USD 179.67 and above	114	36.8%
Literacy		
Uneducated	141	45.5%
Primary	22	7.1%
Secondary	53	17.1%
Graduate	94	30.3
Current Occupation		
Unemployed	265	85.5%
Working	45	14.5%
Marital Status		
Currently Married	260	83.8%
Widowed	50	16.2%
Number of children		
Two or less	60	19.4%
3-5	193	62.3%
More than 5	57	18.4%
Regional belonging		
Rural	100	32.2%
Urban	210	67.7%

Predictors of Social Support and Emotional Well-Being

Table 3 presents the odds ratios and adjusted odds ratios, showing predictors of lower social support in women patients with knee OA. We found that women with the following characteristics have significantly lower adjusted odds of social support: (i) those with higher pain severity (AOR= 1.33; P value= 0.002); (ii) widowed women (AOR= 1.65; P value= 0.003); (iii) rural women (AOR= 1.38; P value= 0.003); (iv) uneducated women (AOR= 1.60; P value= 0.007); (v) those experiencing low emotional Well-being (AOR= 1.48; P value= 0.015); and (vi) those facing higher financial costs (AOR= 1.56; P value= 0.044).

Table 3: Multivariate regression predictors for perceived lower social support (N=310)

	OR (CI); P value	AOR* (CI); P value
Age		
46 and above	1.39 (1.27-2.18); **0.050**	
Less than 45	1	
Monthly Household Income		
Less than PKR 49,999/ USD 179.66	1.99 (1.18-1.40); **0.050**	
PKR 50,000 USD 179.67 and above	1	
Literacy		
Uneducated	1.65 (1.20-2.29); **0.002**	1.60 (1.13-2.25); **0.007**
Educated	1	1

Current Occupation Unemployed Working	1.00 (0.85-1.18); 0.944 1	0.98 (0.83-1.17); 0.901 1
Marital Status Widowed Currently Married	1.46 (1.12-2.76); **0.003** 1	1.65 (1.19-2.28); **0.003** 1
Number of children 3 or more 2 or less	0.98 (0.68-1.40); 0.912 1	0.98 (0.65-1.46); 0.923 1
Regional belonging Rural Urban	1.33 (1.18-2.61); **0.000**	1.38 (1.20-0.72); **0.003** 1
Emotional Well-being Low High	1.44 (1.02-2.78); **0.005** 1	1.48 (1.26-2.86); **0.015** 1
Pain Severity High Low	1.35 (1.18-2.68); **0.002** 1	1.33 (1.16-2.67); **0.002** 1
Financial Costs High Low	1.54 (1.31-2.98); **0.026** 1	1.56 (1.32-1.98); **0.044** 1
***-** AOR have been calculated holding age and income as control variables		

Table 4 presents the odds ratios and adjusted odds ratios, showing predictors of lower emotional Well-being in women patients with knee OA. Results show that the following groups of women have significantly lower adjusted odds of emotional Well-being: (i) those suffering from higher financial costs (AOR= 4.71; P value= 0.001); (ii) uneducated women (AOR= 1.52; P value= 0.001); (iii) unemployed (AOR= 1.79; P value= 0.002); (iv) rural women (AOR= 1.01; P value= 0.004); (v) those with lower spiritual Well-being (AOR= 1.45; P value= 0.006); and (iv) those suffering from higher pain severity (AOR= 1.28; P value= 0.060).

Table 4: Multivariate regression predictors for perceived lower emotional Well-being (N=310)

	OR (CI); P value	**AOR* (CI); P value**
Age 46 and above Less than 45	2.65 (1.98-4.14); **0.050** 1	
Monthly Household Income Less than PKR 49,999 PKR 50,000 and above	0.57 (0.17-1.55); 0.246 1	
Literacy Uneducated Educated	1.49 (1.16-3.49); **0.000** 1	1.52 (1.35-2.78); **0.001** 1
Current Occupation Unemployed Working	1.70 (1.57-2.86); **0.001** 1	1.79 (1.58-2.88); **0.002** 1

Marital Status Widowed Currently Married	 1.26 (1.02-3.16); **0.030** 1	 1.45 (1.02-3.08); **0.042** 1
Number of children 3 or more 2 or less	 0.27 (0.52-1.43); 0.125 1	 0.67 (0.31-1.46); 0.319 1
Regional belonging Rural Urban	 1.13 (1.08-2.99); **0.003**	 1.01 (1.01-2.72); **0.004** 1
Spiritual Well-being Low High	 1.32 (1.24-0.78); **0.005** 1	 1.45 (1.07-2.13); **0.006** 1
Pain Severity High Low	 1.79 (1.06-2.25); **0.050** 1	 1.28 (1.09-3.04); **0.060** 1
Financial Costs High Low	 4.48 (1.85-5.27); **0.020** 1	 4.71 (1.91-6.61); **0.001** 1
***-** AOR have been calculated holding age and income as control variables		

Mean Comparison between Younger and Older Women

Table 5 presents the mean comparison between younger (less than 45 years) and older (46 years and above) women knee OA patients. We find that younger women face the following challenges at significantly higher mean scores compared to older women: (i) they are worried about their condition (p= 0.004); (ii) they feel more helpless (p= 0.005); (iii) face more costs for consultancy (p= 0.004); (iv) face more costs for travel for health needs (p=0.003); (v) they have less emotional support from family and friends (0.004), and (vi) also have less family and friends when needed for assistance (p=0.005). Comparatively, older women face the following challenges at significantly higher mean scores: (i) they feel more pain while walking (p=0.001); (iii) they feel more pain when climbing stairs (p=0.000); and (iii) they feel more pain while sleeping (p=0.003).

Table 5: Mean comparison for study domains with respect to younger (less than 45 years, n=170) and older (46 years and above, n=140) women knee OA patients

		N	Mean	Std. Deviation	*t* (p value)
Emotional Well-being					
Happy	Less than 45 years	170	4.01	1.158	0.08 (0.643)
	46 years and above	140	4.00	1.122	
Relaxed and at ease	Less than 45 years	170	4.21	1.126	0.91 (0.128)
	46 years and above	140	4.32	.954	
Worried	Less than 45 years	170	**3.99**	1.372	**1.57 (0.004)**
	46 years and above	140	3.23	1.255	

Pain severity					
Feel pain when walking	Less than 45 years	170	3.21	.992	2.92 **(0.001)**
	46 years and above	140	**3.50**	.734	
Pain when climbing stairs	Less than 45 years	170	3.58	1.529	1.48 **(0.000)**
	46 years and above	140	**3.82**	1.242	
Pain while sleeping	Less than 45 years	170	3.78	1.629	1.40 **(0.003)**
	46 years and above	140	**3.92**	1.342	
Spiritual coping					
Feeling helpless	Less than 45 years	170	**3.71**	.990	1.40 **(0.005)**
	46 years and above	140	3.16	1.022	
Grateful for those around me	Less than 45 years	170	2.40	1.051	0.65 (0.508)
	46 years and above	140	2.48	1.089	
I am stronger post diagnosis	Less than 45 years	170	2.40	1.051	0.65 (0.508)
	46 years and above	140	2.48	1.089	
I feel calm & happy	Less than 45 years	170	2.71	.993	0.09 (0.718)
	46 years and above	140	2.72	.996	
Financial cost					
Consultancy fees	Less than 45 years	170	**3.83**	1.361	1.88 **(0.004)**
	46 years and above	140	3.52	1.500	
Purchase of prescription drugs	Less than 45 years	170	4.03	1.291	0.28 (0.778)
	46 years and above	140	3.99	1.316	
Travel costs	Less than 45 years	170	**4.00**	1.259	1.41 **(0.003)**
	46 years and above	140	3.78	1.413	
Expenditures of medical tests	Less than 45 years	170	4.22	1.141	0.97 (0.087)
	46 years and above	140	4.09	1.324	
Social support					
Family & friends support me emotionally	Less than 45 years	170	3.30	.749	1.22 **(0.004)**
	46 years and above	140	**3.78**	.728	
Family & friends comfort me	Less than 45 years	170	2.34	.697	0.24 (0.293)
	46 years and above	140	2.32	.742	
Family& friends help me when needed	Less than 45 years	170	3.27	.705	1.54 **(0.005)**
	46 years and above	140	**3.32**	.742	

Discussion

Pakistan, with a monthly household income of below USD 179.66 (PBS, 2024), and having none or little literacy (below grade 10). This confirms that the poorest and illiterate women patients in the country seek healthcare from free public hospitals, which are currently not providing quality and holistic services for chronic disease management, such as mental health counseling and follow-up through social workers (Nasir, 2024). With regard to predictors of social support, we found that women knee OA patients who are uneducated, widowed, and from rural areas have very little social support. Similarly, there was lower emotional Well-being in women knee OA patients who were uneducated,

non-working, and belonging to rural areas. Women with dual problems of low literacy and low social support are unable to make effective decisions for health management, including searching for health information, processing the information critically, and adopting behavioral and lifestyle changes to prevent progression (Sylwander et al., 2023). Other research corroborates that unemployed and widowed women face stressful life circumstances and are deprived of both finances and the needed social ties that are required for knee OA disease management (Sherman, 2003). Widowed women may also be less likely to opt for knee replacement due to the absence of a spouse and inability to ask other relatives for support during and post-surgery (Demiralp et al., 2019). Rural women are known to have a high prevalence of knee OA due to the physical work required on farms and reduced access to health centers for management of pain and disease progression (Wang et al., 2018). Not only do rural women have less opportunity to stop work or find substitute help when faced with chronic disease, but they are commonly known to be deprived of mental health services, cultural support for health maintenance, and lack of finances for medical treatment (Thorndyke, 2005). Current occupation and number of children did not have a significant relationship with social support, whereas number of children did not have a significant relationship with emotional Well-being.

This study also finds that women who faced higher pain severity and greater financial costs have less social support and less emotional Well-being. Managing pain severity requires a lot of help from family, not just for massaging, rubbing ointment, and help in movement, such as getting up from bed and climbing stairs, but also for building self-confidence and encouraging physical activity (Hasanpour-Dehkordi et al., 2021). In turn, family caregivers have indicated that they are unable to provide constant support to patients and other professional help is needed to manage pain severity, such as from a trained masseur, an acupuncturist, visits to a steam sauna, and surgical interventions (Hsu et al., 2015). Other research confirms that women in Pakistan do not gain support from family and friends for medical costs and that they have less money of their own due to the majority being unemployed or informal workers and thus being bereft of income or pension (Rizvi Jafree, 2023). In addition, women who have inheritance or gold in Pakistan are less likely to seek support from family to liquidate these assets for medical costs, as family prefers to inherit these upon the woman's death (Zulfiqar, 2022).

Our study confirms that when there is lower emotional Well-being, women have less social support. Though research has proved that when social support is high, emotional Well-being is also greater (De Maria et al., 2020), our study contributes to the evidence that positivity invites social support, with family showing more care and attention to patients who see their situation in a favorable light, do not seem too distressed, and who appear to be coping well (Dunkel-Schetter et al., 1987). Furthermore, our study suggests that women with lower spiritual Well-being have lower emotional Well-being, implying

that interventions for spiritual and religious Well-being in women knee OA patients would be beneficial (Ahmad & Jafree, 2023; Tirgari et al., 2022).

Our study is the first to show that younger women with knee OA patients in the country are suffering from lower Well-being compared to their older counterparts. Areas of comparatively lower Well-being include: lower emotional Well-being (greater worry), lower spiritual Well-being (greater helplessness), greater burden of financial costs (for travel and consultancy), and less social support (emotional support and assistance from family and friends). However, older women with knee OA patients face greater challenges related to pain while walking, climbing stairs, and sleeping. Scholarship suggests that younger knee OA women patients may need targeted social interventions, different from older women, such as early non-surgical lifestyle changes, weight management goals related to diet and physical exercise, and modification of occupational tasks, along with more assistance for managing younger children (Ackerman et al., 2017).

Limitations

There are certain limitations to this study, such as data collection from a single public sector tertiary hospital and use of a perception-based survey. It may be that women with knee OA patients from other provinces of the country have different realities. We also did not ask patients about comorbidities, satisfaction with healthcare providers, and detailed social circumstances such as living in a joint family versus a nuclear family, which may have implications for social support and emotional Well-being. Though the original questionnaire was longer, the screening by the hospital committee requested us to reduce our questionnaire, so less time and space was taken at the busy tertiary sector hospital. We recommend that patient satisfaction surveys incorporating measurement of socio-psychological factors are made part of public hospital quality management in Pakistan, facilitated by university researchers.

Conclusion

Our study is the first to investigate the socio-demographic characteristics and determinants of lower social support and emotional Well-being in poor women knee OA patients of the country, seeking free treatment from a public sector tertiary health center. More than half of knee OA women patients in our sample are younger than 45 years old, which contradicts the common assumption that the majority of patients are from the older demographic. The demographic-specific findings highlight that whereas younger women need more support for managing dependents, household duties, and early lifestyle modifications, both age groups need more interventions for health management and to improve self-efficacy and spiritual coping. Overall, our findings reveal that greater pain severity, higher out-of-pocket expenses, and lower spiritual Well-being are associated

with poorer emotional Well-being and reduced social support. This illustrates that the burden of knee OA in women extends far beyond physical symptoms. In a patriarchal and conservative developing region like Pakistan, where women have limited physical mobility, financial autonomy, depend on family members for health decisions, and receive little psychosocial support for health-seeking, disease progression and low quality of life are major concerns. This study highlights important gaps in the way knee OA is currently managed within Pakistan's public tertiary health system. Hospital services remain bereft of emotional and social care for women, and ignore the support they may need to address financial and access challenges. This is even more of a concern given the high number of younger women affected by knee OA, who are of reproductive age and carry a higher burden of pregnancy, childcare, home management, and care for other dependents such as the aging and special needs members of the family. We argue for a holistic model of care for women with knee OA patients, which integrate social workers, mental health professionals, physiotherapists, and community health workers alongside orthopedic services. Such an approach would strengthen both clinical and community care, support early diagnosis and treatment, and also improves patient education and self-management, while facilitating family and social support.

Addressing knee OA and chronic disease burdens for women in Pakistan and other developing regions must become a broader social welfare or social protection priority. Financial protection must be improved, including subsidized rehabilitation services, mental health support, transport assistance, and expanded health insurance for women without out-of-pocket health expenses. Additionally, awareness programs must start challenging the misconception that knee OA is an inevitable consequence of ageing and encourage earlier diagnosis and lifestyle modification, with attention to hidden women population groups in remote, rural, and urban slum areas. Educational interventions within families and communities are also needed to improve social support and the ability to adopt some positive coping strategies in patients, which are linked to support from family and friends, for example, help-seeking and sharing emotions.

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