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ASSOCIATION BETWEEN SELF-CARE ABILITY AND QUALITY OF LIFE AMONG ELDERLY WOMEN WITH OSTEOPOROSIS, PESHAWAR

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Abstract

Background: *Osteoporosis is a chronic, progressive skeletal condition characterized by a decrease in bone mass and structural deterioration, leading to increased fracture risk. Often dubbed the "silent disease," osteoporosis primarily affects elderly individuals, especially postmenopausal women, due to hormonal shifts that accelerate bone loss.*

Objective: *To determine the correlation between self-care capabilities and quality of life in older women with osteoporosis in Peshawar.*

Materials and Method: This *six-month cross-sectional correlational study was conducted at Khyber Teaching Hospital, Peshawar, using random sampling. It focused on postmenopausal women aged 60 or above, diagnosed with osteoporosis. Women with mental retardation or comorbidities affecting functional ability were excluded to ensure the study's focus on osteoporosis-related factors.*

Result: *This study analysed the relationship between self-care ability and quality of life among 253 postmenopausal women with osteoporosis. Results showed a weak, non-significant correlation ($r = 0.012$, $p = 0.853$). Most participants were aged 65–69, married, uneducated, and housewives. Findings highlight the demographic profile and limited professional engagement, with no significant link between self-care and quality of life.*

Conclusion: *This study highlights the vital role of self-care and health literacy in improving the quality of life among older women with osteoporosis in Peshawar. It calls for targeted health education, early diagnosis, and holistic care approaches to empower women, reduce risks, and enhance well-being in underserved communities facing limited healthcare access..*

INTRODUCTION

Osteoporosis is a chronic, progressive skeletal condition characterized by a decrease in bone mass and structural deterioration, leading to increased fracture risk. Often dubbed the "silent disease,"

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osteoporosis primarily affects elderly individuals, especially postmenopausal women, due to hormonal shifts that accelerate bone loss [1]. The risk is further exacerbated by unhealthy lifestyle factors such as smoking, alcohol consumption, physical inactivity, and inadequate intake of calcium and vitamin D [2].

Self-care behaviors play a pivotal role in the prevention and management of osteoporosis. However, elderly individuals often find it challenging to maintain consistent health routines. Studies indicate that age, gender, educational level, and especially health literacy significantly influence one's ability to engage in self-care practices [3]. Health literacy, defined as the capacity to obtain and use health information effectively, is directly associated with better decision-making, regular health checkups, and adherence to preventive measures [4,5].

In Pakistan, the prevalence of osteoporosis is not well-documented, but existing studies suggest alarming trends. A local survey among 200 elderly women revealed that nearly 60% had diminished self-care abilities due to osteoporosis [6]. In Peshawar, where healthcare access can be limited, individuals face additional challenges, including fractures that result in chronic pain, disability, or even mortality. These injuries often lead to hospital admissions and prolonged care, placing emotional and financial stress on families [7]. Beyond physical health, psychological impacts such as anxiety, depression, and fear of falling are prevalent, particularly among women [8].

Population aging in cities like Peshawar increases the burden of osteoporosis. As women age, their vulnerability to fractures rises, which in turn diminishes their health-related quality of life (HRQoL). Factors such as autonomy, self-direction, and responsibility define the broader concept of self-care, encompassing proactive efforts like seeking medical advice and making informed lifestyle changes [9]. Health literacy influences all these domains, enabling individuals to assess symptoms, understand treatment options, and prevent further deterioration [10].

Fractures, especially vertebral and hip fractures, are common and debilitating. According to the National Osteoporosis Risk Assessment, osteopenia doubles fracture risk, while osteoporosis increases it fourfold [11]. Such injuries severely impact mobility, independence, and overall function. In fact, about 25% of hip fracture patients die within the first year, and many never regain pre-fracture capabilities [12].

While pharmacological treatments—such as bisphosphonates and hormone therapies—are available, non-pharmacologic interventions like weight-bearing exercise, smoking cessation, and calcium/vitamin D supplementation are equally essential [13,14]. Unfortunately, studies show that pain from fractures and back issues can further reduce balance, mobility, and functional capacity, particularly in older women with poor HRQoL [15].

The inconspicuous character of osteoporosis, the problems created by fractures, and the overall impact on quality of life underscore the need of treating this illness. By implementing the suggested strategies and continuing to gather data on the specific needs and challenges of elderly women with osteoporosis in Peshawar, it is plausible to improve their well-being, reduce the burden on healthcare resources, and contribute to healthier and more fulfilling lives for this population.

METHODOLOGY

Study Design:

The research design selected for this study is a cross-sectional correlational approach.

Study Duration:

The research took six months in which all the phases, namely planning, participant recruitment, data collection and analysis as well as reporting of findings will be carried out.

Study Setting:

The research was carried out at the healthcare facilities of Khyber Teaching Hospital in Peshawar as it has a sturdy medical infrastructure, making it an appropriate choice for the study.

Sampling Technique:

The participants were selected using the Random Sampling method, which guarantees an equal likelihood of being chosen for every member in a population.

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Inclusion Criteria:

The focus is on women who are 60 years old or older, specifically postmenopausal women who have a higher risk of developing osteoporosis.

Participants must have been diagnosed with osteoporosis by a physician or doctor who expressed concern: This requirement guarantees that the medical condition being studied is present.

Exclusion Criteria:

participants who are mentally retarded and those who have comorbidities that might significantly affect their functional ability.

Data Collection:

Data were collected using a structured questionnaire, the OSCS-13, developed based on Orem's Theory of Self-Care. This tool includes 13 questions assessing self-care ability in managing osteoporosis and has demonstrated validity (CMIN/DF = 1.70, RMR = .03, RMSEA = .06, CFI = .97, TNI = .96, IFI = .97). Its reliability is supported by Cronbach's alpha (.65–.92) and test-retest scores (.65–.80). Additionally, the WHOQOL-BREF scale was used to measure quality of life, comprising 26 items with high internal consistency (α = .91) and significant convergent validity (α < 0.01). Both tools utilized a Likert scale for responses.

Data Analysis:

Data analysis conducted using the statistical software SPSS version 22.0. This software offers a wide range of statistical tools that are suitable for both descriptive and inferential analysis.

ANALYSIS AND RESULTS

Findings of the survey:

Correlations:

		Self-Care ability.	Quality of life.
Self-Care ability of the participants	Pearson Correlation	1	.012
	Sig. (2-tailed)		.853
	N	253	253
Quality of life of the participants	Pearson Correlation	.012	1
	Sig. (2-tailed)	.853	
	N	253	253

Correlation Coefficient:

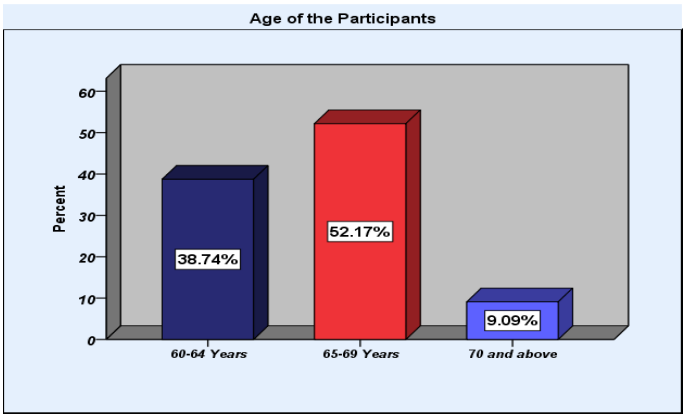
The correlation coefficient between Self-Care ability and Quality of life is 0.012.

Significance Level (p-value):

The p-value associated with this correlation is 0.853.

Frequencies of responses:

Age:



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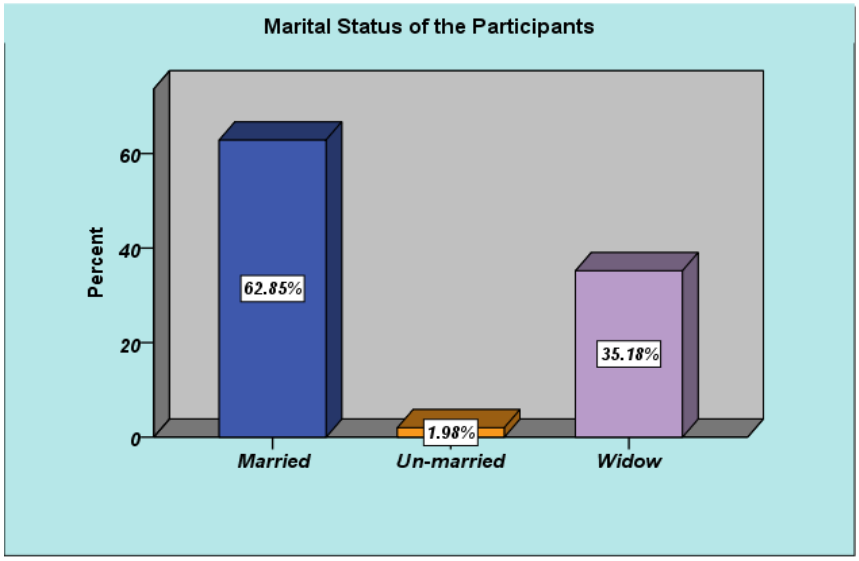
Based on information:

- 97 participants (38.3%) fall in the age group of 60-64 years.
- 133 participants (52.6%) fall in the age group of 65-69 years.
- 23 participants (9.1%) fall in the age group of 70 and above.

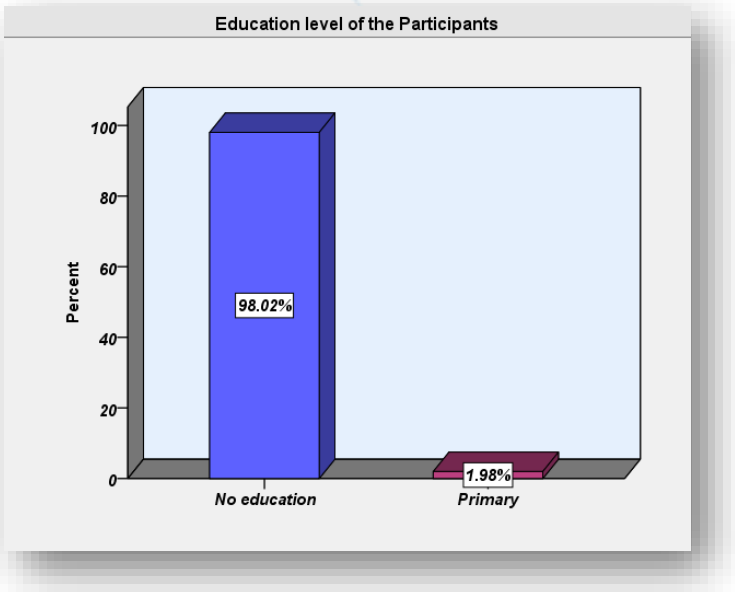
Marital Status:



Among the respondents:

- 159 participants (62.8%) are married.
- 5 participants (2%) are un-married.
- 89 participants (35.2%) are widows.

Education:



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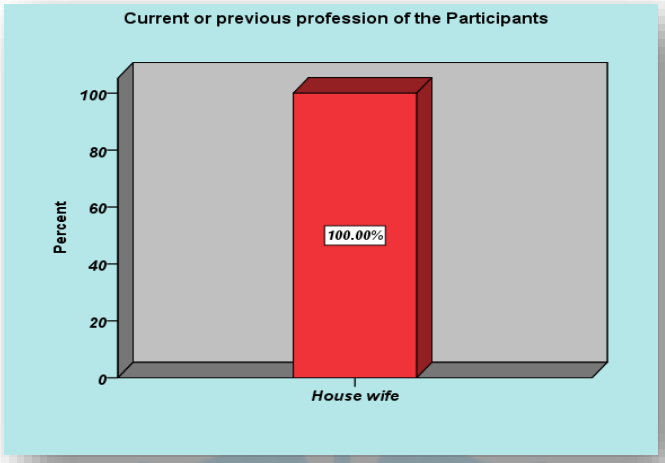
Out of 253 participants:

- 248 participants (98%) have no education.
- 5 participants (2%) have primary level of education

Profession:



It appears that in this sample of 253 participants, none of them have a job profession, and all (100%) are identified as housewives.

Discussion

The findings of our study is in the contrast with several previous studies. For instance, a study conducted in Norway found that lower levels of health-related quality of life (HRQoL) was associated with lower levels of physical function among women.[16] Similarly, research conducted in India emphasized that older adults with chronic conditions, similar to osteoporosis, tend to experience impaired quality of life, highlighting the impact of chronic health problems on overall well-being.[17]

In contrast to our findings, the osteoporosis center in FASA, Iran, reported lower levels of quality of life among patients with osteoporosis, aligning with the impression that osteoporosis, as a chronic condition, may significantly influence various aspects of daily life and well-being.[18] However, Study conducted in Brazil reported weak correlation between self-care and some domains of quality of life in patient with chronic kidney disease.[19]

Moreover, the findings of our study align more closely with research conducted in Poland, where weak associations between self-care behaviors and perceived quality of life were observed in elderly populations with multiple chronic diseases. This suggests that other mediating factors—such as social support, economic status, or cultural beliefs—may play a more dominant role in influencing quality of life than self-care alone.[20]

One plausible explanation for the weak correlation observed in our study could be the overwhelming majority of uneducated participants (98%), which might have directly impacted their ability to engage in or even recognize self-care behaviors, as suggested in a study from Turkey that highlighted education as a key determinant of health literacy and self-care engagement.[21] Furthermore, our study population consisted entirely of housewives, potentially indicating limited exposure to health-promoting resources or social networks that support health education, consistent with findings from a qualitative study conducted in rural Bangladesh.[22]

Additionally, a study conducted in Saudi Arabia showed that older women with higher self-care confidence reported better physical and psychological well-being, but only when combined with high family involvement and adequate access to

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healthcare services. [23] In the context of Peshawar, where healthcare access remains limited for many women, especially those from lower socioeconomic backgrounds, such supportive factors may be lacking, thereby muting the benefits of self-care on quality of life.

Psychosocial barriers such as fear of falling, social isolation, and depression have also been identified as influential determinants in shaping the lived experiences of elderly women with osteoporosis. For instance, a study in Korea emphasized that even when self-care practices are present, underlying depression or anxiety can offset their benefits on quality of life. [24]The present findings reflect this complexity, as our participants may engage in minimal self-care routines but continue to report poor overall well-being due to unaddressed psychological factors.

Furthermore, another study in Iran demonstrated that tailored educational interventions significantly improved self-care knowledge and certain dimensions of quality of life among osteoporotic women, but only after structured, long-term support was implemented. [25] This again highlights the role of health system support and long-term engagement, which might be currently lacking in the Peshawar context, explaining the non-significant relationship in our study.

In a cross-sectional study in China, researchers found that the physical domain of quality of life was not significantly correlated with self-care behaviors among elderly individuals unless the self-care routines were intensive and sustained. [26] This aligns with our observation, suggesting that self-care might not be impactful unless practiced consistently and with appropriate support, a scenario unlikely in communities with high illiteracy and limited health promotion initiatives.

Moreover, a randomized control trial in Egypt found that even when elderly women were taught self-care practices, those with lower initial self-efficacy and social support reported minimal improvement in their quality of life, suggesting that personal motivation and environmental reinforcement are critical. [27] These psychosocial dynamics could explain why our findings diverged from more intervention-heavy studies in different contexts.

A scoping review in sub-Saharan Africa identified that in patriarchal and conservative societies, older women often depend on family members for healthcare decision-making, further inhibiting their engagement in autonomous self-care behaviors. [28] This resonates with cultural norms in Peshawar, where women may prioritize family obligations over personal health needs, thereby limiting the impact of individual self-care on perceived quality of life.

Finally, a 2023 study from Indonesia argued that to truly assess the impact of self-care on quality of life in elderly populations, researchers must factor in not only individual capabilities but also broader determinants such as healthcare infrastructure, cultural beliefs, and social networks. [29] This supports our interpretation that the weak correlation in this study may not reflect the inefficacy of self-care, but rather the broader social, economic, and healthcare challenges that overshadow its potential benefits.

Therefore, this study emphasizes the need for contextually appropriate health promotion strategies, especially those tailored for underserved populations like the elderly women of Peshawar. Future programs should incorporate community-based health education, culturally sensitive interventions, and family-inclusive strategies to truly enhance self-care practices and improve quality of life. [30]

Conclusion

To conclude, this study explores the complex relationship between self-care competency, health literacy, and quality of life among older women with osteoporosis in Peshawar. It emphasizes the urgent need for health education, especially for vulnerable populations, to empower individuals in managing their health. Osteoporosis, a condition marked by a gradual decline in bone strength, affects the entire body and poses a significant threat to the quality of life in elderly women. In regions like Peshawar, where access to high-quality healthcare is limited, understanding how self-care practices and health literacy influence outcomes is essential.

The findings shed light on the critical connections between knowledge, behavior, and well-being. Older women who possess greater health literacy and self-care competence tend to engage in preventive behaviors, seek timely care, and maintain better lifestyle quality. Early diagnosis and treatment are

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pivotal in minimizing the risks associated with osteoporosis, and this can only be achieved through awareness and education.

The study calls for targeted interventions and health promotion strategies focused on improving health literacy and encouraging active participation in self-care. These efforts can transform healthcare delivery in Peshawar, ensuring that older women receive the support they need. It also stresses the importance of addressing emotional and psychological aspects alongside physical health, offering a holistic approach to care.

Ultimately, this research forms a foundation for future healthcare policies and programs aimed at enhancing the lives of women with osteoporosis. A comprehensive, tailored strategy is necessary to meet their unique needs and improve long-term outcomes.

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