

Correlation of Health-Related Quality of Life in Employed and Unemployed Middle Aged Women with Musculo-Skeletal Disorders.

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ABSTRACT

Background: The World Health Organization Quality of Life Group defines quality of life as individuals' perceptions of their position in life in the context of culture and value systems in which they live and in relation to their goals, expectations, standards, and concerns. Musculoskeletal disorders (MSDs) affect a large proportion of the working population and negatively influence quality of life, resulting in increased healthcare costs, lost workdays, and higher social insurance expenditures. Employment status is considered one of the important factors affecting women's quality of life.

Objective: To determine the correlation between musculoskeletal disorders and health-related quality of life among employed and unemployed middle-aged women.

Methodology: A cross-sectional survey study was conducted among 150 middle-aged women with musculoskeletal disorders selected using convenience sampling. Women aged 40–60 years with musculoskeletal disorders who were willing to participate were included in the study. Subjects with pregnancy, previous traumatic injury, mental illness, and neurological disorders were excluded. Participants were divided into two groups: employed and unemployed women. Data were collected using the SF-36 Questionnaire and Cornell University Musculoskeletal Discomfort Questionnaire (CMDQ).

Results: A statistically significant moderate negative correlation was observed between CMDQ score and Physical Component Score (PCS) among employed middle-aged women (Spearman's correlation: $r = -0.620$, $p < 0.01$) and between CMDQ score and Mental Component Score (MCS) ($r = -0.463$, $p = 0.002$). Among unemployed middle-aged women, a statistically significant moderate negative correlation was found between CMDQ score and PCS ($r = -0.487$, $p < 0.01$) and between CMDQ score and MCS ($r = -0.463$, $p < 0.01$).

Conclusion: There was a significant negative correlation between musculoskeletal disorders and health-related quality of life among employed and unemployed middle-aged women.

Keywords: Health-related quality of life, Musculoskeletal disorders, Employed women, Unemployed women, CMDQ, SF-36

INTRODUCTION

Health-related quality of life (HR-QOL) is defined as an individual's satisfaction or happiness with domains of life as far as they affect or are affected by health.¹ Employment is considered one of the important factors influencing women's quality of life. A woman's level of education and employment

status are positively associated with empowerment, self-esteem, financial independence, and social support.²

Domestic work and occupational activities may increase the risk of musculoskeletal disorders (MSDs). Repetitive work, physical strain, and multiple responsibilities may negatively affect women's physical and psychological well-being.³ Some studies suggest that multiple roles may increase stress, while others report that employment enhances mental well-being.⁴

Middle age is an important period for women's health, as multiple responsibilities often reduce time for self-care, exercise, and relaxation.⁵ Previous studies have reported conflicting findings regarding whether employed or unemployed women have better health and quality of life.⁶

Therefore, the present study was conducted to determine the correlation between health-related quality of life and musculoskeletal disorders among employed and unemployed middle-aged women.

MATERIALS AND METHODOLOGY

Study Design

Cross-sectional survey study.

Study Setting

Ahmedabad city, Gujarat, India.

Study Duration

Six months.

Sampling Method

Convenience sampling.

Sample Size

A total of 150 women were included in the study:

- Employed women: 75
- Unemployed women: 75

Inclusion Criteria

- Women aged 40–60 years
- History of musculoskeletal disorders
- Willingness to participate

Exclusion Criteria

- History of recent trauma
- Pregnancy
- Mental illness

Outcome Measures

- Short Form Health Survey (SF-36v1)
- Cornell University Musculoskeletal Discomfort Questionnaire (CMDQ)

Procedure

A cross-sectional survey was conducted after obtaining approval from the Institutional Review Board. A total of 150 women fulfilling the inclusion and exclusion criteria were recruited from Ahmedabad city. Written informed consent was obtained from all participants before data collection.

Participants completed self-administered questionnaires assessing health-related quality of life and musculoskeletal disorders. Demographic information including age, height, weight, occupation, and work experience was recorded.

Health-related quality of life was assessed using the SF-36v1 questionnaire, while musculoskeletal discomfort was evaluated using the Cornell University Musculoskeletal Discomfort Questionnaire (CMDQ). The average time required to complete the questionnaires was 15–20 minutes.

Statistical Analysis

Data were analyzed using SPSS version 16.0. Since the data were not normally distributed, non-parametric tests were used. Spearman’s correlation coefficient was applied to determine the correlation between HR-QOL and MSDs. Statistical significance was set at $p < 0.05$.

RESULTS

A total of 150 middle-aged women with musculoskeletal disorders participated in the study, including 75 employed women and 75 unemployed women.

Demographic Characteristics

The mean age of employed women was 50.19 ± 5.42 years, while the mean age of unemployed women was 49.14 ± 5.61 years. Mean BMI was higher among unemployed women (27.53 ± 3.73 kg/m²) compared to employed women (25.08 ± 4.06 kg/m²).

Table 1: Demographic Characteristics of Participants

Variable	Employed Women (Mean ± SD)	Unemployed Women (Mean ± SD)
Age (years)	50.19 ± 5.42	49.14 ± 5.61
Height (cm)	159.39 ± 5.88	157.64 ± 7.16
Weight (kg)	63.73 ± 10.44	68.08 ± 8.71
BMI (kg/m ²)	25.08 ± 4.06	27.53 ± 3.73

Prevalence of Musculoskeletal Disorders

Lower back pain and knee pain were the most prevalent musculoskeletal complaints among participants. In employed women, right knee pain (58%) and lower back pain (56%) were most common, whereas unemployed women demonstrated higher prevalence of lower back pain (77%) and bilateral knee pain (69%).

Table 2: Region-wise Prevalence of Musculoskeletal Disorders

Body Region	Employed Women	Unemployed Women
Neck	37%	33%
Shoulder	42%	42%
Upper Back	38%	18%
Lower Back	56%	77%
Knee	58%	69%
Lower Leg	30%	38%

CMDQ, PCS, and MCS Scores

Table 3: Mean CMDQ, PCS, and MCS Scores

Variable	Employed Women (Mean ± SD)	Unemployed Women (Mean ± SD)
CMDQ	196.41 ± 252.92	202.87 ± 201.69

PCS	39.69 ± 9.73	36.81 ± 9.69
MCS	48.89 ± 10.89	44.06 ± 11.67

Correlation Between CMDQ and HR-QOL

A statistically significant moderate negative correlation was observed between CMDQ score and Physical Component Score (PCS) among employed women ($r = -0.620, p < 0.01$) and unemployed women ($r = -0.487, p < 0.01$).

Similarly, Mental Component Score (MCS) showed statistically significant negative correlation with CMDQ score among employed women ($r = -0.463, p = 0.002$) and unemployed women ($r = -0.463, p < 0.01$).

Table 4: Correlation Between CMDQ and HR-QOL Scores

Variables	Correlation Coefficient (r)	p-value
PCS vs CMDQ (Employed)	-0.620	<0.01
MCS vs CMDQ (Employed)	-0.463	0.002
PCS vs CMDQ (Unemployed)	-0.487	<0.01
MCS vs CMDQ (Unemployed)	-0.463	<0.01

DISCUSSION

The present study was conducted to determine the correlation between health-related quality of life (HR-QOL) and musculoskeletal disorders (MSDs) among employed and unemployed middle-aged women.

In the present study, employed women demonstrated higher Physical Component Score (PCS) and Mental Component Score (MCS) compared to unemployed women. Although there was no statistically significant difference in PCS between the two groups, MCS showed significant difference, indicating better mental health status among employed women. Similar findings were reported by Saravi FK et al., who observed better HR-QOL among employed women, particularly in emotional and mental health domains.⁷

A statistically significant moderate negative correlation was observed between CMDQ score and both PCS and MCS scores among employed and unemployed women. Increased musculoskeletal discomfort was associated with poorer physical and mental health-related quality of life. These findings are consistent with previous studies reporting that chronic musculoskeletal pain negatively affects physical functioning, emotional well-being, and daily activities.

Lower back pain and knee pain were the most prevalent musculoskeletal complaints among participants. Employed women commonly reported knee pain, whereas unemployed women demonstrated higher prevalence of lower back pain. Previous studies by Beyen TK et al.⁸ and Al-Arfaj et al.⁹ also reported high prevalence of back pain and musculoskeletal disorders among female workers and housewives.

Women are more vulnerable to musculoskeletal disorders due to multiple occupational and domestic responsibilities, repetitive activities, prolonged postures, and limited time for rest and recovery.^{10,11} Psychological stress, reduced physical activity, hormonal changes, and aging-related factors may further contribute to MSDs among middle-aged women.¹²

Employment may positively influence mental well-being through improved self-esteem, financial independence, and wider social support. Azar IAS et al. reported that women with better quality of life had higher self-esteem and self-efficacy.¹³ However, combined occupational and household workload may also increase physical strain among employed women.¹⁴

The findings of the present study suggest that musculoskeletal disorders significantly affect health-related quality of life among middle-aged women and highlight the importance of early identification, ergonomic awareness, preventive strategies, and physiotherapy interventions to improve quality of life.

LIMITATIONS

Self-administered questionnaires were used in this study, so there may be chances of response bias.

Objective clinical assessment of musculoskeletal disorders and health-related quality of life was not performed.

Confounding factors such as physical activity level, family status, number of children, menopausal status, and psychosocial factors were not considered.

The sample size was small, so the results may not represent the entire population.

CONCLUSION

There was a negative correlation between health-related quality of life and musculoskeletal disorders among employed and unemployed middle-aged women.

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