

Effect of Osteoporosis on Health Related Quality of Life in Postmenopausal Women

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ABSTRACT

Objective: To determine the effect of osteoporosis on health related quality of life in postmenopausal females. **Methodology:** It was an analytical cross-sectional study that was completed in 6 months from January 2016 to June 2016. A sample of 137 postmenopausal osteoporotic women, who were referred for DEXA scan in Mayo Hospital, was selected through convenient sampling technique. Bone mineral density (BMD) was taken through T-score of DEXA. A pre-tested; standard questionnaire Qualeffo-41 (Quality of life questionnaires) was used to assess the health-related quality of life in these postmenopausal females. Data was analyzed through SPSS v20. The Pearson correlation coefficient "r" was calculated to determine the linear correlation between osteoporosis and health related quality of life. **Results:** Mean T score of bone mineral density of 137 participants was -3.23 ± 0.45 and mean Qualeffo-41 score was 64.33 ± 6.00 . Value of Pearson correlation coefficient (r) was 0.757 suggesting strong linear positive correlation between osteoporosis and quality of life. **Conclusion:** Quality of life of post-menopausal is greatly influenced by osteoporosis as strong linear positive correlation was found between osteoporosis and quality of life.

Key words: Osteoporosis, Health-related, Quality of life, Postmenopausal women, DEXA scans, QUALEFFO-41

INTRODUCTION

Osteoporosis is a common condition characterized by the decreased skeletal bone mass⁽¹⁾. It is an asymptomatic musculoskeletal system disease which causes the reduction in the level of calcium and affects the bone structure. It causes painful fractures mostly in the vertebrae, forearms and hips⁽²⁾. Osteoporosis is affecting almost 200 million postmenopausal women worldwide. It causes a major threat to the public health⁽³⁾.

In Pakistan, osteoporosis is affecting a large number of populations aged 75-84 years with the prevalence of 75% and aged 45-54 years with the prevalence of 55%. In postmenopausal women, there is a decrease in the estrogen level which affects the multiple aspects of the life⁽⁴⁾.

Postmenopausal osteoporosis results from loss of the bone mass, decrease in the calcium level, reduction in the estrogen level with associated symptoms like pain, depression, deformity and loss of physical function⁽⁵⁾. Reduced activities of life, low self-confidence, and low self-esteem are also some of the manifestation of osteoporosis⁽⁶⁾. Osteoporotic patients having bone fractures show a depletion in the HRQOL because of the pain, disability and decreased mobility⁽⁷⁾.

Health related quality of life is a subdivision of the worldwide quality of life. Regular physical activity can help to reduce the level of pain and improve the postural stability⁽⁵⁾. The major health care goal for the post-menopausal osteoporotic women is to improve their mobility and decrease functional loss⁽⁸⁾.

OBJECTIVES

To determine the effects of osteoporosis on health related characteristics of life in postmenopausal females.

METHODOLOGY

It was an analytical cross-sectional study that was completed in 6 months from January 2016 to June 2016. A sample of 137 postmenopausal osteoporotic women, who were referred for DEXA scan in Mayo Hospital, was selected through convenient sampling technique. Bone mineral density (BMD) was taken through T score of DEXA. Qualeffo-41 (Quality of life questionnaires) questionnaire was used to assess the health related quality of life in postmenopausal osteoporotic women. This scale consists of 41 questions that investigate the health in several domains like Pain, ADLs, social activities and general health⁽⁹⁾. The reliability of the questionnaire ranges between 0.70 and 0.96⁽¹⁰⁾. The total score is calculated by summing all answers of questions 1-41. The raw total score ranges from 41 to 205 and this was transformed to scores from 0 to 100. Data was analyzed through SPSS v20. The Pearson correlation coefficient "r" was calculated to determine the linear correlation between osteoporosis and health related quality of life.

RESULTS

Table-1 Socio-demographic Profile of the participants:

Socio-demographic Profile. n-137		
Age (Mean \pm SD)		54 \pm 5.02
Hypertension (HTN)	Yes	54
	No	83
Diabetes (DM)	Yes	84
	No	53

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Table-1 is showing demographic data of participants. A total of 137 participants were included in the study. Mean age of participants was 54 ± 5.02 . Out of 137 post-menopausal women 54 had hypertension and 83 were without hypertension whereas 84 were having diabetes mellitus and 53 were without diabetes

Table-2 Quality of life in various aspects of life:

Quality of life in various aspects of life: (QUALEFFO-41 score)			
Variable	n=137		
	Good	Satisfactory	Poor
Activities of Daily Living	4(3%)	31(23%)	102(74%)
Social function	6(4%)	54(40%)	77(56%)
Mobility	11(8%)	28(20%)	98(72%)
Leisure, Social Activities	4(3%)	35(26%)	98(71%)
General Health Perception	10(7%)	41(30%)	86(63%)
Mental function	18(13%)	74(54%)	45(33%)

Table-2 is summarizing quality of life in different aspects of life. Out of 137 participants, 4 were having good quality of life in activities of daily living, 31 had satisfactory and 102 had poor quality of life in activities of daily living. Majority of participants were found to have poor quality of life in this aspect. Similar trends were seen in social function, mobility, social activities, general health perception and mental status

Table-3 Relation between osteoporosis and quality of life:

Relation between osteoporosis and quality of life			
Variables	Mean	Std. Deviation	Pearson correlation coefficient(r)
T Score (osteoporosis)	-3.23	0.45	0.76
QUALEFFO-41 Score (Quality of Life)	64.33	6	

Table-3 is giving an overview of correlation between osteoporosis and quality of life. Mean T score of BMD of 137 Participants was -3.23 ± 0.45 and mean QUALEFFO-41 score was 64.33 ± 6.00 . Value of Pearson correlation coefficient(r) was 0.756 showing strong linear positive correlation of osteoporosis and quality of life.

DISCUSSION

The objective of this study was to determine the effect of osteoporosis on health related characteristics of life in postmenopausal females. The study concluded that osteoporosis significantly affects the quality of life. These findings are in accordance with the findings of the study which stated that in Japan, United States and Europe annually 75 million people are affected with osteoporosis and almost 34 million people are at risk of developing this

disease and this increased incidence of osteoporosis is affecting quality of life of people in these countries⁽¹¹⁾.

In this study, DEXA scan was used to diagnose and grade the osteoporosis. Multiple scanning techniques can be used for osteoporosis for diagnosis, but DEXA scan was considered as gold standard⁽¹²⁾.

The Qualeffo-41 scale was used in this study to determine the quality of life. This scale collects information on different aspects of life i.e. activities of daily living, social function, mobility, social activities and mental health to determine the quality of life. Previous literature showed that Qualeffo-41 is a reliable tool that can be used to determine the quality of life⁽¹³⁾.

CONCLUSION

Quality of life of post-menopausal women, is greatly influenced by osteoporosis, as strong linear positive correlation was found between osteoporosis and quality of life.

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