



Original Research

Healthy Safety Measurement for Bones among Women with Osteoporosis in Al-Hilla City, Iraq

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Abstract:

Osteoporosis is a major public health problem affecting one in three women over the age of fifty. Decreased bone density associated with osteoporosis makes bones brittle, and spinal fractures affect one in every three women, wrist and hip fractures one in every six. This leads to rapid deterioration in health and often death. Objectives: To assess Healthy safety measurement, To determine the relationship between the socio demographic characteristics, reproductive data and safety measurement among women with osteoporosis.

Methodology:

A descriptive study design was conducted on Non-Probability (purposive sample) of (90) women who have suffering from osteoporosis attend to (DEXA Dual-Energy X-ray Absorptiometry) unit in Merjan Teaching Hospital in Hilla City /Babylon governorate. A questionnaire has been used as a tool of data collection and consists of three parts for the period of 9th of February to April 20th 2014.

Results:

The results of the study reveal that (36.7%) of women aged (50 - 59) years with Mean $\pm$ SD (52.46 $\pm$ 11.70), (44.4%) were not read and write; (60%) their resident in urban, 38.9% always do visual examination, 80% Safety of Stairs. Assessment of their safety measurement of safety bone were pass.

Recommendations:

Implement educational programs as early as in adolescence to obtain peak bone mass, and encourage the women who has any risk factors or at age of 50 years old to do DEXA examination.

Key words: Healthy, safety measurement, Bone, osteoporosis, women.

Introduction:

One of the critical health hazards is osteoporosis, with over 200 million affected people worldwide. It has more prevalence in postmenopausal women with around 25 to 30 percent of its prevalence in the United States and equally in Europe. Besides the actual prevalence, there has been a tremendous impact due to increased life expectancy and a more aged population (Hilgsmann M,2019). A previous history of fracture is, by itself, a very significant risk factor for future fractures. Those already sustained a low trauma fracture in the past have over 80 percent probability for a new one. Similarly, those who had a history of vertebral fracture have over two-fold increased risk of hip fracture and roughly 1.5 fold distal forearm fracture risk(Afkhami-Ardekani O,2019) . The consequences of osteoporosis are more evident in postmenopausal populations; loss of bone density begins in the peri-menopausal years, On the other hand, poverty is one of the biggest public health Problems today (Lessard & Raynault,2009). It was estimated that the number of patients worldwide with osteoporotic hip fractures is more than 200 million . It was reported that in both Europe and the United States, 30% women are osteoporotic, and it was estimated that 40% post-menopausal women and 30% men will experience an osteoporotic fracture in the rest of their lives (Watts, et al;2010).

Osteoporosis is also an important health issue in Turkey, because the number of older people is increasing. The incidence rate for hip fracture increases exponentially with age in all countries as well as in Turkey,. It was estimated that around the age of 50 years, the probability of having a hip fracture in the remaining lifetime was 14.6% in women (Tuzun,2012). Some risk factors for osteoporosis include female sex, Caucasian or Asiatic race, advancing age, family history of osteoporosis or fragility fractures, sedentary life style, menopause before age 45 years, prolonged lactation, diet low in calcium and vitamin D (Handa et al,2008).

In simpler terms, osteoporosis is a condition in which the bones become weak and can break from a minor fall or, in serious cases, from a simple action such as a sneeze. It is a silent disease people cannot feel their bones getting weaker. They may not know that they have osteoporosis until they break a bone. It is a major public health concern that places an enormous medical and personal burden on individuals and their families, and on the health care system. Guidelines emphasize the importance of using bone mineral density (BMD) testing and risk factor assessment to identify patients at high risk for fracture before the first fracture occurs (US DHHS,2004).

Methodology:

A descriptive study design was conducted on non-probability (purposive sample) of (90) women who have suffering from osteoporosis attend to DEXA unit in Merjan teaching hospital in AL-Hilla city/Babylon governorate . A questionnaire has been used as a tool of data collection for the period Of 9th of February to April 20th 2014 and consists of three part ; including: Socio Demographic (3)items, reproductive characteristics (4 items),(15 items)related to Healthy safety measurement among women with osteoporosis which consist of These items are rated according to three level likert scale (always ,sometimes , never)and scored (3,2,1). A questionnaire and content validity has been carried out through the (19)experts. Descriptive and inferential statistical analyses are used to analyze the data .

Table (1): Distribution of Women's Demographical Characteristics Variables (No. 90)

Demographical Variables	No. and Percents	No.	Percent	Cum. Percent
Age	< 20	2	2.2	2.2
	20 - 29	2	2.2	4.4
	30 - 39	8	8.9	13.3
	40 - 49	14	15.6	28.9
	50 - 59	33	36.7	65.6
	60 - 69	26	28.9	94.4
	70 >	5	5.6	100
	Mean $\pm$ SD	52.46 $\pm$ 11.70		
Educational level	Illiterate	40	44.4	44.4
	Read – write	3	3.3	47.8
	Primary	10	11.1	58.9
	Secondary	18	20	78.9
	Institute & College	19	21.1	100
Residency	Urban	54	60	60
	Rural+	36	40	100

(Table2): Distribution of Reproductive Information variables (No. 90)

Reproductive Variables of Women's	Groups	No.	Percent	Cum. Percent
Age at Menarche	11 - 12	53	58.9	58.9
	13 - 14	28	31.1	90
	15 - 16	9	10	100
	Total	90	100	--
Age at Menopause	< 40	4	5.6	5.6
	40 - 44	14	19.7	25.4
	45 - 49	35	49.3	74.6
	50 >	18	25.4	100
	Total	71	100	-
Gravidity	1 - 3	15	18.3	18.3
	4 - 6	23	28	46.3
	7 - 9	30	36.6	82.9

	10 - 12	10	12.2	95.1
	13 - 15	4	4.9	100
	Total	82	100	-
Parity	1 - 3	24	29.3	29.3
	4 - 6	32	39	68.3
	7 - 9	18	22	90.2
	10 - 12	8	9.8	100
	Total	82	100	-
Breast Feeding	Yes	55	67.1	67.1
	No	27	32.9	100
	Total	82	100	-

Table (3): Distribution of Healthy Safety Measurement among Women with Osteoporosis with comparison significant

Safety Measurement	Scoring Levels	N o.	%	χ^2 -test	P-value(*)	M S	SD	RS	As s.
Visual examination	Never	34	37.8	29.0	0.000 HS	2.01	0.88	67.0	P
	Sometimes	21	23.3						
	Always	35	38.9						
Avoid high heels	Never	7	7.8	14.8	0.001 HS	2.62	0.63	87.3	P
	Sometimes	20	22.2						
	Always	63	70.0						
Avoid clutter on floor	Never	17	18.9	2.2	0.335 NS	2.23	0.75	74.3	P
	Sometimes	35	38.9						
	Always	38	42.2						
Safety of Stairs	Never	18	20.0	93.6	0.000 HS	2.60	0.80	86.7	P
	Sometimes	0	0.0						
	Always	72	80.0						

Wearing safety soles	Never	6	6.7	7.1	0.028 S	2.4 6	0.6 2	82. 0	P
	Sometimes	37	41. 1						
	Always	47	52. 2						
Taking described treatment of osteoporosis	Never	14	15. 5	6.3	0.042 S	2.2 3	0.7 0	74. 3	P
	Sometimes	41	45. 6						
	Always	35	38. 9						
Do Dexa for osteoporosis	Never	0	0.0	90.0	0.000 HS	2.2 0	0.4 0	73. 3	P
	Sometimes	72	80. 0						
	Always	18	20. 0						
Need help to get up from chair	Never	47	52. 2	82.9	0.000 HS	1.8 1	0.9 1	60. 3	F
	Sometimes	13	14. 4						
	Always	30	33. 3						
Exposure to sunlight	Never	4	4.4	18.5	0.000 HS	2.3 9	0.5 7	79. 7	P
	Sometimes	47	52. 2						
	Always	39	43. 3						
Avoid sedative drugs	Never	33	36. 6	25.9	0.000 HS	2.0 1	0.8 7	67. 0	P
	Sometimes	23	25. 6						
	Always	34	37. 8						
If you're in menopausal age taking hormonal therapy	Never	71	78. 9	-	-	1.0 0	0.0 0	33. 3	F
	Sometimes	0	0.0						

	Always	0	0.0						
Arrangement of floor Mattress	Never	9	10.0	5.2	0.076 NS	2.5 1	0.6 7	83.7	P
	Sometimes	26	28.9						
	Always	55	61.1						
Adequate lighting in the home	Never	2	2.2	14.5	0.001 HS	2.6 1	0.5 3	87.0	P
	Sometimes	31	34.4						
	Always	57	63.3						
Avoid Sliding(toboggan)	Never	12	13.3	22.5	0.000 HS	2.1 7	0.6 4	72.3	P
	Sometimes	51	56.7						
	Always	27	30.0						
Safety qualifications of bathroom	Never	90	10.0	-	-	1.0 0	0.0 0	33.3	F
	Sometimes	0	0.0						
	Always	0	0.0						

(*) HS: Highly Sig. at $P < 0.01$; S: Sig. at $P < 0.05$; NS: Non Sig. at $P > 0.05$

Table (4) Association between Socio-Demographical Characteristics variables with Healthy Safety Measurement among Women with Osteoporosis with comparison significant

Relationships for Healthy Behaviors and Demographical Characteristics variables	Healthy safety measurement for Bones		
	C.C.	Sig.	C.S.
Age Groups	0.372	0.025	S
Educational level	0.072	0.976	NS
Residency	0.124	0.237	NS

Table (5): Association between Reproductive Information variables with Healthy safety measurement for Bones

Relationships for Healthy Behaviors Parts and Reproductive Information variables	Healthy safety measurement for Bones		
	C.C.	Sig.	C.S.
Age at Menarche	0.202	0.148	NS
Age at Menopause	0.220	0.306	NS
Gravidity	0.238	0.295	NS
Parity	0.183	0.419	NS
Breast Feeding	0.063	0.568	NS

(*) NS: Non Sig. at $P > 0.05$ **Discussion:**

Age: The present study has reported that the highest percentage (36.7%) of the study sample is at age group ranged (50 - 59) years old with mean age and standard deviation (52.46 ± 11.70) as shown in table (2). This finding is consistent with studies done in the North America it was estimated that 1 in 3 women over the age of 50 worldwide have osteoporosis (8). demonstrated a significant correlation between age and osteoporosis $p < 0.001$, as the age increases, osteoporotic cases increase (9). **Educational level:** The highest percentage (44.4%) of study sample was illiterate as shown in table (2). This finding is consistent with studies in Palestine- Nablus in a comparative study, stated that illiterate women were higher risk of developing osteoporosis than school educated (10). The majority of the osteoporosis among women which was represented in urban residency, and estimated (60%) of the total sample, while the rural were (40%) of them. A comparative study reported that the majority of the osteoporosis (18.2%) were from urban areas, while the rest (9.2%) were from the rural areas (11).

The results of the study shows that the highest percentage (58.9%) of women with osteoporosis their age at menarche were at (11-12) years. A study

indicates that age at menarche may have a long-term association with fracture risk, with effects lasting into the postmenopausal years (12)

Relative to age at menopause the highest percentage (49.3%) were at age of (45-49) years. The current study was in agreement with the study results in Babylon that indicates (34.3%) of osteoporosis were female at menopause (13). His found that menopause is a major risk factor for osteoporosis. The incidence of fractures increases by about 40% with menopause in developing countries (14). Regarding to pregnancies the highest percentage (36.6%) of study sample have (7-9) pregnancies, this results agree with His found that osteoporosis and osteopenia are common among postmenopausal Saudi Arabian women, the causative factors are pregnancy (15).

Regarding to parity the highest percentage (39%) having (4-6) deliveries, this results consistent with, A study stated that parity of more than 3 was shown as risk factor in both populations and it remained significant ($P < 0.05$) in osteoporotic Iranian and Indian women (16).

(67.1%) of them within breast feeding, the present study consistent with results of a study that found lactation for more than six months was associated with increased risk of osteoporosis (17)

Healthy Safety Measurment for Bone:

The study results in table (3) show that some bone healthy behaviors reported failure assessment with low mean scores and RS in (Need help to get from chair ,taking hormonal therapy in menopausal age ,and safety qualifications of bath room),with significant statistical differences in all Healthy Safety Measurment for Bone (bone health behaviors)except in avoid clutter on floor and arrangement of floor mattress. Jha & others (2010)reported in Pilot case-control investigation a significant increase in the number of cases of hip fracture with increasing age. There were significantly more women (57%) who have difficulty in getting up from a chair also appears to be an important risk factor for hip fractures (OR 14.53; 95% CI 3.86-54.23).In relation to Need Exposure to sunlight: Kazutoshi (2006) found that the main source of vitamin D is from exposure to sunlight. A study done in Japanese populations shows that elderly people with a low level of activities of daily living (ADL) are at a very high risk of vitamin D insufficiency that deficiency effect on bone metabolism, bone mass, and fractures and make them at high risk having osteoporosis. D'Souza & others(2012)found a significant risk factors among Omani women are non-exposure to sunlight at an early age due to complete the clothing covering the body (e.g. abhaya, veil, hijab). The assessment for their measurement of bone was pass all safety measurements among women to prevent fractures because weak bones are riskier for fracture and healing in elderly age difficult and avoiding motion leads to many complications perhaps death.

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