

Bones and Joints Related Health Problems Among Menopausal Women

Raut Sonali S.*, NalwadeVijaya M.**

Abstract

The present study was undertaken to collect the information on bone and joint related health problems, exercise pattern and common calcium rich source - milk consumption by using developed questionnaire. Data was statistically analyzed. Bones and joint related health problem such as knee pain followed by leg and waist pain were perceived by more number of selected menopausal women. A relatively very high per cent of premenopausal and menopausal women had problem of weight gain. It was also reported that more number of premenopausal women was having habit of exercise than that of premenopausal and postmenopausal women. Walking as an exercise was followed by maximum number of menopausal women. Habit of consumption of milk was reported by 135 menopausal women. It was noticed that 45 per cent of menopausal women had the habit of consuming milk and majority of them were found to be consuming milk once a week.

Keywords: Menopausal Women; Bone Problems; Exercise and Milk Consumption.

Introduction

Menopause is the permanent cessation of menstruation resulting from the loss of follicular activity of the ovaries (WHO, 1996) which is recognized to have occurred after 12 consecutive months of amenorrhea, for which there is no other obvious pathological or physiological cause (Goyal *et al.*, 2009; Achie *et al.*, 2011; Khokhar *et al.*, 2012; and Lotfi *et al.*, 2012).

It is an established fact that a well-balanced diet is important for good health and may also provide other benefits, such as alleviating the severity of some menopause-related symptoms (Francesca, 2011). Diet plays an important role in the reduction of menopausal symptoms. Even regular exercise benefits the heart, bones and to maintain ideal body weight which contributes to a sense of overall wellbeing and improvement in mood.

Calcium and soy isoflavones are two essential nutrients on top of the list for women's health. Calcium is the most important bone builder mineral used in the prevention and treatment of osteoporosis. Isoflavones are natural phytoestrogens found in many foods which tailor the menopausal therapy in a natural way (Carusi, 2000 and Goyal *et al.*, 2009). Phytoestrogens resemble estrogens in structure and function. They bind weakly to estrogens receptor which predominates in breast, uterus and ovary cells and it binds strongly to receptor which predominates in prostate, bone and vascular tissue. Phytoestrogens exert organ specific estrogenic or anti-estrogenic effect by blocking the estrogen receptors and possessing weak estrogenic activity (Goyal *et al.*, 2008).

Materials and Methods

A total sample of 300 menopausal women between 40 and 60 years of age was selected for the study. Purposive sampling technique was used comprised of 100 premenopausal, 100 premenopausal and 100 postmenopausal women.

The survey was conducted to collect the information on bone and joint related health problems among the selected menopausal women, exercise pattern followed by menopausal women and common calcium source milk consumption pattern.

Author's affiliation: *,**Department of Foods and Nutrition, College of Home Science, Vasantrya Naik Marathwada Krishi Vidyapeeth, Parbhani- 431402 (M.S.)

Corresponding Author: NalwadeVijaya M., Dept. of Foods and Nutrition, College of Home Science, Vasantrya Naik Marathwada Krishi Vidyapeeth (VNMKV), Parbhani (M.S.)-431402.

E-mail: vm_nalwade@rediffmail.com

Statistical analysis was carried out by applying 't' and 'z' tests to know the difference among anthropometric measurements, haemoglobin content and serum calcium content. The statistical significance between different parameters were tested by adopting students 't' test (Panse and Sukhatme, 1988).

Results and Discussion

Information regarding bones and joints related health problems perceived by the selected menopausal women is presented in Table 1. All the selected menopausal women were divided in equal number based on menopausal stage as premenopausal (100), premenopausal (100) and postmenopausal women (100) and surveyed to collect the information on bones and joint related health problems, exercise pattern and milk consumption pattern among selected menopausal women.

Bones and joints related health problems mostly perceived by menopausal women were knee pain (43%) followed by waist pain (37%), leg pain (34%) and back pain (29%) which was significantly higher

among postmenopausal women than that of premenopausal and premenopausal women. All bones and joint related problems except ankle problem were highly prevalent among postmenopausal women than that of premenopausal and premenopausal women. Whereas, ankle pain was perceived by significantly more per cent of premenopausal women (18%) than that of premenopausal women (4%) and more among postmenopausal women (14%) than that of premenopausal women (4%). On the other hand, the incidence of fracture was significantly more among postmenopausal women as compared to premenopausal and premenopausal women.

Statistical analysis showed that all the bones and joints related health problems were found to be significantly more among postmenopausal women than that of premenopausal women and in premenopausal women as compared to premenopausal women. Besides these significant differences were seen among postmenopausal women and premenopausal women in regard to prevalence of knee pain, waist pain, shoulder pain, all joint pain and incidence of fracture was also noticed.

Table 1: Bones and Joints Related Health Problems Perceived by the Selected Menopausal Women

Physiological symptoms	Per cent of menopausal women			a vs. b	b vs. c	a vs. c
	Premenopausal (n=100) a	Premenopausal (n=100) b	Postmenopausal (n=100) c			
Legs	13	31	34	5.46**	0.66 ^{NS}	5.87**
Knees	16	28	43	3.80**	2.96*	5.96**
Ankles	4	18	14	7.85**	1.81 ^{NS}	7.17**
Waist	7	26	37	7.22**	2.47*	8.09**
Back	5	22	29	7.74**	1.96 ^{NS}	8.32**
Shoulder	0	5	12	11.18**	5.67**	10.44**
All joints	0	2	6	14.14**	7.07**	10.95**
Incidence of fracture	1	4	8	8.66**	4.85**	9.35**

NS- non significant *- significant at 5 % level ** - significant at 1 % level

The problems regarding bone and joint pain were found in more per cent of menopausal women which may be attributed to decline the level of estrogen during menopause stage. The body's ability to keep up with the natural process of bone resorption and bone turnover also declines as bone mass decreases. With the onset of menopause, rapid bone loss occurs which is believed to average approximately 2 to 3 per cent over the following 5 to 10 years, the risk of fractures increases being greatest in the early postmenopausal years. Life time losses may reach 30 to 40 per cent of the peak bone mass in women which leads to osteoporosis. Besides these prolonged amenorrhoea, low calcium diet, lack of exercise and vitamin D deficiency also causes the bone and joint related problems.

Frequency of consumption of milk by the selected menopausal women is presented in Table 2. It was found that 55, 38 and 42 premenopausal, and postmenopausal women were having the habit of consuming milk. More number of premenopausal women (22) had the habit of consuming milk daily as compared to premenopausal (15) and postmenopausal women (12). Even similar trend was noticed in following weekly consumption of milk pattern. On the other hand, more number of postmenopausal women (15) was found to be consuming milk one to three times in a month followed by premenopausal women (13) and premenopausal women (11).

In conclusion, it can be said that more number of premenopausal women had the habit of consumption of milk as compared to premenopausal and postmenopausal women. More per cent of premenopausal women (22%) were found to be consuming milk daily than that of postmenopausal and premenopausal women. Similar trend was also noticed in weekly consumption of milk. Among all

the selected menopausal women, more number of premenopausal women had the habit of consuming milk weekly as compared to premenopausal and postmenopausal women. On the other hand, it was found that more number of postmenopausal women were having habit of consumption of milk monthly one to three times than premenopausal and premenopausal women.

Table 2: Frequency of Milk Consumption by Selected Menopausal Women

Particulars	Per cent of menopausal women		
	Premenopausal (n=100)	Premenopausal (n=100)	Postmenopausal (n=100)
Daily			
One time	12	13	7
Two time	10	2	5
Weekly			
One time	12	10	9
Two time	5	5	1
Three time	2	0	2
Four time	1	1	3
Monthly			
One time	4	3	7
Two time	9	6	6
Three time	0	2	2
Total	55	38	42

Even Geeta *et al.*, (2011) found that the milk consumption was more among premenopausal women than that of premenopausal and postmenopausal women. On the contrary, the results of Farida *et al.*, (2009) and Pon *et al.*, (2006) indicated that milk intake was more among postmenopausal women than that of premenopausal women. Prevailing exercise pattern among the selected menopausal women is presented in Table 3. More number of premenopausal women (46) was having habit of exercise than that of premenopausal (35) and postmenopausal women (25). In case of frequency of exercise daily, twice a week and thrice a week were significantly more among premenopausal women than that of premenopausal and postmenopausal women. While once in a week exercise pattern were followed more by premenopausal women than those of premenopausal women and more by postmenopausal women as compared to premenopausal women was observed.

In case of duration of exercise it was found that 15 minutes duration of exercise was done by significantly more postmenopausal women, 30 minutes by more premenopausal women and 45 minutes by more premenopausal women which was significant statistically. One hour duration for exercise was followed by significantly more number of premenopausal women than that of postmenopausal women.

It was found that walking as an exercise was followed by maximum number of premenopausal women (37). Maximum numbers of premenopausal women (18) were carrying out exercise for one hour duration. Frequency of exercise was found to be three times a week in maximum number of premenopausal women (16). Similar trend also was noticed among premenopausal women. In regard to exercise pattern it was noticed that maximum number of premenopausal women (37) were performing walking as an exercise. The frequency of exercise was noticed to be thrice a week in more number of premenopausal women (23). Majority of premenopausal women (18) were carrying out exercise for one hour duration followed by 45 minutes (11). In case of premenopausal women majority of women (19) were carrying out exercise for one hour followed by 30 minutes (15). Even in case of postmenopausal women majority (17) were performing walking and more number (10) of them were doing exercise three times in a week. However, majority (12) of them were doing exercise for only 15 minutes and none of them were found to be performing exercise for one hour duration.

Results indicated that more per cent (46) of premenopausal women had a habit of daily exercise as compared to premenopausal and postmenopausal women. All the three groups of menopausal women were having the significant difference in case of 15 minutes, 30 minutes and 45 minutes of exercise

duration except one hour duration of exercise which was significant in premenopausal women Vs

postmenopausal women and premenopausal Vs postmenopausal women.

Table 3: Prevailing Exercise Pattern among the Selected Menopausal Women

Particulars	Per cent of menopausal women			a vs. b	b vs. c	a vs. c
	Premenopausal (n=100)	Premenopausal (n=100)	Postmenopausal (n=100)			
Habit of Exercise						
Yes	35	46	25	1.92 ^{NS}	4.06**	2.36*
Type of exercise						
Walking	22	37	17	3.54**	4.99**	1.84 ^{NS}
Yoga	7	6	4	1.17 ^{NS}	3.08**	4.08**
Walking and yoga	6	3	4	5**	2.35**	3.08**
Frequency of exercise						
Daily	10	14	5	2.42*	6.33**	4.76**
Once a week	8	4	7	4.85**	4.08**	1.01 ^{NS}
Twice a week	1	5	3	8.94**	3.92**	8.16**
Thrice week	16	23	10	2.56*	5.32**	3.3**
Duration						
15 min	-	5	12	11.18**	5.67**	10.44**
30 min	6	15	9	5.8**	3.57**	2.97**
45 min	11	7	4	3.24**	4.08**	6.33**
1 hour	18	19	-	0.39 ^{NS}	10.27**	10.28**

NS- non significant

*- significant at 5 % level

** - significant at 1 % level

On the whole, it can be said that only one third of the menopausal women had the habit of doing exercise. Moderate exercise has a modest effect on preventing postmenopausal bone loss. Sedentary women suffer more from chronic back pain and insomnia. They often have poor blood circulation, weak muscles and loss of bone mass as immobilization can decrease bone mass. Just like muscles, bones adhere to the "use it or lose it rule". During exercise hormones called endorphins are released in the brain. They are "feel good" hormones involved in body's positive response to stress. Testosterone, a potent steroid hormone, increases muscle mass, which in turn helps to build bone density. When one exercises, the body releases testosterone, which is a natural antidote to bone loss. Therefore menopausal women should have the habit of exercise to maintain her own health.

Summary and conclusion

The per cent prevalence of all the bones and joints related health problems were significantly higher in postmenopausal women than those of premenopausal women except ankle pain. One third of the total selected menopausal women were having the habit of exercise. Habit of consumption of milk was reported by 135 menopausal women.

Every woman must have an understanding that menopause is an inevitable stage and therefore one has to be conscious about diet, exercise and good to oneself under this stage by having positive attitude

towards life. Beside these, modifications in lifestyle are necessary.

References

1. Achie LN, Olorunshola KV and Mabrouk M. (2011). Age at natural menopause among Nigerian women in Zaria, Nigeria. *Alpha-Linolenic Acid in Subjects after Ingestion of Three Different Forms of Flax seed. Journal of the American College of Nutrition*, 27, (2): 214–221.
2. Carusi D (2000). Phytoestrogens as hormone replacement therapy and evidence based approach. *Primary care uptake. For obst/Gygs*, 7: 253-259.
3. Francesca E (2011). Nutrition and the menopausal women. *Menopause update*, 14: (3).
4. Geeta K, Khanna K and Mahna R (2011). Physical health and morbidity profile of women in reproductive and post-menopausal years. *Ind. J. of Nutri. Dietet.*, 48., pp.490-498.
5. Goyal SS, Malagi U and Naik R (2008). Fabrication of soya based health food for menopausal women. *Ind. J. Nutri. Dietet.*, vol.46, 70-77.
6. Goyal SS, Malagi U and Naik R (2009). Impact of soy based health food on climacteric symptoms of premenopausal women. *Ind. J. Nutr. Dietet.*, 46, 204-217.
7. Javoor D, (2006). Nutritional status of pre, and postmenopausal women. M.Sc. Thesis. Dharwad University.

8. Khokhar KK, Kaur G and Sidhu S (2012). Menopausal age in working Punjabi women of Jalandhar and trend in other Indian populations. *Human Biology Review* (ISSN 2277 4424): 1 (3): 292-305.
9. Lotfi R, Loukid M and Hilali MK (2012). Nutritional status of Menopausal Women in the Rural Area of Marrakech (Morocco). *International J. of Sci. & Eng. Investigations.*, 1(1):104-108.
10. Panse VG and Sukhatme VP (1988). Statistical method for agricultural workers. ICAR Publication, New Delhi, p.p. 58-60.
11. Pon LW, Noor MY, Ong FB, Adeeb N, Mog SS, Shamsuddin K, Mohamed AL, Hapizah N, Mokhtar A and Wan HWH (2006). Diet, nutritional knowledge and health status of urban middle aged Malaysian women. *Asia Pac. J. Clin.Nutr.* 15(3): 388-399.

Instructions to Authors

Submission to the journal must comply with the Guidelines for Authors.
Non-compliant submission will be returned to the author for correction.

To access the online submission system and for the most up-to-date version of the Guide for Authors please visit:

<http://www.rfppl.co.in>

Technical problems or general questions on publishing with IJFND are supported by Red Flower Publication Pvt. Ltd's Author Support team (<http://www.rfppl.co.in>)

Alternatively, please contact the Journal's Editorial Office for further assistance.

A Lal

Publication-in-Charge

Indian Journal of Food, Nutrition and Dietetics

Red Flower Publication Pvt. Ltd.

48/41-42, DSIDC, Pocket-II

Mayur Vihar Phase-I

Delhi – 110 091

India

Phone: 91-11-22754205, 45796900, Fax: 91-11-22754205

E-mail: redflowerppl@gmail.com, redflowerppl@vsnl.net

Website: www.rfppl.co.in