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The impact of age, body mass index and addiction in association with musculoskeletal complain among post-menopausal women at a selected rural village in Bangladesh

Rebeka Sultana, Sapia Akter, Md. Shahoriar Ahmed, K M Amran Hossain, Farjana Tawhid, S. M. Iftekhar Alam

ABSTRACT

Aims: Very little evidence found in Bangladesh about post-menopausal women's health. 'non-communicable' disease like musculoskeletal complain, chest pain is a challenging problem among post-menopausal women which is not revealed previously in Bangladesh. This study was aimed to document the 'post menopause' related musculoskeletal symptoms which are being associated with vulnerable age group, body mass index and addiction. Methods: A quantitative cross-sectional study design was chosen to accomplish the objectives of the study. 100 subjects were selected conveniently from a selected rural village at Bastupur at Chuadanga district in Bangladesh. Semi-structured pretested preformed questionnaires were used to collect the data. The participants of all 'post menopause' women according to inclusion criteria were requested to answer the developed format of the question. Results: In the study, the vulnerable age group was women in their fifth decade of life onwards (32%) and majority of them were housewife (99%) completed primary education (47%), living with their husband (74%) and widow (24%). In women with 55-59 years, the common health problem complained as disturbance in sleeping (28%), experience of depression (32%), and poor memory (34%). The musculoskeletal complaints were diverse joint limitations as finger (21%), hip (25%), postural deformity of spine in some extend. Low back pain and knee pain was most common complaint in pre and post menopause state although more eminent in post menopause state representing 56% and 29%. Among the respondents, more than one third intakes jorda or tobacco leaf and experiences sharp chest pain that is eminent in statistical significance (p=.002). One third of the respondents experienced musculoskeletal complaints before menopause for 0-6 months and nine out of ten respondents experienced post-menopausal musculoskeletal complications with other co-morbidities. Conclusion: This is the maiden attempt to screen musculoskeletal complaint among post-menopausal women living in a village in a developing country in south east Asia. Bangladesh has been appreciated globally for an attempt in elevating the maternity and women's health issues. Hence, the impairments in elderly women needs to be focused and acted accordingly to enable successful and healthy ageing in a developing country like Bangladesh.

Keywords: Addiction, Bangladesh, Body mass index, Musculoskeletal complaints, Post-menopausal women

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INTRODUCTION

Bangladesh is a densely populated low-income country with 166.37 million populations that makes this country as ninth most populous country in the world. It has 64 districts with 59,990 villages. Life expectancy in Bangladesh is currently 67.9 in men and 71.7 in women [1, 2]. Bangladesh's achievements in the past decade have been exemplary in many sectors such as in reducing infant and child mortality, poverty alleviation, increase in women entrepreneurship, education, and health but limited attempts to elevate women's health, safety and successful ageing. A major issue of "post-menopausal women" the associated problem is not being discussed in a vast way one of the major cause is the cultural barriers. Menopause a natural physiological process for every woman after cessation of ovarian follicular activity and is manifested by the end of menstrual flow lasting at least 12 months [3, 4, 5]. After a certain decade of life, bodily change declines to produce gonadotropins estrogen and progesterone hormone. This deficiency causes various health-related problems like somatic problem: as anxiety, pain, fatigue and many more. The musculoskeletal problem included back pain, neck pain, osteoarthritis (OA), osteoporosis (OP), rheumatoid arthritis (RA) and others. The vasomotor problems were manifested by night sweats, sexual problem, vaginal dryness, vulvovaginal atrophy, flashes, migraine and that certainly hampers the overall quality of life (QoL) of women [3, 6, 7, 4]. Evidences show peri-arthritis, reflex sympathetic dystrophic syndrome, carpal tunnel syndrome and adhesive capsulitis were more common in women at 4th and 5th decade of life where as low back pain was more prevalent in 66% women suffering from backache commonly in their 5th decade of life [8]. Evidence shows strong association among post-menopausal women with smoking which causes hip fracture one in eight women above 80 years and the study found no association of these factors in premenopausal women [9]. Smoking and higher body mass index (BMI) is more common in adults those who are less educated [10]. Smoking is literally significant 0.2% greater risk for bone loss and loss of bone density of post-menopausal women per year [9]. Some studies not being able to find out any specific association between musculoskeletal complaint and somatic symptoms among post-menopausal women [11, 12]. Age-related changes are a major health concern worldwide. Globally, 1.5 million osteoporosis-related fractures happened among one of every two women at the age of 50 or more that causes permanent disability or death [13]. Research in the Netherlands shows musculoskeletal disease as the most expensive disease associated with hospital care, work absenteeism and disablement [14]. An epidemiological study showed a number of postmenopausal women over the age of 50 increasing day by day worldwide and is expected to reach 1.2 billion in the year of 2030 [15]. The study reveals that over three years aged menopausal women gains weight on average 2.25 kg and being associated with a coronary disease like blood pressure, blood lipids, chest pain and many more [16]. The chronic disease is the main feature for older age. The aim of the present study was to elaborate on the relationship of musculoskeletal complaints with age, body mass index and addiction among postmenopausal women. This kind of information is needed in particular for further development of preventive measures.

MATERIALS AND METHODS

Ethical consideration

The researchers were duly concerned regarding the ethical aspects of the study and formal permission was taken from the Institutional review board (IRB), from Bangladesh Health Professions institute - an academic institute of Centre for the rehabilitation of the paralysed (CRP), Savar, Dhaka, Bangladesh. After completing the institutional review procedure a formal permission was taken from chairman (elected representatives of a union parishad-political leader) of Bastupur village about the data collection. After getting the permission from chairman with the help of social welfare personnel and with some assistant from village people we completed the home visit of our 100 subjects who were completing the inclusion criteria. According to inclusion criteria subjects were given consent form and the purpose of the research was explained to them. The participants were informed that their participation would be fully voluntary and they had the right to withdraw or discontinue from the research at any time without any hesitation or risk. They were also informed that confidentiality would be maintained. Information might be published in any presentations or research paper, but their personal identity such as their name and address was not to be mentioned in the study.

Study designs

This is a quantitative 'cross-sectional' study where sample was chosen by convenient sampling technique.

Setting and participants

Data were gathered from the village of chuadanga district, locale named Bastopur which is situated in Damurhuda Thana. It is around 11 km far from the area. The zone of this town is 2580.30 square feet with 2867 population. The male-female proportion was 1442:1425 and educational percentage 42.25%. The religions of these villagers were Muslim (96.73%), Hindu (2.96%), Christianity (0.19%) and Buddhism (0.12%). The house hold number of this town is 723 [17]. Researchers choosed the village according to convenience and responsiveness to the aim of the study.

Data collection procedure

Data were collected with a pre-formed pre-tested semi-structured questionnaire. Questions were set in a logical order. Bengali version of question was used because of participants ease to understand. Necessary tools were used during data collection as questionnaire, weight machine. A total 100 date was collocated from March 2014 to October 2014. Data was collected directly by a graduate health professional.

Analysis

The descriptive statistical analysis was done by using statistical package for social science (SPSS) Version 20. This was published by quick book premier accounted company. Special findings were described through bar graphs and Table.

RESULTS

Among 100 participants, most of the age group was in the fifth decade of life. 32% (32) and most of the women were housewife 99% (99), their educational background was primary complete 47% (47) and about 46% (46) had no formal schooling 46% (46). Most of them were married 74% (74) but interestingly second most common marital status was widow 24% (24) (Table 1).

A total 100 participants, 56 participants had difficulty in sleeping which was most common in 55–59 years (28.57%) and 87 participants had depressive problems which were more common in 50–54 age 28 (32.18%), 86 participants responded to have poor memory which was more common in 50–54 age group 30 (34.88%), 98 participants having joint limitation which was more common in wrist 8 (8.16%) at the age of 55–59, finger 21 (21.43%) at the age of 50–54 and hip 25 (25.51%) at the age of 65–69 and 13 participantsobserved postural deformity which were more common in kyphosis 2 (15.38%) at the age of 60-64 and scoliosis 3 (23.08%) at the age of 50–54. From Table 2, we can see that vulnerable age group is 50–54 where finger joint is more commonly affected 21 (21.43%) (Table 2).

Among 100 participants "pre menopause" status shows 32% participants have different type of problems. Among the 32% of participants most vulnerable age group was 55–59 years where back pain was in 4 (12.5%), knee pain in 6 (18.75%), back and knee pain in 3 (9.38%). During pre-menopause, the most common complaint of LBP 13 (40.63%) and second most common complaint of knee pain 11 (34.39%) (Figure 1).

Among 100 participants 'post-menopause' status shows 95% participants that had the different type of problems. Among the 95% of participants the most vulnerable age group was 50–54 years where LBP was 20 (21.05%), neck pain was in 2 (2.11%) and knee pain was in 8 (8.42%). During 'post-menopause' most common complaint was LBP 54 (56.84%) and second most common complaintwas knee pain 29 (30.53%) (Figure 2).

Among 100 participants, 65 participants had chest pain which is more common among 26 (40%) those who intake jorda/tobacco leaf were found to be significant (p=0.001), continuous chest pain was found to be significant (.002) among 14 (21.5%) who had jarda/ tobacco leaf. Nature of chest pain was found to be significant (p=0.022), common in sharp shooting pain about 11 (16.9%) with jarda/ tobacco leaf intake. Severity of pain was found to be significant 0.005 where moderate pain was found to be more common in 23 (35.4%) with jarda/ tobacco leaf intake. Pain during work was noticed by 16 (24.6%) with jarda/tobacco leaf intake and pain relief of rest 16 (24.6%) (Table 3).

Among 100 participants, 32 participants had problem in pre menopause and 95 participants had problem in post menopause. Duration of the problem was 0-6 months major in pre-menopause and 0–1 years major in post menopause. In pre-menopause, knee pain was

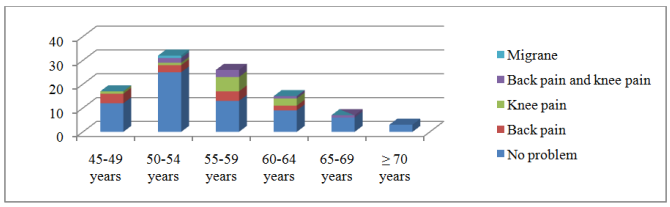

Figure 1: Problem among pre menopause women (n=100).

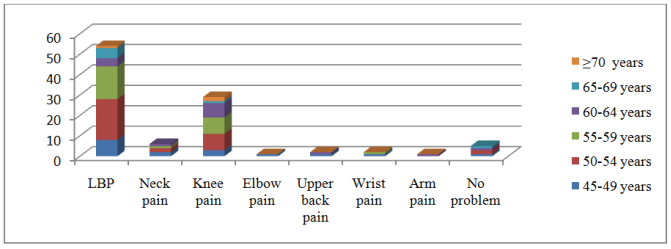

Figure 2: Problem among post-menopause women (n=100).

found as major problem among obese subjects. In post-menopause, LBP and knee pain were found as major problem among normal weight respectively 19 (20%) and 10 (10.5%) (Table 4).

DISCUSSION

In our country, particularly in rural area, it is very usual to see that people do not consult with physician until they are having severe problems. Such as if the pain/

Table 1: Demographic Profile of post menopause women (n=100)

Traits	Frequency (n)	Percent (%)
Age		
45–49 years	17	17
50–54 years	32	32
55–59 years	26	26
60–64 years	15	15
65–69 years	7	7
≥ 70 years	3	3
Occupation		
Housewife	99	99
Business	1	1
Education		
No formal Schooling	46	46
Vocational training	2	2
Primary School	47	47
Higher Secondary School	4	4
College or University	1	1
Marital Status		
Married	74	74
Divorce	2	2
Widow	24	24

Table 2: Age group with associated problem of sleep, depression, poor memory, joint limitation, postural deformity among post-menopausal women (n=100).

Traits		Age group						
		45-49 years n (%)	50-54 years n (%)	55-59 years n (%)	60-64 years n (%)	65-69 years n (%)	≥70 years n (%)	Total n=100
Difficulty in sleeping	Yes	11 (19.64)	15 (26.79)	16 (28.57)	11 (19.64)	2 (3.57)	1 (1.79)	56 (56%)
	No	6 (13.64)	17 (38.64)	10 (22.73)	4 (9.09)	5 (11.36)	2 (4.55)	44 (44%)
Feeling depressed down or blue	Yes	14 (16.09)	28 (32.18)	24 (27.59)	14 (16.09)	5(5.75)	2 (2.30)	87 (87%)
	No	3 (23.08)	4 (30.77)	2 (15.38)	1 (7.69)	2 (15.38)	1 (7.69)	13 (13%)
Experiencing poor memory	Yes	12 (13.95)	30 (34.88)	24 (27.91)	14 (16.09)	5(5.81)	1 (1.16)	86 (86%)
	No	5 (35.7)	2 (14.29)	2 (14.29)	1 (7.14)	2 (14.29)	2 (14.29)	14 (14%)

Table 2: *(Continued)*

Traits		Age group						
		45-49 years n (%)	50-54 years n (%)	55-59 years n (%)	60-64 years n (%)	65-69 years n (%)	≥70 years n (%)	Total n=100
Where have you experienced limitation of joint	Neck	3(3.06)	1(1.02)	0	2(2.04)	1 (1.02)	1 (1.02)	
	Shoulder	0	0	1 (1.02)	1 (1.02)	0	0	
	Elbow	0	1 (1.02)	1 (1.02)	1 (1.02)	0	0	
	Wrist	1 (1.02)	3(3.06)	8 (8.16)	1 (1.02)	1 (1.02)	0	98 (98%)
	Finger	7(7.14)	21 (21.43)	10 (10.2)	7(7.14)	3(3.06)	2(2.04)	
	Lower back	1 (1.02)	2(2.04)	1 (1.02)	1 (1.02)	0	0	
	Hip	2(2.04)	0	0	0	25 (25.51)	0	
	Knee	1 (1.02)	2(2.04)	3(3.06)	1 (1.02)	0	0	
	Ankle	1(1.02)	2(2.04)	0	1(1.02)	0	0	
	Toes	0	0	1(1.02)	0	0	0	
	No problem	1 (50)	0	1 (50)	0	0	0	2 (2%)
Postural deformity	Kyphosis	0	1(7.69)	0	2 (15.38)	1(7.69)	1(7.69)	13 (13%)
	Lordosis	1(7.69)	0	1(7.69)	0	0	0	
	Scoliosis	0	3 (23.08)	1(7.69)	2 (15.38)	0	0	
	No abnormality	16 (18.4)	28 (32.2)	24 (27.6)	11 (12.6)	6 (6.9)	2 (2.3)	87 (87%)

Table 3: Addiction and associated nature of Chest pain among post-menopausal women (n=100).

Traits	Chest pain				Total (n=100)	P value
	Yes n (%)			No n (%)		
Smoking	1 (50)			1 (50)	2 (2)	.001
Batle leaf	25 (83)			5 (17)	30 (30)	
Jarda/Tobacco leaf	25 (76)			8 (24)	33 (33)	
No addiction	14 (40)			21 (60)	35 (35)	
Types of pain						
	Continuous n (%)	Intermittent n (%)	Occasional n (%)	Not applicable n (%)		
Smoking	0	1 (50)	0	1 (50)	2 (2)	.002
Batle leaf	9 (30)	3 (10)	13 (43)	5 (17)	30 (30)	
Jarda/Tobacco leaf	14 (43)	5 (15)	6 (18)	8 (24)	33 (33)	
No addiction	8 (23)	1 (3)	5 (14)	21 (60)	35 (35)	
Nature of pain						

Table 3: *(Continued)*

Traits	Chest pain					Total (n=100)	P value
	Yes n (%)			No n (%)			
	Dull aching n (%)	Tingling n (%)	Sharp shooting n (%)	Throbbing n (%)	Not applicable n (%)		.022
Smoking	0	0	0	1 (50)	1 (50)	2 (2)	
Batle leaf	3 (10)	6 (20)	10 (33)	6 (20)	5 (17)	30 (30)	
Jarda/Tobacco leaf	3 (9)	8 (24)	10 (31)	4 (12)	8 (24)	33 (33)	
No addiction	2 (6)	8 (23)	3 (8)	1 (3)	21 (60)	35 (35)	
Severity of pain							
	Mild n (%)	Moderate n (%)	Severe n (%)	Not applicable n (%)			
Smoking	0	0	1 (50)	1 (50)		2 (2)	.005
Batle leaf	1 (3)	22 (73)	2 (3)	5 (17)		30 (30)	
Jarda/Tobacco leaf	0	22 (67)	3 (9)	8 (24)		33 (33)	
No addiction	0	12 (34)	2 (6)	21(60)		35 (35)	
Notice time of pain							
	During work n (%)	After work n (%)	During rest n (%)	Not applicable n (%)			
Smoking	0	1 (50)	0	1 (50)		2 (2)	.003
Batle leaf	15 (50)	3 (10)	7 (23)	5 (17)		30 (30)	
Jarda/Tobacco leaf	16 (49)	5 (15)	4 (12)	8 (24)		33 (33)	
No addiction	12 (34)	2 (6)	0	21 (60)		35 (35)	
Factor relief your symptoms							
	Rest n (%)	Medication n (%)	Not applicable n (%)				
Smoking	1 (50)	0	1 (50)			2 (2)	.011
Batle leaf	15 (50)	10 (33)	5 (17)			30 (30)	
Jarda/Tobacco leaf	15 (46)	10 (30)	8 (24)			33 (33)	
No addiction	9 (26)	5 (14)	21 (60)			35 (35)	

Table 4: Associated problem after menopause and before menopause with Body mass Index (n=100)

Traits			BMI				Total N=100
			Under weight	Normal weight	Over weight	Obese	
Experience any problem	Pre menopause	No problem	12 (17.6)	28 (41.2)	18 (26.5)	10 (14.7)	68 (68%)
		back pain	2 (6.3)	4 (12.5)	3 (9.4)	4 (12.5)	32 (32%)
		Knee pain	2 (6.3)	4 (12.5)	0	5 (15.6)	
		Back pain and knee pain	3 (9.4)	1 (3.1)	2(6.3)	1(3.1)	
		Migraine	0	1 (3.1)	0	0	
	Post menopause	No problem	1 (20)	3 (60)	0	1 (20)	5 (5%)
		LBP	13(13.7)	19(20)	11(11.6)	11(11.6)	95 (95%)
		Neck pain	2(2.1)	2(2.1)	2(2.1)	0	
		Knee pain	3(3.2)	10 (10.5)	9 (9.5)	7 (7.4)	
		Elbow pain	0	0	0	1 (1.1)	

Table 4: *(Continued)*

Traits			BMI				Total N=100
			Under weight	Normal weight	Over weight	Obese	
		Upper back pain	0	2 (2.1)	0	0	
		Wrist pain	0	1(1.1)	1(1.1)	0	
		Arm pain	0	1(1.1)	0	0	
How many days	Pre menopause	0-6 months	4 (12.9)	4 (12.9)	2 (6.5)	7 (22.6)	31 (31%)
		1 years	2 (6.5)	5 (16.1)	3 (9.7)	3 (9.7)	
		5 years	1 (3.2)	0	0	0	
		No problem	12(17.4)	29(42)	18()	10(14.5)	69 (69%)
	Post menopause	0-1 years	9 (9.5)	26 (27.4)	17(17.9)	18(18.9)	95 (95%)
		2-5 years	8 (8.4)	8 (8.4)	6 (6.3)	0	
		7-10 years	1(1.1)	1(1.1)	0	1(1.1)	
		Not applicable	1 (20)	3 (60)	0	1 (20)	5 (5%)

problem is too much severe then they take analgesic or such type of medication from the local dispensary without consultation with registered physician. They used to battle leaf, tamak, jarda but they don't care about the harmful effects of this addiction. In words, they have facing enormous somatic or vasomotor or psychological problems but careful measure is not necessary to them. In this culture they think they had already passed two third of their life so another one third will accordingly. In this study, we found most vulnerable age group was in 5th decade of life most of them were housewife and they have no formal schooling is 46% and only primary education had 47%, marital status found 74% married and sadly 24% were widow. Compared with data from the 2007 BDHS [18], these results show that there has been decline in the proportion of women who have never attended school about 34 to 28 percent. The study showed difficulty in sleeping which most common in 55-59 age group about 28.57%, complaint depression which was more common in 50-54 age groups about 32.18% and poor memory is more common in 50-54 age groups which are about 34.88%. Similar study found in Eichling and Sahni [19] and Nelson, et al. [7] found that menopause women had problem with depression, vaginal dryness, anxiety, sleep disorder, sexual dysfunction which was being associated with their hormonal changes. The joint limitation was more common in wrist 8 (8.16%), finger 21 (21.43%) and hip 25 (25.51) and postural deformity was more common in kyphosis 2 (15.38%) and scoliosis 3 (23.08%), similar study was found in Wolf and Colditzt [20] that mobility disability or joint limitation like unable to walk, carry weight was difficult for obese women and obese women had greater risk for becoming physically limited compared with lean women. In our study it shows during pre-menopause most common complaint of LBP 40.63% (n=13) and second most common complain of knee pain 34.39% (n=11) and post-menopause most common complaint was LBP 54 (56.84%) and second most common complaint was knee pain 29 (30.53%). Similar study evident that adhesive capsulitis were more common in women at 4th and 5th decade of life and low back pain slightly more prevalent about 66% women suggested low back ache manifested in fifth decade commonly [8]. Chest pain which was more common among 26 (40%) those who took jorda/tobacco leaf found to be significant (p=0.001), continuous chest pain found to be significant (.002) among 14 (21.5%) who intake jarda/ tobacco leaf. Nature of chest pain was found to be significant (p=.022), common in sharp shooting pain about 11 (16.9%) who intake jarda/ tobacco leaf. Severity of pain found to be significant 0.005 where moderate pain found to be more common in 23 (35.4%) in subjects with jarda/ tobacco leaf consumption. Pain during work was noticed by 16 (24.6%) who consumed jarda/tobacco leaf and pain relief at rest 16 (24.6%) (Table 3). Similar results were found in Eichling and Sahni [19]. Nelson, et al. [7] found that menopause women had greater risk in cardiovascular disease, chest problem which was being associated with their hormonal changes. Smoking was found literally significant (0.2%) greater risk for bone loss and loss of bone density of post-menopausal women per year [9]. The study also found that in pre-menopause knee pain found major problem among obese. In post menopause LBP and Knee pain found major problem among normal weight respectively 19 (20%) and 10 (10.5%) (Table 4). Similar result found in Mahajan, et al. [8] where low back ache experienced by women in 5th decade of life about 66% and LBP is slightly more prevalent in post-menopausal women.

LIMITATIONS

It will be more preferable if random sampling technique was chosen rather than the convenient sampling for further research in order to enable the power of generalization of the results. In the present study, only musculoskeletal problems were taken into account excluding other common health problems among post-menopausal women like- nutritional status, anxiety, communicable disease, visual and respiratory problems.

RECOMMENDATIONS

The current study was conducted at a selected village which may not represent the whole country. There even might be chance of recall bias because the participant may have forgot some information about their injuries/ complication. Further study is required to verify the consistency of findings and also to understand what factors contribute to those musculoskeletal complaints.

CONCLUSION

Musculoskeletal complain among the post-menopausal women is an uprising burden for Bangladesh. They rarely mention about musculoskeletal problems at the right time, having learned to live with pain, they commonly report physical disability. Their physiological change, aging process, working environment, awkward posture, duration of work, lack of awareness, inadequate rest/pause and lack of proper treatment are associated with the occurrence of serious musculoskeletal problems and complains. This study result will be helpful for the government of Bangladesh to policy making for the provision of multidisciplinary service where physiotherapy services can be a role model to treat this kind of condition and to enhance and promote successful ageing in women in a developing south east a asian country like Bangladesh.

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