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Associations of Musculoskeletal Pain with Socio-Demographic Characters, Sunlight Exposure, Exercise Status, Onset of Menopause, Shoulder Pain, Low Back Pain, Knee Pain and Treatment Outcome in Postmenopausal Women in Dhaka City

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Abstract

Background: The women around post-menopause are prone to Musculoskeletal Disorders (MSDs) due to hormonal changes. The advancing age of postmenopausal women makes them more vulnerable toward MSDs manifesting in the form of Musculoskeletal Pain (MSP). Literature review has suggested that limited or no studies have been reported particularly on associations of MSP with various etiological factors in postmenopausal women from Bangladesh.

Objectives: To determine the associations of MSP with Socio-demographic Characters, Sunlight exposure, exercise status, onset of menopause, Shoulder Pain, Low back pain, Knee pain and Treatment outcome among postmenopausal women from selected areas of Dhaka City.

Methods: A total of 101 postmenopausal women were selected by convenient sampling procedure. A structured questionnaire was used to collect the data by face to face interview for about six months from different areas of Dhaka city. Data were numerically coded, captured in Excel and analyzed by using an SPSS 26.0 version software programme.

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Results: The Chi-squared test showed that age range was significantly associated with MSP (x^2 =12.883, df=3, p=0.005), but BMI was not significantly associated with MSP (x^2 =5.999, df=3, p=0.112). Data analysis showed that associations of MSP with education level was not statistically significant (x^2 =2.952, df=5, p=0.707) and the source of income was also not statistically significant (x^2 =4.152, df=4, p=0.386). Sunlight exposure was significantly associated (x^2 =9.693, df=1, p=0.002), while exercise status was not significantly associated with MSP (x^2 =2.651, df=1, p=0.607). Onset of menopause was not significantly associated with MSP (x^2 =3.742, df=2, p=0.154) and number of children of the respondents were also not significantly associated with MSP (x^2 =1.947, df=2, p=0.378). No statistically significant associations between neck pain with age (x^2 =2.288, df=3, p=0.515), BMI (x^2 =1.994, df=3, p=0.574) and paresthesia (x^2 =2.348, df=1, p=0.125) were observed. Also, no statistically significant associations between shoulder pain with age (x^2 =6.226, df=3, p=0.101), BMI (x^2 =1.249, df=3, p=0.741) and sunlight (x^2 =0.721, df=1, p=0.396) were noted, but shoulder pain was significantly associated with stiffness (x^2 =6.191, df=1, p=0.013). No statistically significant associations between low back pain with age (x^2 =2.074, df=5, p=0.557), BMI (x^2 =2.446, df=3, p=0.485) and sunlight exposure (x^2 =0.437, df=1, p=0.509), exercise status (x^2 =0.584, df=1, (p=0.445), maximum pain time (x^2 =4.990, df=1, p=0.173), tingling (x^2 =0.94, df=1, p=0.759) and paresthesia (x^2 =1.445, df=3, p=0.229) were noted in our respondents. Further, no significant associations were found between knee pain with age (x^2 =7.126, df=3, p=0.68), BMI (x^2 =4.710, df=3, p=0.194), religion (x^2 =0.013, df=2, p=0.909) and stiffness (x^2 =2.074, df=5, p=0.398), but sunlight exposure (x^2 =5.525, df=1, p=0.019) and swelling (x^2 =18.312, df=1, p=0.000) were significantly associated.

Conclusions: Neck, shoulder, lower back and knee were affected most in postmenopausal women. Major factors that responsible for MSP were age and deficiency is sunlight exposure of the respondents. Awareness programmes and health promoting strategies to enhance quality of life of postmenopausal women should be initiated by concern authorities.

Keywords: Postmenopausal women, Musculoskeletal disorder, Musculoskeletal pain

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]. 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 causes 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 [2].

Menopause is the natural biological phenomenon in the women's life marked by entering to new phase of life after the end of women's reproductive age. Menopause is the stage when menstrual cycle stops permanently for more than 12 months and level of estrogen and progesterone drops which are the most important hormones in female body [3]. 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 [2].

Musculoskeletal Disorders (MSDs) are diverse group of conditions with regards to their pathophysiology but are linked anatomically by pain and physical function. Musculoskeletal Pain (MSP) has a higher prevalence in female, amongst which it is higher in postmenopausal women as compared to premenopausal women suggesting that the decline in the reproductive hormones is associated with increased pain perception [4]. The most common disorders seen in postmenopausal women were osteoarthritis, osteoporosis along with associated bone fractures and low back pain. The other symptoms associated with menopause are hot flushes, mood alterations, joints and muscle pain and sexual dysfunction. Postmenopausal MSP is generally associated with reduction of the ovarian function, where there is decline in the production of mainly estrogen hormone [5,6] Estrogen helps in maintaining the homeostasis of the joint and articular structure by regulating the molecular pathways. It also affects synovial lining, capsules, ligaments and muscles around the joint. Estrogen deficiency leads to increased cartilage wear and tear and joint surface erosion, reduction in bone mineral density, loss of muscle mass and strength, decrease in the collagen content of connective tissues which further leads to impairment in the muscle performance and functional capacity. All these changes lead to early degeneration in postmenopausal women [7]. The most well- known pain areas in MSD are low back, neck, knee, forearms and hands [8,9]. In developing countries, poverty, malnutrition, infectious diseases, and inadequate medical equipment may have a role in the occurrence of MSDs. MSP had no relationship with smoking, opium consumption, hypertension, level of education and dyslipidemia [8].

The majority of MSP is found in neck, lumbar region, hip and knee and most of these conditions are left over to be developed as chronic pain or recurrent MSP even beyond the menopausal period imposing the great burden to individual, family and society as well [10]. The prevalence of MSP among postmenopausal women was found to be 56% with mean age of onset of menopause as 46 yrs. Region wise analysis of MSP among postmenopausal women showed that back (57%) and knee (72%) pain to be most prevalent [7]. The women in menopausal stage are even more prone to suffer from these complaints due to decreased level of estrogen, ageing factor and lifestyle factor such as lack of physical activity, no exposure to sunlight and obesity [11].

The physiological and psychological changes in menopausal women include musculoskeletal changes such as osteoporosis, muscle atrophy, and muscle weakness symptoms that are more or less associated with advancing age [12]. Estrogen, the female sex hormone, plays a prominent role in maintaining the integrity of the musculoskeletal system [13]. Some studies suggested increases in Body Mass Index (BMI) or total fat mass with menopause [14]. BMI is widely used to predict ideal weight in relation to height and identify malnourished individuals and groups. However, studies that directly investigated the association of overall and central obesity with MSP in postmenopausal women are scarce [12]. The most common diagnosis was spondylosis for LBP and neck pain, osteoarthritis for knee pain and frozen shoulder for shoulder pain. The musculoskeletal complaint at different site of body was associated with osteoporosis risk, exercise status and sunlight exposure but was not associated with menopausal status. The obese women were more likely to have shoulder pain and knee pain. The severity of MSP was associated with comorbid condition, menopausal status and depressed mood due to pain [15].

A multi-country study showed that the mean age of menopause is 49.24 years, but that age varies in different countries based on climate and nutritional status [16]. Vitamin D has been identified as the contributing factor to prevent from muscle weakness and poor MSP health and the prevalence of inadequate Vitamin D is high in postmenopausal women. And it was found that most common factor responsible for inadequate vitamin D was limited sun exposure, lack of dietary intake in winter time [17]. The major source of Vitamin D is dependent on sunlight exposure which is a natural way and the need for supplementation varies in every individual [18]. Research and awareness regarding MSDs is still lacking even in the developed countries [8]. Improving our awareness of MSDs can be useful in early diagnosis of the disease and reducing the rate of its progression [19].

In Bangladesh population, wide cultural diversity, inequality in socio-economic status and gender are some of the sensitive multi factorial determinants that influence the menopausal health [20]. Postmenopausal symptoms are generally ignored in rural, suburban as well as urban Bangladesh, even if they suffer from symptoms silently [21,22]. There is under reporting of symptoms due to sociocultural factors as well due to lack of awareness and knowledge about these conditions.

Therefore, we studied the, "Socio-demographic Characteristics, Health related factors, Reproductive parameters, Musculoskeletal Disorders Prevalence and Treatment Seeking Patterns Among Postmenopausal Women from Selected Areas of Dhaka City" which we published recently [23]. Further, we investigated the significant associations of MSP with age, BMI, educational status, monthly income, sunlight exposure, exercise status, onset of menopause, number children of respondents; And also, factors associated with neck pain, LBP, knee pain and treatment outcome in our respondents. The results of these statistical analyses were reported in the present article.

Materials and Methods

Study Design: Descriptive cross-sectional study.

Study Area: Selected areas of Dhaka city, Bangladesh.

Study Period: Six months from November 2021 to April 2022.

Study Population: Women in postmenopausal phase within age range 42 years or above.

Selection (inclusion) Criteria: Medically stable women who have started their menopause, of age range 42 years and above.

Selection (exclusion) Criteria: Women not willing to participate due to personal reason, Women diagnosed with any medical condition of neurological, critical/severe mental disorder/disease, women diagnosed with malignancy, bedridden women.

Sample Size: Due to limitations of time and finance, sample size were limited to 101.

Sampling Technique: Convenient type sampling technique. Samples of the study population were selected purposively to interview considering the inclusion and exclusion criteria.

Data Collection Methods: Data collection procedure involved face to face interview with structured questionnaire.

Data Collection Instruments: The organized materials were written questionnaire, consent form, pen, pencil, paper, weight machine, height measuring tape, etc.

Data Management & Analysis: Data were analyzed with the software "Statistical Package for Social Sciences" (SPSS) programme Version 26. Data were numerically coded and captured in Microsoft Excel using SPSS software program 26 version. Microsoft Office Excel 2016 was used to decorate the table, bar graph, pie charts, etc.

Ethical Issues: Before data collection, permission from the Ethical Committee of State College of Health Sciences (SCHS) was taken and a request letter was handed over to appropriate authorities of the study area for permission and seeking assistance for smooth access to data collection. All ethical issues related to research involving human subject were addressed according to the guidelines of World Medical Association (WMA) [24]. Participant's right to refuse and withdraw from the study were accepted. All questionnaires and ethical documents were translated into Bangla if necessary before interview.

Inform Consent: Participants were selected conveniently for the study according to inclusion and exclusion criteria and informed the study objective properly by using consent form. Regarding ethical issues, the participants were informed clearly that the confidentiality would be maintained strictly according to WMA [24].

Results

The "Questionnaire" developed was used to obtain information about the respondents as the following: Socio-demographic information, Health related factors, Information about reproductive parameter, Factors related with musculoskeletal pain and related to treatment outcome pattern. The information obtained from the

respondents on various factors were processed and analyzed statistically for significant associations between MSP and all aetiological factors and the results are stated below.

Associations between MSP with age range and BMI are presented in Table 1. The Chi-squared test showed that age range was significantly associated with MSP (x^2 =12.883, df=3, p=0.005), but BMI was not significantly associated with MSP (x^2 =5.999, df=3, p=0.112) (Table 1).

Table 1: Association between MSP with Age and BMI among of the respondents (n=101).

Aetiological Factors	Musculoskeletal Pain (MSP)		Total	x^2	df	p-Value*
Age Range	**Yes**	**No**	101	12.88	3	0.005*
42-51	29	11				
52-61	41	2				
62-71	10	0				
72-81	8	0				
Total	88	13				
BMI	**Yes**	**No**	101	5.999	3	0.112
<18.5	3	0				
18.5-24.9	36	2				
25-29.9	43	11				
30 and above	6	0				
Total	88	13				

Note*: *p≤0.05: significant; p>0.05: Not significant

As stated in Table 2, data analysis showed that education level was not statistically significant (x^2 =2.952, df=5, p=0.707) and the source of income was also not statistically significant with MSP (x^2 =4.152, df=4, p=0.386) (Table 2).

Table 2: Associations between MSP with education level and source of monthly income of the respondents.

Aetiological Factors	Musculoskeletal Pain		Total	x^2	df	p-value*
	Yes	**No**	101	2.952	5	0.707
Education Level						
Illiterate	22	2				
Primary	20	5				
Secondary	22	4				
Higher secondary	16	2				
Graduation	7	0				
Post-graduation and above	1	0				
Total	88	13				
Source of Monthly Income						
9000-28000	37	5	101	4.152	4	0.386
29000-48000	26	7				
49000-68000	16	1				
69000-88000	6	0				
89000-108000	3	0				
Total	88	13				

Note*: *p≤0.05: significant; p >0.05: Not significant

Sunlight exposure was significantly associated (x^2 =9.693, df=1, p=0.002), while exercise status was not significantly associated with MSP (x^2 =2.651, df=1, p=0.607) as stated in Table 3.

Table 3: Associations between MSP with sunlight exposure and exercise status of the respondents.

Sunlight Exposure	Musculoskeletal Pain		Total	x^2	df	p-Value*
	Yes	No				
Yes	34	11	101	9.693	1	0.002*
No	54	2				
Total	88	13				
Exercise Status	Yes	No	101	2.651	1	0.607
Yes	19	2				
No	77	3				
Total	96	5				

Note*: *p≤0.05: significant; p>0.05: Not significant

Data analysis showed that onset of menopause was not significantly associated (x^2=3.742, df=2, p=0.154) and number of children of the respondents were also not significantly associated with MSP(x^2=1.947, df=2, p=0.378) as shown in Table 4.

Table 4: Associations between MSP with onset of menopause and number of children of the respondents.

Aetiological Factors	Musculoskeletal Pain		Total	x^2	df	p-value*
	Yes	No				
Onset of Menopause						
39-43	15	5	101	3.742	2	0.154
44-48	55	7				
49-53	18	1				
Total	88	13				
Number of Children						
3-Jan	13	2	101	1.947	2	0.378
6-Apr	45	9				
9-Jul	30	2				
Total	88	13				

Note*: *p≤0.05: significant; p>0.05: Not significant

As shown in Table 5, no statistically significant associations between neck pain with age (x^2=2.288, df=3, p=0.515), BMI (x^2=1.994, df=3, p=0.574) and paresthesia (x^2=2.348, df=1, p=0.125) were found.

Table 5: Factors associated with neck pain in postmenopausal women.

Aetiological Factors	Neck Pain		Total	x^2	df	p-value*
Age	**Yes**	**No**				
42-51	8	21	88	2.288	3	0.515
52-61	11	30				
62-71	5	5				
72-81	2	6				
Total	26	62				
BMI						
<18.5	0	3	88	1.994	3	0.574
18.5-24.9	12	24				
25-29.9	13	30				
30 & above	1	5				
Total	26	62				

Paresthesia						
Yes	9	12	88	2.348	1	0.125
No	17	50				
Total	26	62				

Note*: *p≤0.05: significant; p>0.05: Not significant

Data analysis showed no statistically significant associations between shoulder pain with age (x^2 =6.226, df=3, p=0.101), BMI (x^2 =1.249, df=3, p=0.741) and sunlight (x^2 =0.721, df=1, p=0.396), but shoulder pain was significantly associated with stiffness (x^2 =6.191, df=1, p=0.013) (Table 6).

Table 6: Factors associated with shoulder pain in postmenopausal women.

Aetiological Factors	Shoulder Pain		Total	x^2	df	p-value*
Age	**Yes**	**No**				
42-51	6	23	88	6.226	3	0.101
52-61	10	31				
62-71	6	4				
72-81	2	6				
Total	24	64				
BMI						
<18.5	0	3	88	1.249	3	0.741
18.5-24.9	10	26				
25-29.9	12	31				
30 & above	2	4				
Total	24	64				
Sunlight						
Yes	11	23	88	0.721	1	0.396
No	13	41				
Total	24	64				
Stiffness						
Yes	8	7	88	6.191	1	0.013*
No	16	57				
Total	24	64				

Note*: *p≤0.05: significant; p>0.05: Not significant

Also, no statistically significant associations between low back pain with age (x^2=2.074, df=5, p=0.557), BMI (x^2=2.446, df=3, p=0.485), sunlight (x^2=0.437, df=1, p=0.509), exercise status (x^2 =0.584, df=1, (p=0.445), maximum pain time (x^2 =4.990, df=1, p=0.173), tingling (x^2 =0.94, df=1, p=0.759) and paresthesia (x^2 =1.445, df=3, p=0.229) were noted in our respondents (Table 7).

Table 7: Factors associated with low back pain in postmenopausal women.

Aetiological Factors	Low Back Pain		Total	x^2	df	p-value*
Age	***Yes***	***No***				
42-51	19	10	88	2.074	5	0.557
52-61	25	16				
62-71	4	6				
72-81	5	3				
Total	53	35				

BMI						
<18.5	3	0	88	2.446	3	0.485
18.5-24.9	22	14				
25-29.9	24	19				
30 & above	4	2				
Total	53	35				
Sunlight						
Yes	19	15	88	0.437	1	0.509
No	34	20				
Total	53	35				
Exercise Status						
Yes	10	9	88	0.584	1	0.445
No	43	26				
Total	53	35				
Maximum Pain Time						
Morning	17	19	88	4.99	3	0.173
Day	9	4				
Evening	2	2				
Night	25	10				
Total	53	35				
Tingling						
Yes	26	16	88	0.94	1	0.759
No	27	19				
Total	53	35				
Paresthesia						
Yes	15	6	88	1.445	1	0.229
No	38	29				
Total	53	35				

Note*: *p≤0.05: significant; p>0.05: Not significant

Data analysis showed no significant associations between knee pain with age (x^2=7.126, df=3, p=0.68), BMI (x^2=4.710, df=3, p=0.194), religion (x^2=0.013, df=2, p=0.909) and stiffness (x^2=2.074, df=5, p=0.398), but sunlight exposure (x^2=5.525, df=1, p=0.019) and swelling (x^2=18.312, df=1, p=0.000) were significantly associated with knee pain (Table 8).

Table 8: Factors associated with knee pain in postmenopausal women.

Aetiological Factors	Knee Pain		Total	x^2	df	p-value*
Age	**Yes**	**No**				
42-51	13	16	88	7.126	3	0.681
52-61	22	19				
62-71	8	2				
72-81	7	1				
Total	50	38				
BMI						
<18.5	2	1	88	4.71	3	0.194
18.5-24.9	16	20				
25-29.9	27	16				
30 & above	5	1				
Total	50	38				

Religion Muslim						
	43	33	88	0.013	2	0.909
Hindu	7	5				
Total	50	38				
Sunlight Exposure						
Yes	14	20	88	5.525	1	0.019*
No	36	18				
Total	50	38				
Swelling						
Yes	29	5	88	18.312	1	0.000*
No	21	33				
Total	50	38				
Stiffness						
Yes	10	5	88	0.715	1	0.398
No	40	33				
Total	50	38				

Note*: *p≤0.05: significant; p>0.05: Not significant

As stated in (Table 9), outcome (Improved, Worsened, Unchanged) after treatment of MSP was significantly associated with the type of treatment taken (x^2=22.994, df=3, p=0.000).

Table 9: Associations between treatment type of MSP with outcome.

Aetiological Factors	**Outcome After Taking Treatment**			**Total**	x^2	**df**	**p-value***
Treatment Type	**Improved**	**Worsened**	**Unchanged**				
Medication	4	6	10	81	22.994	3	0.000*
Physiotherapy	17	2	6				
Both	30	2	4				
Total	51	10	20				

Note*: *p≤0.05: significant; p>0.05: Not significant

Discussion

The women around post-menopause are prone to MSDs due to hormonal changes. The advancing age of postmenopausal women makes them more vulnerable toward MSDs manifesting in the form of MSP. We studied the "Socio-demographic characteristics, health related factors, reproductive parameters, musculoskeletal disorders prevalence and treatment seeking patterns among postmenopausal women from selected areas of Dhaka City" which we published recently [23]. Further, we extended our study by investigating the significance of associations of MSP with age, BMI, educational status, monthly income, sunlight exposure, exercise status, onset of menopause, number children of respondents; and also, factors associated with neck pain, LBP, knee pain and treatment outcome in our respondents. The findings of these statistical analyses are reported and discussed in the present article.

The results of our study showed significant relationship between MSP with age (p=0.005, Table 1) and sunlight exposure (p=0.002, Table 3). But there was no significant relationship found between BMI, education level, source of monthly income, exercise status, age of menopause with MSP(p>0.05, Table 1,2,3,4). *Najafipour, et al.* also reported significant positive associations of MSP with age and education level [8]. Baber et al noted significant positive associations between sunlight exposure and exercise status, but there were no significant associations of MSP with BMI, source of monthly income and age of menopause as observed by us also (p>0.05, Table 4) [18].

Out of our 88 women respondents with MSP, highest prevalence was in 26.5% (n=26), the neck pain among postmenopausal was not significantly associated with age, BMI and paresthesia and pain interfering work in postmenopausal women (Table 5). The majority cases of neck pain (89%, n=78) diagnosed in this study was similar to findings reported by Woolf and Pfleger [25]. The shoulder pain in postmenopausal women was significantly associated with stiffness (p=0.013, Table 6).

Out of our 88 postmenopausal women with MSP, 60.5% (n=53) had LBP with MSP. According to a study, (60% n=52) of postmenopausal women were diagnosed with lumbar spondylosis which was thought to be most common cause of back pain as reported

by *Woolf and Pfleger* [25]. LBP among postmenopausal women was not associated significantly with exercise status, maximum time of pain, paresthesia and tingling sensation. LBP was not associated significantly with age which was also supported by other studies [26,27]. However, they showed statistically significant relationship between menopausal status and LBP, which was found non-significant in our study (Table 7).

Out of our 88 respondents with MSP, maximum of them (56.8%, n=50) had knee pain. This was supported by reported findings that common MSD problem affecting postmenopausal women was osteoarthritis, as 97% of their respondents were diagnosed with it as reported by other investigators [15,28]. The knee pain among our postmenopausal women was significantly associated with sunlight exposure (p=0.019) and swelling (p=0.000) (Table 8). These findings were supported by Brazilian and Philadelphia studies with high severity of pain [29,30].

Our study showed that among 101 respondents MSP was present in 88 respondents, among them 81 respondents took medication or physiotherapy or both treatments. After taken treatment, 63% (n=51) had improvement in their condition, 12.35% (n=10) had worsen and 24.7% (n=20) had feeling unchanged after treatment. The feeling after treatment was significantly associated with treatment type (p=0.000, (Table 9). This finding was attributed to the ability of rural populations to adapt to chronic pain in the absence of treatment options as reported by *Jacobs, et al.* [31]. Although it was reported by Shrestha that physical exercise was significantly associated with MSP in different sites of body, our study findings did not support it as stated in Table 3 (p=0.607) [15].

As the age progresses degeneration begins due to which there may be various changes associated with muscle, ligaments, facets joints, intervertebral disc as reported by *Lane* [32]. It is already proved that because of low socioeconomic status, there is lack of intake of calcium, due to low educational status there is lack of exercise and awareness regarding health. And some studies have also proved that osteoporosis increases with advancement of age [33]. Most of these factors are associated with age advancement. As the age advances musculoskeletal complaints increase [34] also there is reduction of estrogen hormone which has important role in maintenance of musculoskeletal system. Hence as age progresses, this hormone is reduced which in turn affects the musculoskeletal system. Our results, in comparison with previous literature, proved that age is one of the important factors for MSP in women along with the postmenopausal symptoms (p=0.005, Table 1) and supported the reported findings of *Kulkarni, et al.* and WHO [3,7].

Along with various musculoskeletal problems arising after onset of Menopauses, severity of these MSPs was significantly associated with menopausal status. Exercise status, co-morbidities and education level were also found to be associated with severity of pain. BMI had increased risk of knee pain in overweight and obese menopausal women. The menopausal health is a neglected aspect of healthcare system in Bangladesh. Most of the menopausal women are suffering from MSD related MSP, most common complaints are LBP and knee pain, despite they are going through psychological and social changes reported by *Sultana, et al.* [22]. Based on our study findings, some recommendations were made that awareness programme to reduce MSD related MSP and the health promoting strategies to enhance quality of life of menopausal women should be initiated by concerned authorities. Also, education regarding menopausal health should be given to them with focus on getting them engaged to regular physical exercise to promote healthy lifestyle. Thus, the findings of the present study would be helpful for the respondents to take relevant measures specially physiotherapy to overcome the health problems during their postmenopausal period. In conclusion, it was observed that neck, shoulder, lower back and knee were affected most. Major factors that were responsible for MSP were age and deficiency in sunlight exposure of the respondents. Awareness programme and health promoting strategies to enhance quality of life of postmenopausal women should be initiated by concern authorities. Some limitations of the study were, however, that duration of study was short due to time limits and financial constraints and respondent size was small due to COVID-19 pandemic situation. Further are warranted involving more respondents and longer period of study.

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Conflict of Interest

None.

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