

A Cross Sectional Study to Assess Musculoskeletal Pain and Its Related Factors among Pregnant Women Attending at a Selected Public Hospital in Dhaka City

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ABSTRACT

Musculoskeletal pain (MSK) is a common issue during pregnancy. Some hormonal and anatomical changes that can affect the MSK system, creating complains about MSK pain. The objectives of the study to determine the prevalence and to assess the MSK pain and its associated factors among pregnant women. A cross-sectional study was conducted among 96 pregnant women attended in a selected tertiary public hospital situated in Dhaka city. Purposive sampling technique was used and data were collected from face to face interview with a structured administered questionnaire with consideration of inclusion and exclusion criteria. The Severity of MSK pain was assessed by a visual analogue scale (VAS) and data were analyzed by SPSS (Version 20). Results indicated as 59% prevalence of MSK pain was found among pregnant women with low back pain (LBP) being the common prevalent site as compared to others. The maximum age range of participants was 21 to 30 years old and housewives were more than half of the participants. Maximum completed below level of SSC. In addition, most of the participants had a history of normal delivery. However, there was a highly significant relation ($p=0.001$) found between MSK pain with the month of pregnancy period. MSK pain was moderately high among pregnant women where certain factors are responsible for influencing MSK pain. To reduce the severity and prevalence of MSK pain, women should be aware of their number of pregnancy and some related factors.

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Introduction

During pregnancy, a woman's body undergoes different changes mainly due to some hormonal and anatomical abnormality (Irland et al. 2003). The pregnancy period marked changes and adaptations in the woman's body that develop Musculoskeletal pain (MSK) (Adriano Dias et al. 2014). Significant risk of pregnancy related Low Back Pain (LBP) is directly associated different factors (Han In-Ho et al. 2010). The ideal posture that somehow ensures our back muscles are used most efficiently. Pregnancy increases the overall mass of the body and the center of gravity changes. The posture adjusts to the body's changing weight and subsequent forces (Jimoh et al. 2013). Carpal tunnel syndrome (CTS) is a frequent pregnancy complication with a reported high prevalence. The most common symptoms are numbness and tingling in the thumb, index finger, middle finger, and the ring finger's radial half (Robert et al. 2009). Hormonal changes in pregnancy may also cause sciatica and sacro-iliac joint dysfunction (Ahmed et al. 2012). The extra stress of carrying the baby pushes the body beyond its adaptability. The most common type of UI during pregnancy is urinary stress incontinence with anatomical changes such as hypermobility of the bladder neck and incompetence of the sphincter mechanism (Oliveiraa et al. 2013). Another common symptom of MSK during pregnancy is recurrent leg cramps that occur most frequently during the second half of pregnancy. The cramps are painful titanic contractions that

mainly occur in the muscles of the calf and the muscles of the thigh. Most of the MSK issues that arise during pregnancy can be prevented and treated with treatment with physiotherapy. In addition to aerobic exercises for pregnant women, various therapeutic exercises associated with resistance exercises were recommended. Prompting proper maternity care remains a major challenge in Bangladesh. Women experience anatomical & physiological changes during pregnancy that cause some MSK dysfunction during pregnancy and sometimes during postnatal periods as well. The aim of the study was just to address and assess common MSK complains among women during pregnancy. This study would help raise awareness among pregnant women about their maternal problems, and physiotherapist will be going to play physiotherapy services to prevent and treat these issues.

Methodology

From February 2016 to July 2016, a cross-sectional study was conducted over 6 months. Data were collected from the Department of Gynecology and Obstetrics in Shaheed Suhrawardy Medical College and Hospital, Dhaka. 96 data from daily attended pregnant women aged between 18 to 40 years were collected. A purposive sampling technique was used and data collection procedure was a face-to-face interview with a structured administered questionnaire with consideration of inclusion and exclusion criteria. To evaluate MSK pain, the visual Analogue Scale (VAS) was used. Investigators instruct the patient to point the position or the

line between the faces to show how much pain they are feeling. The far left end shows “no pain” and the far right end indicates “worst pain ever”.



The questionnaire was developed to provide the respondents with information on the following factors, such as Socio-demographic factors, information related to pregnancy, and factors related pain with MSK.

Pregnancy period was divided into three trimesters where the first trimester being denoted by 1st to 3rd months, the second trimester being 4th to 6th months & 3rd trimester being observed in 7th to 9th months. The chi-square test was used to find statistical significance among the variables. The required information was collected from the patients after getting their due consent & the corrected data were statistically analyzed by using the SPSS (version-20).

Results

Table 1 reveals that among the participants, the mean age was 26.44 years (± 4.676) where maximum participant's age range belongs to 21 to 30 years. According to educational level, maximum completed below SSC ($n=23$, 23.9%), a few percentages of participants completed graduate (7.3%) & post graduate (6.25%). Regarding occupation, the majority (69.8%) of the participant was a housewife comparatively to other professions.

Table 1. Socio demographic characteristics of respondents (n=96).

Variables	(n)	(%)
Age (in years)		
<20 years	12	12.5
21-25 years	36	37.5
26-30 years	36	37.5
>30 years	12	12.5
Mean \pm SD= 26.440 \pm 4.676		
Educational status		
No formal Schooling	12	12.5
Primary	19	19.8
Below SSC	23	23.9
SSC Completed	17	17.7
HSC Completed	12	12.5
Graduate	7	7.3
Post Graduate	6	6.3
Occupation		
Housewife	67	69.8
Service holder	19	19.8
Student	5	5.2
Maid servant	5	5.2

Considering pregnancy-related information, near about half (42.7%) of the participants had 2nd time pregnancy followed by 36.5% in 1st time, about 12.5% in 3rd time, and 8.3% in more than 3rd time. Regarding the pregnancy period, most of the participants belonged to 3rd trimester (44.8%) but the majority of the participants reported a history of normal delivery, whereas about 33.9% participants were the history of caesarean as shown in table 2.

Table 2. Distribution of respondents by pregnancy related information.

Variables	(n)	(%)
Number of pregnancy		
1 st Time	35	36.5
2 nd Time	41	42.7
3 rd Time	12	12.5
>3 rd Time	8	8.3
Pregnancy period (Month)		
1 st trimester	19	19.8
2 nd trimester	34	35.4
3 rd trimester	43	44.8
History of previous delivery (n=59)		
Normal (Vaginal) Delivery	39	66.1
Caesarean Section	20	33.9

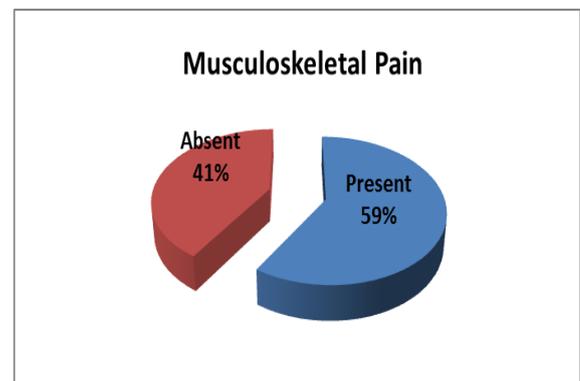


Figure 1. Prevalence of Musculoskeletal Pain.

Current study found 59% prevalence of MSK pain among pregnant women as shown in figure 1.

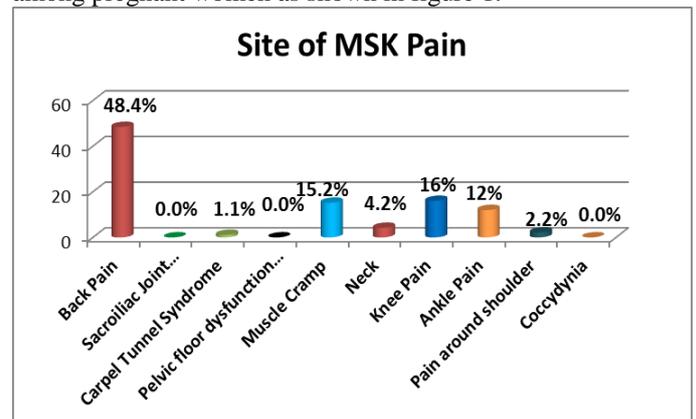


Figure 2. Distribution of participants based on site of MSK pain.

Figure 2 reveals that back pain (48.4%), muscle cramp (15.2%), knee pain (16%), and ankle pain (12%) were the most prevalent site of MSK pain. According to the severity of pain, maximum participants suffered from moderate levels of pain (4-6) and mild pain (0-3). On the other hand, very few reported severe (7-10) MSK pain assessed by VAS scale as shown in table 3.

Table 3. Distribution of participants by Severity of Pain (VAS) (n=56).

Severity of Pain (VAS)	(n)	(%)
0	0	0.0
1	0	0.0
2	3	5.4
3	3	5.4
4	5	8.9
5	27	48.2
6	13	23.2
7	4	7.1
8	1	1.8
9	0	0.0
10	0	0.0

Table 4. Association between MSK pain with pregnancy related variables.

Variables	Musculoskeletal Pain		p-value
	Present	Absent	
Pregnancy period			
1 st trimester	3 (15.8%)	16 (84.2%)	0.001*
2 nd trimester	18 (52.9%)	16 (47.1%)	
3 rd trimester	35 (81.4%)	8 (18.6%)	
History of previous delivery (n=59)			
Normal (Vaginal) Delivery	24 (54.5%)	20 (45.5%)	.973
Caesarean Section	11 (55.0%)	9 (45.0%)	
Occupation			
Housewife	39 (58.2%)	28 (41.8%)	.747
Service holder	10 (52.6%)	9 (47.4%)	
Student	3 (60.0%)	2 (40.0%)	
Maid servant	4 (80.0%)	1 (20.0%)	
Number of pregnancy			
1 st Time	16 (45.7%)	19 (54.3)	.302
2 nd Time	27 (65.9%)	14 (34.1%)	
3 rd Time	8 (66.7%)	4 (33.3%)	
>3 rd Time	5 (62.5%)	3 (37.5%)	

p-value reached from chi-square. Mark represents a high significant association of MSK pain with pregnancy period (p-value 0.001).

Discussion

The present study was undertaken to determine the prevalence of MSK and its associated factors among pregnant women. The current study showed that MSK pain is a common problem found in pregnant women and was 59 percent prevalent. Maximum participants in the 3rd trimester complained about MSK pain. Ansari et al. (2012) found a prevalence of about 57.3% of LBP during pregnancy. CTS is the most common MSK pain during pregnancy and its prevalence in the third trimester was high (62%) (Mogren et al.2005). Sohravand et al. (2009) stated that a significant symptom was found during pregnancy with leg cramps and 54.7 percent prevalent in pregnancy. The current study found that back pain in comparison with other sites was the most prevalent site of MSK pain. A study by Ramachandra et al. (2015) on MSK dysfunction indicated that approximately 64.6% reported calf muscle cramps, followed by 37.1% reported foot pain, and 33% reported LBP in their third trimester. A study conducted by Jaspindere et al. (2013) reported that backache, leg cramps, abdominal pain and increased urinary frequency were reported in 47%, 14%, 33%, and 50% respectively mothers. This study revealed that the maximum number of pregnant women suffered from mild to moderate levels of pain evaluated by the scale of VAS. There was, however, a significant relationship between MSK pain with pregnancy period, which indicated that the 3rd trimester was the most risk stage for MSK pain.

Conclusion

It is concluded that the prevalence of MSK pain among pregnant women was relatively high where back pain was the most prevalent site of MSK pain, and the majority of pregnant women reported mild to moderate pain levels that were assessed as the international pain rating scale known as VAS. Awareness of the number of pregnancies and regular check-up by both a Gynaecologist and a Physiotherapist may help prevent and reduce MSK pain prevalence.

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