

Original Research Article

Gender differences in description of chronic musculoskeletal pain

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ABSTRACT

Background: Pain is a subjective experience and different people describe their pain differently. Due to biological, psychological and sociocultural differences among different gender there is a variation in their pain experiences. Though gender differences in medical history taking have been studied it is still a concept that needs exploration. In addition the gender differences in the impact of pain on sleep function needs to be explored.

Methods: A sample of 240 patients including both male and females were randomly recruited from OPD of a tertiary care hospital. The patients were asked to describe their pain in terms of quality through face to face structured interview. The number of descriptors used by every individual was noted. Specific questions regarding pain intensity on numeric pain rating scale and sleep function were also recorded.

Results: 67.8% of females used more than two descriptors to explain their pain compared to 53.3% of males. The mean pain intensity reported by females was 7.28 ± 1.24 which was significantly higher than males. 37.8% of females reported bad sleep quality as compared to 16.7% of males.

Conclusions: Females report greater pain intensity and use more number of descriptors to report their pain. In addition there is higher impact of musculoskeletal pain on sleep quality in females than in males.

Keywords: Pain descriptors, Gender differences, Chronic musculoskeletal pain, Pain quality, Sleep quality

INTRODUCTION

Pain is subjective experience and communication of that experience is an important component.¹ The description of pain and language used plays an important role in assessment of gender differences in pain relation has gained importance in recent years. There are multiple biopsychosocial mechanisms which result in these differences. The language for description varies with gender due to variation in learned descriptors through difference in experience.² Gender is described in both biological and social sense not only there is a difference in communication style and level but social and emotional experiences also vary between males and females. Variation among gender cause men and women to sleep differently and have risk for sleep disorders differently.³ Inability to take proper sleep can do

significant impact on women daily working capacity and family care.⁴ Various sleep characteristics including sleep quality, duration, latency varies with gender variation among general population.⁵ Gender related differences in sleep may also contribute towards varying patterns of sleep disturbances due to pain.

Various studies on musculoskeletal pains found that women may be at greater risk of developing chronic pain and pain related disability.⁶ Also females report more severity of pain than males.⁷⁻⁹ Research also shows that women use more descriptors on McGill pain questionnaire when asked to describe their pain.¹⁰ The studies also show that men and women differs in their response to pain.^{7,10} Women shows greater sensitivity, risk for clinical pain and temporal summation than men.¹¹ Women shows greater analgesia than men in response to

mixed action in clinical studies.⁷ Although specific etiological basis of these differences are unknown, it is attributed to multiple biological and psychosocial processes.^{7,12,13} Biological basis provide the role of sex hormones and more number of receptors in nociceptor transmission pathway in women than men and presence of testosterone that is anti-nociceptive and protective in men may be one of the reason of less reporting of pain.¹⁴ Psychological factor has a greater role in differences of pain among different gender. It emphasis on difference in coping strategy where women are more enrolled in catastrophising of pain that is magnification of pain associated information leading to more pain and associated disability.¹⁵ Sociocultural process emphasis on the beliefs associated since birth that men are not meant to cry as they are strong and less willing to report their pain or express pain socially but it is acceptable for women.^{16,17}

Though the impact of gender on pain perception and sleep function is already a described topic but in the present era as men are equally participating in household activities along with their office work that put them in emotionally challenging situations. This raised the need to acknowledge the differences currently. We hypothesized that the females were prone to more pain perception and sleep dysfunctions. Males also have more incidence of similar complaints. Hence, the present study was aimed at evaluating the gender differences in pain description among chronic musculoskeletal pain population.

METHODS

The study was an exploratory research design in which 240 respondents having chronic musculoskeletal pain were interviewed for pain intensity, pain quality, pain history about onset, progression pattern and its impact on sleep quality and duration.

The study was conducted in Pandit Bhagwat Dayal Sharma University of Health Sciences, Rohtak from October 2021 to September 2022.

Inclusion criteria

The respondents who had pain intensity at least 4 on numerical pain rating scale and having pain for more than half of the day past 3 or more months were included in the study.

Exclusion criteria

The individuals if they had non-musculoskeletal cause that can be a reason of pain, presence of on acute infection and wound, having any acute injury or surgery within past 30 days and presence of any neurological disorder were excluded from the study.

Procedure

All respondents were interviewed through face to face structured interview schedule. After getting signed informed consent they were asked to provide a sociodemographic data and then detailed pain history including onset of pain, type of pain, location, duration of pain, intensity of pain and pattern of pain was obtained. To fulfil the purpose of the study, open-ended questions were asked about the description of pain to find out number of descriptors provided by males and females with chronic musculoskeletal pain. The respondents were also asked to rate the quality and duration of their sleep. Disability caused by pain and its impact on leisure activity, working capacity were noted on a 10 point scale. In order to rate the social component respondents were asked to rate the amount of family support they perceive on a scale of 10. The statistical calculation of the data was done with SPSS version 22. Ethical clearance was taken by Institutional Biomedical Research Ethical Committee of Pandit Bhagwat Dayal Sharma University of Health Sciences, Rohtak.

RESULTS

Descriptive statistics of the study population were obtained with SPSS version 22. Of the 240 respondents enrolled in study, 180 of the patients were female and 60 were male. There was no significant difference in mean age of males and females (46.72 ± 11.13). Most of the respondents were married (98.8%). There was a significant association of male gender and smoking with 70% of males reported smoking habits compared to only 6.1 percent of females. Educational status also had significant association with gender where 32.8% of the females were uneducated compared to 8.3 percent of the male respondents as presented in Table 1.

The respondents described their areas of pain on body diagram. The various pain areas of the respondents are shown in Table 2. Where 42.9% of the respondents reported multisite pain. There was no significant association between gender and multisite pain. 72.9% of the respondents had gradual onset of musculoskeletal pain. The number of descriptors used by respondents were recorded. Table 3 shows number of words used by respondents. The results showed that 43.3% of the males used only two descriptors compared to 28.9% of females.

The sleep function of respondents was assessed on parameters of sleep disturbance, sleep quality and sleep duration. Table 4 shows significant association between females having musculoskeletal pain with sleep disturbance and sleep quality. The pain intensity and disability caused chronic musculoskeletal pain was measured on 0 to 10 pain scale. The influence of pain on working capacity and leisure activities were also recorded and whether the respondents got family support was also obtained as showed in Table 5.

Table 1: Participant descriptive information.

Variables	Male	Female	Chi-square value	P value
Age (years)	48.06±11.23	46.27±11.13		
Marital status				
Unmarried	2	1	2.813	0.15
% within gender	3.3	0.6		
Married	58	179		
% within gender	96.7	99.4		
Smoking habit				
No	18	169	1.068	0.00*
% within gender	30	93.9		
Yes	42	11		
% within gender	70	6.1		
Education				
No school	5	59	18.585	0.002*
% within gender	8.3	32.8		
Primary	5	14		
% within gender	8.3	7.8		
Middle	8	21		
% within gender	13.3	11.7		
Matric	12	34		
% within gender	20	18.9		
Senior secondary	8	22		
% within gender	13.3	12.2		
Graduation or more	22	30		
% within gender	36.7	16.7		

Table 2: Body diagram based area of pain.

Site	Male	Female
Neck	6	29
% within gender	10	16.1
Shoulder	11	35
% within gender	18.3	19.4
Elbow	9	15
% within gender	15	8.3
Wrist	8	12
% within gender	13.3	6.7
Upper back	4	6
% within gender	6.7	3.3
Lower back	28	71
% within gender	46.7	39.4
Hip	12	28
% within gender	20	15.6
Knee	24	86
% within gender	40	47.8
Ankle and foot	14	50
% within gender	23.3	27.8

Table 3: Number of descriptors used by respondents.

No. of descriptors	Male	Female	Chi-square value	P value
	N (%)	N (%)		
Up to 2	28 (46.7)	58 (32.2)	4.083	0.043
More than 2	32 (53.3)	122 (67.8)		

Table 4: Impact of pain on sleep function.

Parameters	Males	Female	Chi-square value	P value
Sleep disturbance				
Yes	17	104	15.607	0.00*
% within gender	28.3	57.8		
No	43	76		
% within gender	71.7	42.2		
Sleep quality				
1 (worst)	5	21	11.414	0.010*
% within gender	8.3	11.7		
2 (bad)	10	68		
% within gender	16.7	37.8		
3 (somewhat good)	33	68		
% within gender	55.0	37.8		
4 (very good)	12	23		
% within gender	20.0	12.8		
Total	60	180		
Sleep duration (hr)				
1 (<5)	6	32	7.307	0.063
% within gender	10.0	17.8		
2 (5-6)	12	58		
% within gender	20.0	32.2		
3 (6-7)	30	65		
% within gender	50.0	36.1		
4 (>7)	12	25		
% within gender	20.0	13.9		
Total	60	180		

Table 5: Impact of pain various functional capacities.

Variables	Male (mean±SD)	Female (mean±SD)	t-test score	P value
NPRS	6.65±1.25	7.28±1.24	3.397	0.001*
Disability	6.43±1.78	6.91±1.41	2.117	0.035*
Working capacity	6.50±1.97	6.97±1.58	1.895	0.059
Family support	7.36±2.32	6.70±2.60	1.747	0.082
Leisure activities	4.88±2.15	5.17±2.27	0.878	0.381

DISCUSSION

The present study explored the differences that how males and females describe their pain and sleep functions. In the present study the patients with chronic musculoskeletal pain were randomly selected from a tertiary care outpatient department. The results of the study were supported by previous literature along with some differences and showed that females predominated the sample. This may be due to the fact that musculoskeletal pain conditions are more common in females than in males. The reviews on clinical studies on pain supported this finding and concluded that pain was more commonly reported by females than males.^{6,7} The demographic characteristics showed that mean age of patients reporting chronic musculoskeletal pain was in late forties for both males and females. A significant

association of smoking was observed with male gender. This could be explained on the fact that culturally in this region hukka smoking was a common practice among rural males. The education level also showed that more females were uneducated as compared to males.

The patients described the site of pain on a body diagram and all the sites with chronic pain were recorded. Among female knee pain was most prevalent followed by low back pain. Low back pain was the leading cause of musculoskeletal pain among males. A recent systematic review of clinical studies supported our results and concluded that women have higher prevalence of knee osteoarthritis and clinical pain.¹⁸ Epidemiological studies from Indian population showed low back pain to be the most prevalent followed by knee pain.^{19,20}

The patients were asked to describe their pain in terms of quantity and quality. In the present study women reported a higher intensity of pain on NPRS and used more descriptors for their pain as compared to males. The findings were similar to those of Rau et al 2018 and Strong et al 2009.^{1,10} The gender differences in pain were attributed to a variety of factors in literature including biological, psychological and sociocultural factors. Influence of sex hormones had been attributed for pain related variability among gender.¹⁴ Psychological mechanisms including pain coping strategies and self-efficacy have been attributed to pain related differences between men and women.^{15,21} Pain expression was also linked to socio-cultural factors and it was more socially acceptable for females than males to express pain.

The subjective information regarding the impact of pain on sleep function, disability and level of perceived family support were also obtained. Females showed a significant association of sleep disturbances with chronic musculoskeletal pain. 37.8% of females reported bad sleep quality as compared to only 16.7% of males. Sleep disruption is one of the most common co-morbidity reported in patients with chronic pain.²² Females usually report greater sleep problems, such as insomnia and poorer sleep quality as compared to males.^{23,24} Though there was significant association of bad sleep quality with gender no such association was observed in sleep duration and gender.

Although significant difference was seen in disability level among males and females, no significant association was observed between their working capacity and involvement in leisure activity.

The present study provided an insight on how different gender describe their pain. The significant difference in pain intensity and use of more descriptors by females shows the impact of gender on subjective description of pain which may be attributable to a variety of factors. The more disruption of sleep function due to musculoskeletal pain in females is an additional finding of the present study.

The present study had some limitations. The study included heterogeneous groups of diagnosis and conditions causing musculoskeletal pain. It would be interesting to note whether such association will be observed in patients with similar conditions. Also, it would be interesting to explore the descriptors of pain used by different gender.

CONCLUSION

The present study concludes that females report greater pain intensity and use more number of descriptors to report their pain. In addition there is higher impact of musculoskeletal pain on sleep quality in females than in males.

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Ethical approval: The study was approved by the Institutional Ethics Committee

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