# Occurrence and predisposing factors of musculoskeletal pain among female nursing officers

**Miss. Belagali Daneshwari Mahadev[1], Mrs. Vanitha U B[2], Dr.Deelip S Natekar[3]**

[1]M.Sc. Nursing Final Year,

[2]Assistant professor, Department of Medical-Surgical Nursing,

[3]Principal, (Ph. D. Nursing), Shri B.V.V.S Sajjalashree Institute Of Nursing Sciences,

Bagalkot, Karnataka,India.

Email: vanitha2695@gmail.com Mobile no: 9741670884

## ABSTRACT

A study goal was to assess the occurrence and predisposing factors of musculoskeletal pain among Female Nursing Officers at HSK Bagalkot and to find out the association between the occurrence and predisposing factors of musculoskeletal pain among Female Nursing Officers with their selected sociodemographic variables at HSK Bagalkot.  The study was conducted with the following objectives; to assess the occurrence and predisposing factors of musculoskeletal pain among Female Nursing Officers and to find out the association between the occurrence and predisposing factors of musculoskeletal pain among Female Nursing Officers with their selected socio-demographic variables. The study design was quantitative evaluative approach, Descriptive in nature and the samples were selected by purposive sampling technique, included 100 female nursing officers who are at risk of  developing the musculoskeletal pain at HSK Hospital Bagalkot. Data was collected using a Nordic Musculoskeletal questionnaire and self-constructed questionnaire & analyzed using descriptive and inferential statistics.  The majority samples were having occurrence of pain in the Hips (97%) and minimum pain in neck region (73%).The calculated chi-square values for the occurrence items like neck pain, shoulder pain, wrist/hands, upper back, hips, knees, ankles, or feet are greater than the Chi square table value indicates that there was significant association found between the occurrence items with predisposing factors $P<0.05$.  This study will be helpful for the nursing administrator in order to prepare for providing the quality care, to know the work burden of female nursing officers and its related complications.

**Key Words:** Female Nursing Officers, Musculoskeletal Pain, Nordic Musculoskeletal Pain Questionnaire, Occurrence, Predisposing Factors.

## Introduction

The human locomotor system gives the ability to do the activity. The primary functions include upholding the body, aids in movement, and defending essential organs of body. This system shapes, supports, stability, and movement to the body.[1]

Pain is a distressing feeling and it is an irritating sensory and psychological experience related with, real or likely tissue damage. In medical diagnosis, pain is regarded as a symptom of a basic primary condition.[2]

Pain that ends for greater than 3 to 6 months is called chronic pain. The quality of the pain can change depends upon its position.[3]

Chronic musculoskeletal pain is a major general health issues influence of about one third of the adult population. Antidepressants and anticonvulsants could be of value in some patients but there is a need for more knowledge in order to give general recommendations.[4]

Two methodological reviews cited poor patient portable techniques, physical complexion of the job, more repetition, and difficult postures as factors connected to Musculoskeletal Disorders (MSDs).[5]

Assessment of MSDs is based on self-reports of symptoms and pain as well as physical assessment by a doctor A approved measure of MSDs is the Nordic Questionnaire that has a picture of the body with many areas.[6]

Pain control is feature of medicine and health care requiring reassurance of pain (pain regulation) in numerous measurements. Its controlling does not every time mean total elimination of all pain. Rather, it many times means accomplishing more quality of life in the presence of pain, through any union of lowering the pain and better appreciate it and being able to live happily despite it.[7] Pain control is a branch of medicine that uses an interdisciplinary approach for aiding suffering and upgradingthe quality of life. Effective pain management does not mean total elimination of all pain.[8]

## Materials &Methods:

A non-experimental research approach and descriptive study design was adopted to assess the occurrence and predisposing factors of musculoskeletal pain among female nursing officers working in HSK hospital Bagalkot. The socio-demographic variables were Age, Gender, Religion, and Income of Family, Education Status, and Sources of Knowledge, Diet, and Lifestyle Etc. Hypotheses stated were

$H_1$: There is a significant association between the occurrence of musculoskeletal pain and predisposing factors among Female Nursing Officers.

$H_2$: There is a significant association between the occurrence and predisposing factors of musculoskeletal pain with their socio-demographic factors among Female Nursing Officers.

The present study was conducted on female nursing officers at HSK hospital of Bagalkot with a sample of 100 by using a purposive sampling technique. The formal permission was taken from the institutional ethical board & medical superintendent of HSK hospital. Stastical analysis was done on basis of descriptive and inferential statistics: mean, and standard deviation, to check the chi-square test was used.

## RESULTS:

**Table No.1 Description of Frequency and Percentage of Socio- Demographic Variable**

| Socio- demographic variables | Description | Frequency & Percentage |
|---|---|---|
| **Age** | 25-35 | 90 |
| | 35-45 | 6 |
| | 45-55 | 2 |
| | 55& above. | 2 |
| **Religion** | Hindu | 80 |
| | Muslim | 20 |
| | Christian | 0 |
| | Others | 0 |
| **Educational status** | GNM | 5 |
| | BSc nursing | 5 |
| | PBBSc Nursing | 90 |
| | MSc nursing | 0 |
| **No of children** | One | 10 |
| | Two | 9 |
| | Two or more | 0 |
| | None | 81 |
| **Family history** | Yes | 29 |
| | No | 71 |
| **Knee Injury history** | Yes | 5 |
| | No | 95 |

The Occurrence of Musculo skeletal pain among nursing officers are high in **hip area** compared to the other parts.

| Items | Yes | Percentage | No | Percentage |
|-------|-----|------------|-----|------------|
| Neck pain | 73 | 73% | 27 | 27% |
| Shoulder pain | 82 | 82% | 18 | 18% |
| Elbow pain | 94 | 94% | 06 | 6% |
| Wrist/hands pain | 86 | 86% | 14 | 14% |
| Upper back pain | 81 | 81% | 19 | 19% |
| Lower back pain | 77 | 77% | 23 | 23% |
| Hips pain | 97 | 97% | 03 | 3% |
| Both knees | 89 | 89% | 11 | 11% |
| Ankles or feet | 93 | 93% | 07 | 07% |

**Fig: 1: Percentage wise distribution of Female nurses occurrence of pain in different areas of body region.**
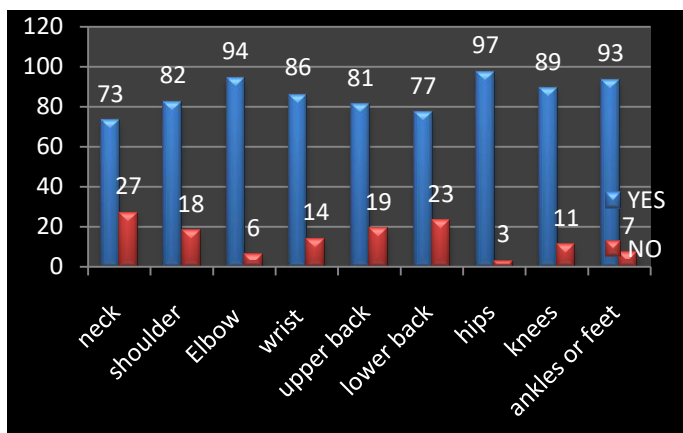


The above-mentioned diagram reveals that Percentage distribution of female nurses Occurrence of pain in different areas of body region. The majority of occurrence of pain in Hips(97%) and minimum pain in neck region (73%). The shoulder (82%), elbow(94%), wrist(86%), upper back (81%), lower back (77%),knees(89%), ankles or feet (93%).

**Table 3 Reveals that Mean and SD of Nordic questionnaire on musculoskeletal pain Association between the Occurrence and Predisposing Factors of Musculo Skeletal Pain among Nursing Officers**. [*]Significant

| Sl. No | Items | MEAN | SD |
|---|---|---|---|
| 1 | Neck pain | 0.26 | 0.4423 |
| 2 | Shoulder pain | 0.18 | 0.18 |
| 3 | Elbow pain | 0.06 | 0.06 |
| 4 | Wrist/hands pain | 0.14 | 0.14 |
| 5 | Upper back pain | 0.19 | 0.19 |
| 6 | Lower back pain | 0.23 | 0.23 |
| 7 | Hips pain | 0.03 | 0.03 |
| 8 | Both knees | 0.11 | 0.11 |
| 9 | Ankles or feet | 0.07 | 0.07 |

| l no | Questionnaires of Occurrence with predisposing factors | DF | Chi-square observed value | Chi square Table value | Observed p value |
|---|---|---|---|---|---|
| 1 | Neck pain | 1 | 5.5556 | 3.84 | 0.18422[*] |
| 2 | Shoulder pain | 1 | 17.1733 | 3.84 | 0.00034[*] |
| 3 | Elbow pain | 1 | 0.5851 | 3.84 | 0.444314 |
| 4 | Wrist/hands pain | 1 | 6.0076 | 3.84 | 0.014244[*] |
| 5 | Upper back pain | 1 | 8.3326 | 3.84 | 0.00389[*] |
| 6 | Lower back pain | 1 | 3.0303 | 3.84 | 0.0817 |
| 7 | Hips pain | 1 | 6.5934 | 3.84 | 0.10236[*] |
| 8. | Both knees | 1 | 4.2624 | 3.84 | 0.38965[*] |
| 9. | Ankles or feet | 1 | 4.2627 | 3.84 | 0.38965[*] |

The table-4 reveals that the calculated chi-square values for the occurrence items like neck pain, shoulder pain, wrist/hands, upper back, hips, knees, ankles or feet are 5.5556, 17.1733, 6.0076, 8.3326, 6.5934, 4.2624 and4.2627 respectively. The Chi square table value is 3.846.

Hence there was significant association found between the above said selected occurrence items with predisposing factors P<0.05.

**Association between occurrence of musculoskeletal pain among female nursing officers with their selected socio-demographic variables**

**Occurrence .**      *Significant                                    **N = 100**

| Sl no | socio-demographic variables | DF | Chi-square | Table value | Observed p value | P value |
|---|---|---|---|---|---|---|
| 1 | Age | 1 | 0.284 | 3.84 | 0.593 | 0.05 |
| 2 | Religion | 1 | 0.0901 | 3.84 | 0.763 | 0.05 |
| 3 | Educational status | 1 | 1.442 | 3.84 | 0.229 | 0.05 |
| 4 | No of children | 1 | 4.077 | 3.84 | 0.434 | 0.05* |
| 5 | Family history | 1 | 1.289 | 3.84 | 0.256 | 0.05 |
| 6 | History of high heel footwear | 1 | 0.017 | 3.84 | 0.8938 | 0.05 |
| 7 | History of knee injury | 1 | 0.303 | 3.84 | 0.581 | 0.05 |

The calculated chi-square values for the socio-demographic variables like Age, Religion, Educational qualification, ,Family History, History of high heel foot wear and History of knee injury, aree 0.284, 0.0901, 1.442,1.289, 0.017, and 0.303  respectively. This indicates that there was no significant association found between the above mentioned selected socio demographic variables with occurrence of Musculo skeletal pain among female nursing officer P<0.05.hence the $H_2$is rejected.

The calculated chi-square values for the socio-demographic variables are no of children   is 4.077. The Chi square calculated value is higher than the Chi square table value, hence it shows that  significant association  between the above said selected socio-demographic variables with occurrence of Musculo skeletal pain among female nursing officer  as P<0.05, ,**$H_2$**is accepted for above mentioned socio-demographic variables.

**Association between predisposing factors of musculoskeletal pain among female nursing officers with their selected socio-demographic variables**

**Predisposing factors**      *-Significant   **N=100**

| Sl no | socio-demographic variables | DF | Chi-square | Table value | Observed p value | P value | Association |
|---|---|---|---|---|---|---|---|
| 1 | Age | 1 | 1.74 | 3.84 | 0.18 | 0.05 | Not significant |
| 2 | Religion | 1 | 1.72 | 3.84 | 0.189 | 0.05 | Not significant |
| 3 | Educational status | 1 | 1.31 | 3.84 | 0.25 | 0.05 | Not significant |
| 4 | No of children | 1 | 5.54 | 3.84 | 0.185 | 0.05 | **Significant**[*] |
| 5 | Family history | 1 | 0.85 | 3.84 | 0.354 | 0.05 | Not significant |
| 6 | History of high heel footwear | 1 | 1.31 | 3.84 | 0.252 | 0.05 | Not significant |
| 7 | History of knee injury | 1 | 0.62 | 3.84 | 0.43 | 0.05 | Not significant |

 The table-6 shows that the calculated chi-square values for the socio-demographic variables like Age, Religion, Educational qualification, Family History, History of high heel foot wear and History of knee injury, are 1.74,1.72,1.31,0.85,1.31,and 0.62 respectively. This indicates that there was no significant association found between the above said selected socio demographic variables with predisposing factors of Musculo skeletal pain among female nursing officer,  P<0.05. hence the **H$_2$**- is rejected for above mentioned socio-demographic variables.

    The calculated chi-square values for the socio-demographic variables are no of children   is 5.54.  This indicates there was a significant association found between the above said selected socio-demographic variables with predisposing factors of Musculo skeletal pain among female nursing officer. P<0.05, Hence, **H$_2$**-is accepted for above mentioned socio-demographic variables.

## Discussion

### 1. Demographic profile of adolescents.

The majority (90%) of female nursing officers with the age 25 - 35 years, (80%)were Hindu. Majority were with single child and (71%) were didn't had any kind of family history of Musculoskeletal pain, The majority (90%) of Female nurses had a habit of wearing of high heel foot wear and (95%) are not having previous history of knee injury.

**Assessment of occurrence of Musculoskeletal pain among female nursing officers. In different areas of body region.**

The majority of occurrence of pain in Hips (97%) and minimum pain in neck region (73%).

**Association between occurrence of musculoskeletal pain and predisposing factors among female nursing officers.**

The calculated chi-square values for the occurrence items like neck pain, shoulder pain, wrist/hands, upper back, hips, knees, ankles, or feet are 5.5556, 17.1733, 6.0076, 8.3326, 6.5934, 4.2624 and4.2627 respectively. The Chi square calculated values are greater than the Chi square table value. This indicates that there was significant association found between the above said selected occurrence items with predisposing factors P<0.05.

The calculated chi-square values for the occurrence items like elbow pain, lower back pain 0.5851 and 3.0303 respectively. This indicates that there was no significant association found between the above said selected occurrence items with predisposing factors P>0.05.

### 2. Association between occurrence of musculoskeletal pain among female nursing officers with their selected socio demographic variables

The calculated chi-square values for the socio-demographic variables likeAge, Religion, Educational qualification,Family History, History of high eel foot wear and History of knee injury, aree 0.284, 0.0901, 1.442,1.289, 0.017, and 0.303 respectively. Hence the Chi square calculated values are lesser than the Chi square table value(3.846). This indicates that there was no significant association found between the above said selected socio demographic variables with occurrence of Musculoskeletal pain among female nursing officer. P<0.05.

The calculated chi-square values for the socio-demographic variables are no of children is 4.077. There was a significant association found between the above said selected socio-demographic variables with occurrence of Musculo skeletal pain among female nursing officer. P<0.05

**Association between predisposing factors of musculoskeletal pain among female nursing officers with their selected socio-demographic variables**

The calculated chi-square values for the socio-demographic variables like Age, Religion, Educational qualification,Family History, History of high heel footwear and History of knee injury, are 1.74,1.72,1.31,0.85,1.31,and 0.62 respectively. Hence the Chi square calculated values are lesser than the Chi-square table value. This indicates that there was no significant association found between the above said selected socio demographic

variables with predisposing factors of Musculo skeletal pain among female nursing officer. P<0.05.

The calculated chi-square values for the socio-demographic variables are no of children is 5.54. Hence the Chi square calculated values are higher than the Chi square table value. This indicates there was a significant association found between the above said selected socio-demographic variables with predisposing factors of Musculo skeletal pain among female nursing officer. P<0.05.

## Conclusion.

The Occurrence of Musculo skeletal pain in different areas of body region are the majority of occurrence of pain in Hips (97%) and minimum pain in neck region (73%). The shoulder (82%), elbow (94%), wrist (86%), upper back (81%), lower back (77%), knees (89%), ankles or feet (93%). The calculated chi-square values for the occurrence items like neck pain, shoulder pain, wrist/hands, upper back, hips, knees, ankles, or feet are 5.5556, 17.1733, 6.0076, 8.3326, 6.5934, 4.2624 and4.2627 respectively. The Chi square table value is 3.846. Hence the Chi square calculated values are greater than the Chi square table value. This indicates that there was significant association found between the above said selected occurrence items with predisposing factors P<0.05. Recommends study findings can be repeatedly used in different places of the states or nations so as to compare the results. A study can be replicated on a large sample to generalize the findings, conducted by including additional demographic variables and by using different methods of teaching

## References;

1.Human musculoskeletal system,12 November 2008, available from: https://en.m.wikipedia.org/wiki/Human_musculoskeletal_system.

2.Raja, Srinivasa N, Daniel B, Cohen, et al. Pain, 21 July 2020 available from: https://en.m.wikipedia.org/wiki/Pain.

3.Watson S, Musculoskeletal Pain, 5 August 2020. available from: https://www.healthline.com/health/tgct/musculoskeletal-pain#causes.

4. StefanBergman, Best Practice & Research Clinical Rheumatology
Volume 21, Issue 1, February 2007, Pages 153-16

5. Ellapen T, Narsigan S, Work-related musculoskeletal disorders among Female Nursing Officers, systematic review J Ergon 2014; Available from: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5960155/#:~:text=Introduction,

Work%2Drelated%20musculoskeletal%20disorders%20(WMSDs)%20are%20a%20common%20cause,13%2C%2016%2C%2017%5D.
6. Kuorinka, I.; Jonsson, B.; A, et.al. (1987), "Standardized Nordic questionnaires for the analysis of musculoskeletal symptoms" Applied Ergonomics18 (3): 233–7. Doi:10.1016/0003-6870(87)90010-x. PMID 15676628. Available from: https://en.m.wikipedia.org/wiki/Musculoskeletal_disorder.
7. From Wikipedia, Available from: https://en.wikipedia.org/wiki/Pain_management8.