

Work Related Musculoskeletal Disorders and Associated Factors among Nurses Working in Jimma Zone Public Hospitals, South West Ethiopia

Tilahun Mekonnen Regassa^{1*}, Tefera Belachew Lema² and Gugsa Nemera Garmomsa³

¹Department of Nursing, Mizan Aman, Mizan Tepi University, Ethiopia

²Department of Population and Family Health, Jimma University, Jimma, Ethiopia

³Department of Nursing, Jimma University, Jimma, Ethiopia

***Corresponding author:** Tilahun Mekonnen Regassa, Department of Nursing, Mizan Tepi University, Mizan Aman, Ethiopia, Tel: +251913655772; E-mail: tilahunmekonnen69@yahoo.com

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Abstract

Background: Musculoskeletal disorders represent a significant occupational problem among nurses; however, there is paucity of information on work related musculoskeletal disorder among nurses in Ethiopia.

Objective: To assess work related musculoskeletal disorders and associated factors among nurses working in Jimma Zone Public hospitals, South west Ethiopia.

Methods: Institutional based cross-sectional study was conducted in Jimma Zone public hospitals from March

paid to workers and medical expenses [10]. In 2002, about 1.24 billion dollars paid out for work-related injuries, 40% of which

Operational Definition

Work-related musculoskeletal disorders

In this study WMSD refers to self-reported pain or discomfort at least once in the last one year work or following work by nurses in one or more of the following body regions : Low back, Neck, Knees, Upper back, Wrists/Hands, Shoulder, Ankles/Feet, Elbow and

Mal-positions

Inappropriate working postures like awkward and cramped position that nurses may use during work (nursing care).

Data entry and analysis procedures

data were entered into Epi-Data version 3.1 and then exported to SPSS version 21.0 for analysis. Percentage, Frequency, mean and standard deviation were calculated. Binary logistic regression analysis was done to see the association between the predictor and the outcome variable (WMSD). variables with P-value <0.25 in bi-variable logistic regression analysis were included in multivariable logistic regression analysis. P value less than 0.05 was considered. An odds ratios with 95% intervals was used to examine associations between dependent and independent variables.

Ethical Consideration

Ethical clearance and approval letter to conduct study was obtained from Jimma University Collage of Health Sciences, Institutional

Review Board to communicate with Hospitals administrative body in Jimma zone. Permission letter was obtained from administrative body of each hospital. study has no risk and exceptional. Finally ensuring that the study has no risk and informing its verbal consent was obtained from the subjects included in the study immediately before the distribution of questionnaire. research assistants were trained by the principal investigators on how to keep the and anonymity of the responses of the respondents (nurses' information) in all aspect. right of the respondents to refuse answer for few or all of the questions was respected.

Results

Characteristics of the study participants

hundred thirty three questionnaires were distributed, and 301 nurses returned questionnaires which makes response rate of 90.4%. reasons for non-response were refusal and heavy workloads. Among the participants, majority 253 (84.1%) were working at JUTH, 168 (89%) were in the age group between 20-29 years, 159 (52.8%) were males, and 180 (59.8%) were single. Regarding the educational status, 178 (59.1%) were Diploma Nurses and their mean salary was 2402.2 ± 871.7EB. Among the respondents, 277(92%) were non-obese (BMI<25 kg/m²), while only 24 (8%) were obese (BMI>25 kg/m²) (Table 1). Regarding the life style of respondents, 282(93.7%) were not smoker and 226 (75.1%) not drink alcohol. Out of 301 respondents, 137 (45.5%) were engaged in type of physical exercises.

		Frequency (n=301)	%
Sex	Male	159	52.8
	Female	142	47.2
Age	20-29	268	89
	30-39	16	5.3
	>40	17	5.6
Marital status	Married	119	39.5
	Single	180	59.8
Educational Qualification	Diploma in Nursing	178	59.1
	Bachelor degree in Nursing	120	39.9
	Master's degree in Nursing	3	1
Salary	<1800 EB	79	26.2
	1800-2350 EB	78	25.9
	>2350 EB	144	47.8
Organization	JUSH	253	84.1
	Shenen Gibe	16	5.3
	Limu Genet	17	5.6

	Agaro	15	5
Body mass index	<25(non-obese)	277	92
	>=25(obese)	24	8

Table 1: Socio-Demographic Characteristics of nurses working in Jimma Zone public Hospital, South West of Ethiopia March, 2015

Prevalence of work-related musculoskeletal disorders

From the 301 respondents, 183 (60.8%) of them experienced WMSD at least in one body region during the last 12 months.

highest 12-months prevalence of WMSD was reported in the lower back (67.8%), followed by the neck (24.0%) and knees (23.6%), but least in the Elbow /forearm (2.7%) (Table 2).

Body region	Frequency(n=183)	Percentage (%)
Lower back	124	67.8
Neck	44	24
Knees	43	23.6
Ankles/Feet	36	19.7
Hips/Thighs	29	15.8
Upper back	28	15.3
Shoulder	26	14.1
Wrist/hand	13	7.1
Elbow /forearm	5	2.7

Table 2 Body region and work related musculoskeletal disorders among nursing professionals working in Jimma Zone public Hospitals, Murch, 2015

Of all of the 183 respondents that indicated WMSDs, 76 (41.5%) reported that they had treated themselves or had sought treatment from other health practitioners for WMSDs and 26.2% of them reported that they have changed their working unit due to WMSD. Highest percentage of the respondents (67.4%) experienced their episode of WMSDs in the 5-15 years of clinical practice, and 14.9% during 5-15 years of nursing practice.

and 10% at the Pediatrics ward. Majority (90%) of the respondents were nurses in position while 78.1% had 1-5 years of experience. Two hundred thirty two (77.1%) had no previous occupation and only 38 (12.6%) of them had part time job or they had done another clinic/hospital outside their normal mean number of hours per week they had done was 52.29± 12.95. Majority 190 (63.1%) of the respondents worked in mixed (day and night) (Table 3).

Work history

Concerning Working Unit, 21.9% of the respondents were working at the surgical ward, 11.3% at the OPD, 11.0% at OR, 10.6% at Medical

Work related characteristics	Frequency (n=301)	%	
Working Unit	Medical ward	32	10.6
	Surgical Ward	66	21.9
	Pediatrics ward	30	10
	Neonatology ward	9	3
	ICU	16	5.3
	OR	33	11
	Recovery room	2	0.7

Work Experience in Nursing

OPD	34	11.3
Psychiatry	9	3
Ophthalmology	6	2
Obstetrics and gynecology ward	15	5
chronic illness	5	1.7
TB and ART clinic	9	3
MCH	8	2.7
Dental clinic	10	3.3
Other*	16	5.3
5-Jan	235	78.1
10-Jun	45	15
15-Nov	3	

Wound dressing	122	40.5
Administering medication	62	20.6

long period working in mal-position giving care for disoriented
giving wound care working unit working in the same position

disorders in last one year. It is interesting to note that the
nurses who had experienced work related musculoskeletal

consequences of musculoskeletal injuries include job change, job loss
and chronic pain [27]. WMSDs are preventable by educating the
about the use of proper body mechanics and modifying the work
environment. Adjust the height of working surfaces to reduce long
reaches and awkward postures, reduce the weight and size of items that
workers must lift and provide mechanical equipment which are
the recommendations made by OSHA (2000) to prevent MSDs [28].

may represent the real nursing activities that may impose nurses to
the risk of WMSDs. However; as a weakness of the study, we consider
that nurses may under report or may exaggerate the pain and
discomfort following nursing activity. On the other hand, it is very

In this study some risk factors of WMSDs were Perceived
job risk factors like working in mal-position, working in the same
position for long time and bending or twisting the back during work
were among the top risk factors. This shows that the nurses used improper
work posture during their nursing activities. This is similar with the
study in Iran [20] and India [22]. The study conducted in Nigeria [17]
also indicated that working in the same position for prolonged time is
associated with WMSDs and the study in Brazil by Foncica [10] shows
poor posture of the back during work is associated predictors for
WMSDs. Nursing activities like transferring dependent
patients and giving wound care were also the top risks. Similarly
the study conducted in Nigeria [17] and India [22] indicated
and transferring dependent patients was an associated factor
with WMSDs. All are not surprising because of poorly equipped
hospitals in the low income countries as they use patient manual
handling and shortage of equipment while in high income countries nurses
use mechanical equipment like sliding sheets, hoists, and
slings etc. for patient handling [28-31]. A reason for this was found in
the response of the nurses when 74.4% of the nurses stated that there is
not available material for patient handling and only (29.9%) of
respondents had used work equipment always during their nursing
activities. This means that they had been manually handling patients
(e.g. moving patients from and to bed, turning patients side to side,
repositioning patients, etc.). Majority (71.1%) of respondents in this
study also reported that their working environment is not conducive
which can be the reason for the working posture, working for
long time in the same position. Giving care for patients with wound
may also take long time and the work posture depending on
condition of working environment and type of wounds that can put
nurses on risk.

In this study the work unit was also considered as a risk for WMSDs;
medical ward and theatre/ICU were the top units. This is similar with all other
variables, which is similar with the study conducted on LBP in Nigeria
[29]. This might be due to nursing activities, patient condition and
the nature of works may vary in work units. Dependent patients (e.g.
unconscious patients in coma, patients with neurologic disorders,
patients on complete bed rest, etc.) who cannot assist or move
themselves or require the nurses to care for them totally are admitted
in the medical ward which put the nurses more at risk. Factors, like
bending and transferring bed bathing dependent patients,
etc. could be possible reasons why risk is high in the medical units.
Also in theatre ward nurses may stand for long period and close
monitoring and working with critically ill patients in Intensive care
unit may put nurses on risk. Working with disoriented patient was also
considered as a risk in all study units. This is obvious at
not co-operating with nurses during giving patient

Mis might be due to the type of patients assigned to
nurses assigned working unit.

As any other cross-section study, study has strength and
limitation. It is the first of its kind to report self-reported WMSDs
among nurses in Ethiopia. In addition to that the study was conducted
in the zone which consists both teaching and district hospitals that

