Nursing practice on Non-Pharmacological Pain Management in Ethiopia, 2017

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Abstract

Purpose: To assess nursing practice on non-pharmacological pain management and its associated factors in health institutions in North West, Ethiopia, 2017.

Methodology: An institution based cross-sectional study was conducted among 583 randomly selected nurses from 10th April 2017 to 10th May 2017. A pre-tested, structured and self-administered questionnaire was used. Multivariable logistic regression was employed to determine predictors of the outcome variable. P-value <0.05 at 95% confidence interval was considered as significant.

Results: About 64% of the nurses had a satisfactory level of practice in the thermal regulation application, but on the rest types of non-pharmacological pain management, nurses had an unsatisfactory level of practice. Age, level of education, years of experience and having previous class on non-pharmacological pain management were the main determinants of nurses' practice of non-pharmacological pain management in multivariable logistic regression model. Therefore, this study concludes that many factors were interwoven to affect nursing practice on non-pharmacological pain management which intern needs multi-sectorial collaborations.

Keywords

Nurse; Practice; Non-pharmacological; Pain management; Ethiopia

Abbreviations

AOR: Adjusted Odds Ratio; CSA: Central Statistical Agency; CI: Confidence Interval; ENA=Ethiopia Nursing Association; JCAHO: Joint Commission on Accreditation of Healthcare Organizations; TENS: Trans-Electrical Nerve Stimulation

Introduction

Pain is unpleasant sensory and emotional experience associated with actual or potential tissue damage. Pain is always subjective and has both physical and emotional components [1,2]. There are three types of pain based on location: somatic, visceral and neuropathic [3].

Pain management is the relive of pain or reduction in pain to a level that is acceptable to the client. It includes two basic types of nursing interventions: these are pharmacological and non-pharmacological [4]. Non-pharmacological or complementary therapies do not involve taking medicines. But it includes cognitive behavioral therapy, relaxation therapy, biofeedback, patient education, self-management, and social support interventions [2,5,6]. Pain is experienced by 30% to 50% of cancer patients receiving treatment and by 70% to 90% of patients with metastatic or advanced diseases. Estimates of the incidence of pain in hospitalized cancer patients have been reported as high as 90% [7]. Most of the time drugs are prescribed to relieve the pain. However, pain is often under treated and patients continue to suffer from the ill effects of pain and lack of management [8]. Workload, lack of proper materials, lack of knowledge, perceptions of pain and lack of skill were the main reasons that prevented nurses from practicing non-pharmacological pain management therapies [9].

The experience of pain negatively influences the patient's daily life unless nurses give quality care based on the best available evidence to prevent patients from suffering harm [10,11]. To give quality nursing care; nurses require appropriate knowledge, attitudes and skills towards pain, pain assessment and its management. Nurse knowledge, attitude and skill affect the nurses' ability to effectively manage pain. They often the practice non-pharmacological methods to facilitate comfort for patients within the health care settings. However, guidelines for practice of these measures are commonly in adequate or absent [12,13]. In Ethiopian health care system, studies conducted so far are very limited and focused on pharmacological pain management and non-pharmacological pain management can be said underutilized. The practice of non-pharmacological or complementary therapies to treat pain is not studied widely. As a result, there is a need to understand the factors influencing the practice of such therapies in health care settings. Therefore, the purpose of this study was to assess nurses' levels of the practice of non-pharmacological pain management and its associated factors in Northwest Ethiopia, 2017.

Methods and Materials

Study setting, design and population

An institution based cross-sectional study was conducted in northwest Ethiopia in west gojam zone, which is 565km away from Addis Ababa, from 10th April 2017 to 10th May 2017. West gojam zone is bordered on the south by the Abay River, which separates it from the Oromia Region and Benishangul-Gumuz Region, on the west by Agew Awi, on the northwest by North Gondar, on the north by Lake Tana, and the Abay River which separates it from the South Gondar, and on the east by East Gojjam. West Gojjam has. Within the zone there are 18 woredas, 90 health centers and 4 hospitals.

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All nurses working in the west Gojjam public health institution where source population. All nurses who had working experience of 6 months and above at this heath institution were studying population, but nurses who were in annual and maternity leave were excluded from the study participants.

Sample size determination and sampling procedure

The sample size was calculated using single population proportion formula by considering the following assumptions; P (proportion of practice nurses) = 50% to get maximum sample size to represent the nurses, 95% level of confidence 95%, the level of significance = 5%, margin of error (d) =5% and 10% non- response rate.

Where:

n = the required minimum sample size

z = Level of confidence 95%, Zα/2 = 1.96

d = Margin of error, assumed to be 5%

P=proportion of practice

Therefore, $\frac{(1.96)^2(0.5)(1-0.5)}{(0.05)^2}$ =384

By considering the correction, the sample size was 265. Finally, by using 10% non-response rate and 2 design effects the sample size was 583.

First from 18 woreda within the zone 11 of them were selected by lottery method. All heath institutions were taken from the selected woreda. Proportional sample size allocation was used based on the number of nurses in the selected health institutions. Then, within each selected health facility, simple random sampling technique was applied to get individual nurse. Finally, self-administer questionnaire was distributed to each nurse.

Measurement

A structured self-administered questionnaire was used to collect data from nurses. The questionnaire was constructed by adopting from previous research done on similar topic and modified accordingly [14]. Five diploma nurses were recruited as data collectors and three Bachelor of Science nurses were recruited as supervisors. All data collectors and supervisors were oriented and trained on how to administered and check the data one day before the survey.

Operational definitions

Satisfactory level of practice: Those study participants who scored points equal to and more than 60% out of prepared practice questions.

Unsatisfactory level of practice: Those study participants who scored points less than 60% out of prepared practice questions

Data Quality assurance

Pre-test of the tool was performed outside the study area to readjust the questionnaire. Intensive training for data collectors was given for two days. Continuous supervision of data collection process was carried out to assure the quality of data. Finally, the collected data was carefully checked on a daily basis for completeness, outlier and missing value as well as consistencies.

Data analysis

The collected data were cleaned, coded and entered into Epi-info version 3.5.1 statistical software package. The statistical analysis was done using SPSS version 20. Frequency distribution of selected variables was performed. The statistical significance and strength of the association between independent variables and an outcome variable was measured by bivariate logistic regression model. A variable P value less than 0.25 was transferred to the multivariable logistic regression model to adjust confounders' effects and a p value less than 0.05 was considered as significantly associated with this model. Finally, the results of the study were presented using tables, figures and texts based on the data obtained.

Ethical Clearance

The study was approved by the Scientific, Ethical Review Committee of Addis Ababa University. West Gojam Zone health department wrote supportive letters. Written consent was obtained from nurses after a detailed explanation of the purpose of the study. Any involvement of the nurses was after their complete consent. Nurses were told as they would have the right to withdraw from the study at any time during participation.

Result

Socio-demographic profile

A total 544 respondents were participating in the study making the response rate of 93%. More than half of the respondents were females 289 (53.1%). A majority, 202 (37.1%), of respondents was in the age range of 21-29 years. Fifty-seven percent of nurses were married. Of all respondents, 460 (84.6%) and 84 (15.4%) of them were diploma and Baccalaureate holder respectively. Regarding to their years of experience, 429 (78.9%) of the nurses had 0-9 years of experience (Table 1).

Nurses' level of practice on types of non-pharmacological Pain Management

Among 544 participants of the study, 17% reported as they have never used non-pharmacological pain management methods. Patient preparation, massage, distraction, relaxation and environmental comfort were the most commonly practiced non-pharmacological pain management methods by nurses. Nurses listed many other non-pharmacological therapies that could be used to relieve pain like advice, helping activities of daily living and counseling on favorite food. About 64% of the nurses had a satisfactory level of practice in thermal regulation application. And the rest 58.3%, 57.6%, 55%, 54% and 53% had an unsatisfactory level of use in patient preparation, massage, distraction, relaxation and environmental comfort respectively (Figure1).

Barriers of nurses practice on non-pharmacological pain management

Of the total respondents, 90% have mentioned some form of barriers in using non-pharmacologic pain therapies. Barrier identified were lack of time (38.6%), patient unwillingness (32.5%), lack of equipment (13.1%) family/patient needs pill (9.9%) (Figure 2).

Factors associated with non-pharmacological pain management

In multivariable logistic regression, work experience, level of education, and non-pharmacological education were significantly associated with the nurses' practice of non-pharmacological methods. Nurses who had aged 21 and above 4.363 times more likely to practice than its counterparts (AOR=4.36, 95% CI: (1.738-10.948). Nurses who had work experience of 10-19 years 7.563 times more likely to practice than nurses who had work experience of 0-9years (AOR=7.563, 95% CI: (3.775-15.151). Similarly, nurses who had educational status of degree 1.28 times more likely practice than diploma level (AOR=1.28, 95%CI: (1.14, 2.50) (Table 2).

Variable	Response	Frequency (N)	Percentage (%)
Sex	Male	255	46.9
	Female	289	53.1
Age (years)	≤ 20	202	37.1
	21-30	63	11.6
	31-40	202	37.1
	41-50	99	18.2
	>50	55	10.1
Level of education	Diploma	460	84.6
	Degree	84	15.4
Work experience (in years)	≤ 9	429	78.9
	10-19	91	16.7
	20-29	24	4.4
	>29	0	0
Having class on non- pharmacological pain management	Yes	382	70.2
	No	162	29.8
Do you have pain assessment tool in your unit?	Yes	152	27.9
	No	392	72.1
Do you use pain assessment tool?	Yes	67	15.3
	No	85	15.6

Table 1: Socio-demographic characteristics of nurses in North West Ethiopia, 2017 (N=544).
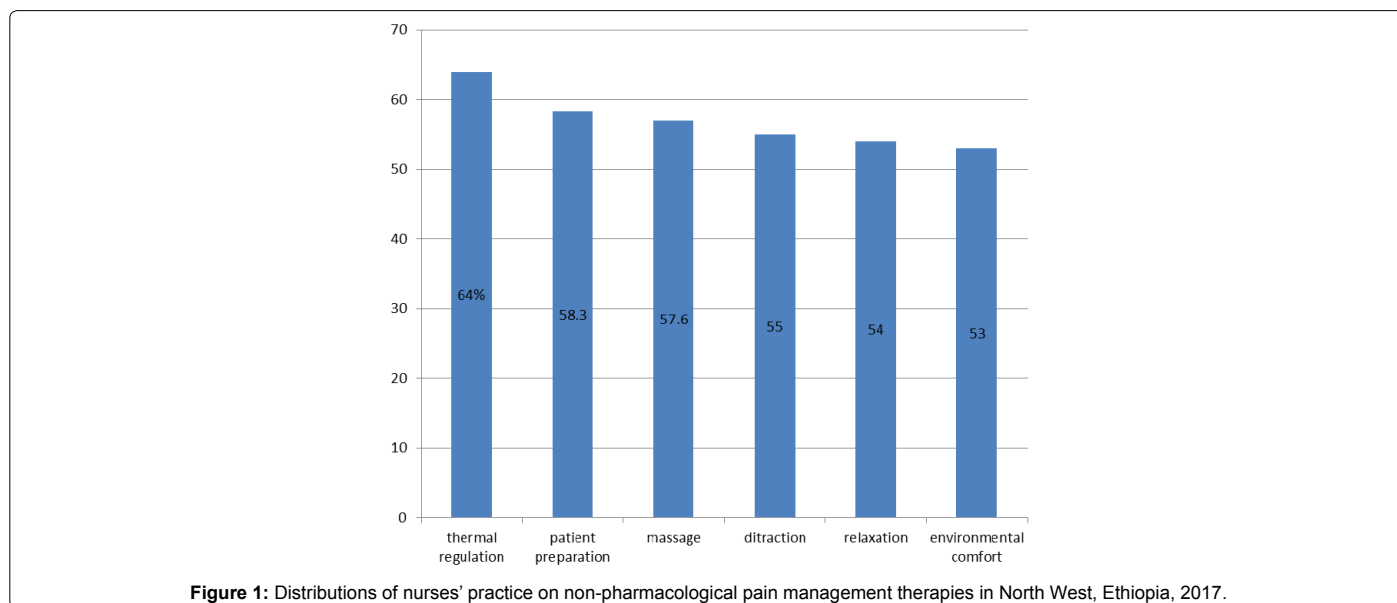

Figure 1: Distributions of nurses' practice on non-pharmacological pain management therapies in North West, Ethiopia, 2017.

Variables	Response	Nurses practice of non-pharmacologic pain management			
		Unsatisfactory	Satisfactory	COR (95%CI)	AOR (95%CI)
Age	≤20	48 (16.3)	15 (6.0)	1	1
	21- 30	125 (42.4)	77 (30.9)	1.97(1.03,3.76)	2.17(1.04,4.55)*
	31 - 40	59 (20.0)	66 (26.5)	3.58(1.82,7.05)	3.10(1.39, 6.93)*
	41- 50	38 (12.9%)	61 (24.5%)	5.14(2.53,10.42)	6.37(2.77,14.64)*
	>50	25 (8.5%)	30 (12.0%)	3.84(1.75,8.43)	4.36(1.74,10.95)*
Level of education	Diploma	236 (80.0)	224 (90.0)	1	1
	Degree	59 (20.0)	25 (10.0)	1.45(1.27,2.74)	1.28(1.14,2.50)*
Non-pharmacological pain management education	No	106(35.9%)	56(22.5%)	1	
	yes	189 (64.1%)	193 (77.5%)	1.933(1.321,2.829)	2.022(1.274, 3.210)*
Work experience	≤ 9	262 (88.8)	167 (67.1)	1	1
	10-19	24 (8.1)	67 (26.9)	4.38(2.64,7.26)	7.56(3.77,15.15)*
	20 -29	9 (3.1)	15 (6.0)	.615(1.12,6.11)	1.73(.59,5.08)
1= Reference; *= p–value <0.05(significant)					

Table 2: Factors associated with nurses' practice on non-pharmacologic pain management in North Ethiopia, 2017.
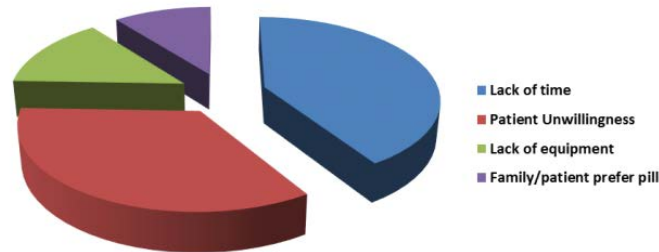
Figure 2: Barriers in nurses' practice on non-pharmacological pain management North West Ethiopia, 2017.

Discussion

This facility based cross-sectional study with the objective of the assessment of nurses' level of practice on non-pharmacological pain management and its associated factors was conducted in West Gojjam Zone public health institutes, North West Ethiopia. In this study, the prevalence of the practice of non-pharmacological pain therapies by nurses was 83%, which is incongruent with study done in BroMenn Regional Medical Center in which all of the participants have used non-pharmacologic pain therapies [11]. The difference might due to years of experiences, educational level and the resources available within the unit.

In this study, the most common non-pharmacologic pain therapies mentioned by nurses were heat/cold (73.2%), distraction (55%), change of position (54%) and Massage (53.7%). This study was nearly coincided with study done in BroMenn Regional Medical Center in which the most common non-pharmacologic therapies mentioned were change of position, massage, distraction, and heat/cold [10].

In this study, about (58.3%), (57.6%), (55%), (54%), and (53%) of nurses had an unsatisfactory level of practice in patient preparation, massage, distraction, relaxation, and environmental comfort respectively. And about (64%) had a satisfactory level in the thermal regulation application. The result is incongruent with a study done in Finland regarding thermal regulation and incongruent regarding patient preparation and massage [15].

Barriers identified in this study were lack of time (38.6%), patient unwillingness (32.5%), lack of equipment (13.1%), and family/patient needs pill (9.9%) and lack of attention and age of the patient. This was nearly congruent with previous study done in BroMenn Regional Medical Center [10]. This difference can be due to variation in training strategies as well as difference in educational level in these two study settings. Age, work experience, level of education and non-pharmacological education were significantly predictors of nurses' practice of non-pharmacological pain management. Nurses who had aged 21 and above years more likely practice non-pharmacological pain management than nurses with age of 20 or less years. More practicing at this age group of can be as a result of educational level. In this study majority of degree level of nurses were in this age range, and also it can be due to the nurses' exposure in different management protocol intern it leads to understanding and practicing of the non-pharmacological pain management.

Similarly, nurses who had work experience of 10 and above more likely to practice this therapy than nurses who had work experience of 0-9years. The money years' experience of nurses can bring an easy application of different non-pharmacological pain management techniques as a result of having competency in this area of pain management. Expert nurses collected a wide range of cues and clustered them more than did novice nurses when deciding on the appropriate method. This applied to experienced nurses in their non-pharmacological approaches. Nurses who had baccalaureate degree and non-pharmacological class in their previous time had more likely to use non-pharmacological methods as compared to nurses who had diploma and had no class. This was congruent with earlier study which reported that attending non-pharmacological class in their previous time contribute to capture the required knowledge for implementation of non-pharmacological pain management techniques [15].

Conclusion

In this study nurse had an unsatisfactory level of practice regarding patient preparation, massage, distraction, relaxation and environmental comfort. Age, educational level, years of experience, and non-pharmacological education was a positive predictor of nurses' non-pharmacological pain management. Therefore, this study concludes that many factors were interwoven to bring nurses practice of non-pharmacological pain management. The Ethiopian government should promote these positive changeable factors in collaborating with ministry of health to secure support and design strategies for the implementation of nurses' non-pharmacological pain management.

Authors' Contributions

SK had the primary responsibility in all steps of the study and supervised field work together with YW and MM. SK, YW and MM developed the analysed data and prepared the manuscript together. All authors were involved the writing of the manuscript and have approved the final version of the manuscript.

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