Pain knowledge and attitude: a survey among nurses in 23 health institutions in Western Ethiopia

Ağrı bilgisi ve yaklaşımı: Batı Etiyopya'daki 23 sağlık enstitüsündeki hemşireler arasında bir anket

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Abstract

Effective pain management requires a sound knowledge of pain and its treatment. Researches indicated that inadequate knowledge and inappropriate attitudes of nurses regarding pain management have a significant impact of treatment and patient care. The aim of this study was to assess the level of knowledge and attitude among health care professionals in Anfillo Woreda health centers and private small clinics in West Ethiopia. A cross-sectional survey was used to self-administer four Likert scales validated and adopted 22 pain related items by 89 nurses of three health centers and twenty small clinics. Descriptive data analyses were used. Item total correlation and Cronbach’s alpha were computed. The overall mean correct answer for all the 22 items was 49.8%; meaning health care providers were able to correctly answer 49.8% of items on average. Besides, only 3.8% of them scored above the passing score of 70%. The widespread pain related misconceptions identified is of concern demanding continuing education for nurses and pain management quality improvement initiatives so as to alleviate the consequences of poor knowledge and inappropriate attitude towards pain management.

Keywords: Attitudes; knowledge; nurse; pain management

Özet

Etkili ağrı yönetimi, sağlıklı bir ağrı bilgisi ve tedavisi gerektirir. Araştırmalar, ağrı yönetimi konusunda yetersiz bilginin ve hemşirelerin uygunsuz yaklaşımlarının, tedavi ve hasta bakımında önemli bir etkiye sahip olduğunu göstermiştir. Bu çalışmamın amacı, Batı Etiyopya’da bulunan, küçük kliniklerde ve Anfillo Woreda sağlık merkezlerinde sağlık bakım profesyonellerinin arasında bilgi ve ağrı yönetim seviyesini değerlendirmektir. Kesisel ankette, 3 sağlık merkezi ile 20 küçük kliniği 89 hemşireler tarafından onaylanan ve benimsenen 22 ağrı ile ilgili maddeleri içeren kendi kendine uygulanan 4 Likert skalası kullanılmıştır. Tüm 22 maddenin doğru cevabın genel ortalaması %49.8 idi; yani ortalamada maddenin %49.8’sini sağlık bakımı içinde doğru kullanmaları doğru olarak cevaplandırıldı. Ayrıca, bunların sadece %3.8’i, geçme skoru olan %70’un yukarısındadır. Özellikle ağrı yönetimi konusunda bilgi eksikliği ve yetersiz bilginin sonuçlarını hafifletmek için ağrı yönetimi kalite iyileştirme girişimleri ve hemşireler için sürekli eğitim talebinin önemini hale getirmiştir.

Anahtar kelimeler: Yakaşım; bilgi; hemşire; ağrı yönetimi

Introduction

Pain is one of the most common but also the most feared symptoms that patients experience during the course of a disease (1). The international association for the study of pain (IASP) has defined pain as an unpleasant sensory and emotional experience arising from actual or potential tissue damage (2).

Unrelieved pain causes unnecessary suffering for the patient complicating the bereavement process for their families (3). The social and mental pain suffered by patients with life threatening diseases intensifies the physical pain they experience. Failure to treat the total pain of the patient is one of the most common reasons why patients fail to achieve adequate symptomatic relief (4).

Effective pain management requires a sound knowledge of pain and its treatment. The fact that pain management is one of the most important aspects of patient care and is most relevant to all nurses emphasize that the responsibility that rest on the shoulders of nurses for the comfort of patients far greater than that of other medical staffs (5). Research results indicate that the attitudes, beliefs and knowledge of nurses regarding pain management have significant impacts on treatment and patient care (6,7). Therefore, nurses should have
a solid foundation of knowledge about pain management and develop a positive attitude towards it to assess patients' condition and to deliver individualized care to each one so as to reduce discomfort and enhance the quality of life.

Several studies in both developed (5,8-16) and developing (17) countries that assessed the knowledge of nurses regarding pain and its management demonstrated deficiency has been noted in the area of attention given to and assessment of pain, opioid related issues, general principles of pain management, pain management in children; and non-pharmacologic aspect of pain management.

A qualitative survey conducted in 2005 among health professionals from four Ethiopian Universities demonstrated that pain was undertreated due to various reasons amidst of which professionals' poor knowledge was at the forefront (18). Yet, there is no evidence to understand the real knowledge gap in the country. Besides, it is the nurses who have a frequent contact to care the patients so it is inevitable to understand the knowledge towards pain management status. Thus, this study was conducted to assess the knowledge and attitude of pain management among conveniently selected private and public health institution nurses in the Western region of Oromia, Ethiopia.

Materials and Methods
Study Setting
The study was conducted in Western Oromia region Kellem Wollega Zone Anfillo Woreda located 694 kms from Addis Ababa city. It has 3 health centers, and 20 private small clinics. The health centers are organized in terms of case teams (emergency case team, OPD case team, and delivery case team) and the nurses assigned in each health center work in rotation. Among other professional (Health officers and pharmacy technicians) in the health institutions, nurse in in 3 governmental health centers namely Ashi, Shebel and Muggi are counted to be 21, 21 and 19 respectively; thus a total of 62 nurses. Similarly, 12 of the small private clinics (located in the remote rural area) have one nurse each while the remaining 8 have 2 nurses each.

Study Design and Participants
A cross-sectional survey was used to self-administer a questionnaire by 90 nurses from the three health centers and twenty small clinics during February 10-20, 2013. For this study, all the nurses in the study setting were included. Of all, only one questionnaire from the nurse in the Shebel Health Center was returned incomplete and discarded.

Study Tools
To assess the knowledge and attitude towards pain, a questionnaire that contain 22 items having a four Likert scales called SD (Strongly Disagree), D (Disagree), A (Agree), and SA (Strongly Agree) were adopted from previously validated tools (14,16) apart from the socio-demographic characteristics. The tool was prepared and administered via English.

The internal consistencies of the 22 knowledge and attitude assessment items were very good as evidenced by the overall Cronbach's Alpha or reliability of the items was 0.842. Moreover, no significant improvement was detected up on deletion of any of the items. The last item (23rd item) of the questionnaire was added by the investigators to determine the nurses’ opinion whether they have learnt about pain and its management during their academic career.

The 22 items focuses on domains which are deemed to be the minimum but crucial competences regarding pain and its management. These includes: attention given to and assessment of pain (Items 1, 4, 6, 11, 12, 13, 15, 16, 21); Opioid related issues (Items 2, 5, 8, 10, 17, 18, 19, 20); General principles of pain management (Items 3, 4, 7, 16, 22); Pain management issues in children (Items 8 and 9); and Non-pharmacologic aspect of pain management (Item 14). As it is vividly seen some of the items are multidimensional assessing more than one domain of pain and its management. The correct answer for the items area mutually exclusive agreeing or disagreeing.

Data Management and Analysis
To assure the data quality, the survey tool was filled and returned quickly by the participants either in a class room or their practice site. No freedom was given to participants either to consult medical texts or discuss among themselves.

Each correctly answered item was recoded as “1” (coalescing the strongly or plainly extent for agreeing and disagreeing scales accordingly) and the incorrect one as “0” in a similarly collapsing scheme. Thus, the maximum raw score achievable for an individual participant would be 22 which would be equal to a 100% correct response score.

The correct answer score for each nurse was the quotient of the number of correctly answered items as divided by the maximum possible correct answer which is 22. The mean of these scores was used to generate the overall correctness score for each department or for all participants per se. In a similar manner, the correct answer score for each item was calculated by dividing the number of participants who correctly answered each item to the total participants’ number. The raw scores were analyzed and tabulated to determine the mean score and overall percentage score.

To aid interpretation of the raw and mean scores, only one study was retrieved that used the concept of cutoff point for good (acceptable) level of knowledge...
and stated 80% score as a cutoff (19). On the other hand, the American Medical Association (AMA) delivers a certificate to participants who accomplished and scored 70% in its recent online course on pain management (20). Therefore, to be less conservative as it is a first survey, we have chosen an acceptable passing score of 70%. Besides, a checklist to gather participants’ socio demographic characteristics was also used.

Item-total correlation and Cronbach’s alpha were computed using SPSS for Windows version 20. Results were prepared using narrations, means, percentages, figure and tables.

Ethics
A formal letter written from school of pharmacy, Jimma University to Student Research Program (SRP) and permission was obtained from Ethical Approval Committee. After explaining the study objective and procedure, the necessary clearances to conduct the study were obtained from the respective district health offices, and participants’ informed consent were gained prior to dissemination of the questionnaires.

Results
Sample Description
Out of the 89 nurses, males consisted of 63.6% and majority (70.7%, 93.9%) of the participants was below 30 years old with a mean age of 26.6±5.4 years and diploma by level of education (Table 1). This table also shows that greater number (59.6%) of respondents had less than 5 years of experience followed by 5-10 years of experience (16.2%) and almost all the participants were nurse by profession working in rotation in the case teams called emergency case team, OPD case team, and delivery case team.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Frequency (n)</th>
<th>Percentage (%)</th>
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<tbody>
<tr>
<td>Gender</td>
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<td></td>
</tr>
<tr>
<td>Female</td>
<td>32</td>
<td>36.0</td>
</tr>
<tr>
<td>Male</td>
<td>57</td>
<td>64.0</td>
</tr>
<tr>
<td>Level of education</td>
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<td></td>
</tr>
<tr>
<td>Diploma</td>
<td>84</td>
<td>94.4</td>
</tr>
<tr>
<td>Degree</td>
<td>5</td>
<td>5.6</td>
</tr>
<tr>
<td>Years of service</td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt; 5 years</td>
<td>53</td>
<td>59.6</td>
</tr>
<tr>
<td>5 – 10 years</td>
<td>14</td>
<td>15.7</td>
</tr>
<tr>
<td>&gt; 10 years</td>
<td>22</td>
<td>24.7</td>
</tr>
</tbody>
</table>

Knowledge and Attitude Scores
Table 2 presents the percentage of all the participants from each health facilities who correctly answered each items. Majority (78.1%) correctly answered the item which highlights the use of non-pharmacological intervention like distraction in a form music or relaxation for managing pain, whereas only few (24.4%) succeeded to correctly answer the pharmacological question item stating “when a patient requests increasing amounts analgesics to control pain, this usually indicates that the patient is psychologically dependent”.

The overall mean correct answer for all the 22 items was 49.8% meaning the health care providers were able to correctly answer 49.8% of items on average. Besides, only 3.8% of them scored above 70%. Nevertheless, though paradoxical, 78.8% of the participants believed they have adequately learnt about pain and its management early in their academic carriers. All most all (21 out of 22) the questions were correctly answered below the passing score (Table 2).

As elucidated in Figure 1 which demonstrates average scores on the 5 domains of pain management, the only aspect that participants performed well was regarding the benefit of non-pharmacological ways of managing pain. On the contrary, the domains on general principles of pain management, attention paid to and assessment of pain, question pertinent to opioid, and issues regarding pain management in children were only answered correctly in rate way below the 70%.

Discussion
This empirical study sought to establish the contemporary knowledge and attitude regarding pain management of nursing professionals working in three public health centers and twenty private small clinics in western Ethiopia, and it has to be interpreted in to the social context. It used a contextually modified general tool assessing the various domains of pain. The Achieved appropriate and high response rate is satisfactory in providing findings which can be generalized, and reassures an indicative interpretation of the target population of nursing professionals in that specific region and Ethiopia as a whole.

The various researchers employed similar tools like the current study discouraged distinguishing between items measuring knowledge and attitudes for the reason that some items measuring knowledge also determine the respondents’ attitude. They suggested that data should be analyzed in terms of complete scores as well as analyzing group of contextually akin items (19,21). Therefore, the data were analyzed and evaluated in terms of overall percentage scores obtained. Additionally, an analysis of group items was conducted to establish areas of strength and also areas of weakness in terms of respondents’ pain knowledge and attitudes. Such kinds of examining items are crucial to establishing content areas that need to be strengthened. As depicted in Table 3, comparisons of overall score were made with other bunch of studies retrieved through inclusive but targeted literature review. Domain by domain or item to item comparison was

<table>
<thead>
<tr>
<th>Table 2. Summary of demographic characteristics of respondents in the three governmental health centers and twenty private small clinics in Anfillo Woreda, 2013 (n=89).</th>
</tr>
</thead>
<tbody>
<tr>
<td>Variables</td>
</tr>
<tr>
<td>Gender</td>
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<tr>
<td>Female</td>
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<td>Male</td>
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<tr>
<td>&lt; 5 years</td>
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<td>5 – 10 years</td>
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<tr>
<td>&gt; 10 years</td>
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</tbody>
</table>

Domain by domain or item to item comparison was
Pain is one of the most common reasons for patients to seek medical attention and one of the most prevalent medical complaints, professionals need to demonstrate competencies in appropriately assessing and reassessing pain based on detailed evaluation of the patient’s self-report (22). In this present study, analysis of the items which ascertained knowledge and attitudes regarding attention paid to and assessment of pain were discouraging all in all. The nurses demonstrated significant misconceptions in all the components of this domain namely items related to placebo as diagnostic means; the role of pain estimation by professionals; dosage timing in chronic pain, the authenticity of patients pain reporting. The misconception noted in this study regarding the attention paid to and assessment of pain has also been demonstrated in other settings (14,16).

The second salient issue this survey reveals was the participants were also lacking not only regarding pain assessment skills but also the general principles of pain management. Unfortunately, all nurses scored
less than the passing score level in all items categorized in the general principles of pain management. Particularly, higher level of mistaken belief was observed in increasing dose for chronic pain and other form of uncontrolled pain. Preference towards a PRN base and delaying medication till patients become symptomatic was observed in a similar fashion as it was demonstrated in other studies too (23-25). Such misunderstanding would leave patients undertreated and contribute to transformation of minor treatable pains to a centrally sensitized adamant to manage pain.

Best practice standards recommended an integrated approach to pain management which should comprise of the utilization of the combination of both pharmacological and non-pharmacological therapies for the optimal alleviation of pain (26,27). As elucidated in Table 2 and Figure 1, a considerable number of respondents were correct regarding the role of non-pharmacologic therapy, whilst nurses demonstrated extensive misconceptions and knowledge deficits in numerous areas of basic pharmacological knowledge which related to: drug action, routes of administration, drug uses, and untoward effects of opioid analgesics and selection of drug dosages. In the present study, pharmacology based items were the domain of weakest performance which is congruent with other international research studies who have also established that nurses illustrated the poorest knowledge and attitudes in the area of pharmacological aspects of pain and its management. High prescription rate of IM and PRN were demonstrated to be a sign of poor quality pain management (22,28-30).

Moreover, the exaggerated fear towards opioid related side effects and addiction, which is proven to be nonexistent to significant level in various studies (26,27,31), was revealed among the participants of this study via the misconception to the item that assessed prevalence of addiction in opioid treated patients. Even if the one item that was correctly

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**Table 3. Summary of previous comparator studies**

<table>
<thead>
<tr>
<th>Author and date of studies</th>
<th>Country</th>
<th>Sample Size</th>
<th>Tool name</th>
<th>Items used</th>
<th>Over all mean correct answer (%)</th>
<th>Content similarity with the current study (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current study</td>
<td>Ethiopia</td>
<td>89</td>
<td>-</td>
<td>22</td>
<td>49.8</td>
<td>-</td>
</tr>
<tr>
<td>Ho et al. 2013 (10)</td>
<td>Malaysia</td>
<td>84</td>
<td>KASRP</td>
<td>37</td>
<td>99</td>
<td>43</td>
</tr>
<tr>
<td>Moscri and Drevdahl 2012 (13)</td>
<td>USA</td>
<td>91</td>
<td>KASRP</td>
<td>37</td>
<td>76.0</td>
<td>43</td>
</tr>
<tr>
<td>Vickers 2011 (19)</td>
<td>Ireland</td>
<td>94</td>
<td>KASRP</td>
<td>39</td>
<td>65.7</td>
<td>41.0</td>
</tr>
<tr>
<td>Lui et al. 2008 (12)</td>
<td>Hong Kong</td>
<td>143</td>
<td>KASRP</td>
<td>25</td>
<td>52.3</td>
<td>52</td>
</tr>
<tr>
<td>Zanolin et al. 2007 (16)</td>
<td>Italy</td>
<td>3457</td>
<td>PAR</td>
<td>21</td>
<td>51.3</td>
<td>100</td>
</tr>
<tr>
<td>Wilson 2007 (15)</td>
<td>UK</td>
<td>72</td>
<td>KASRP</td>
<td>20</td>
<td>71.9</td>
<td>64</td>
</tr>
<tr>
<td>Visentin et al. 2001 (14)</td>
<td>Italy</td>
<td>669</td>
<td>-</td>
<td>16</td>
<td>58.8</td>
<td>100</td>
</tr>
<tr>
<td>Lebovits et al. 1997 (5)</td>
<td>USA</td>
<td>689</td>
<td>-</td>
<td>17</td>
<td>64.7</td>
<td>68.7</td>
</tr>
<tr>
<td>Clarke et al. 1996 (6)</td>
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<td>120</td>
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<td>37</td>
<td>62</td>
<td>41.0</td>
</tr>
<tr>
<td>Kubeka et al. 1996 (11)</td>
<td>USA</td>
<td>123</td>
<td>KASRP</td>
<td>37</td>
<td>67.4</td>
<td>43</td>
</tr>
<tr>
<td>Hamilton and Edgar 1992 (9)</td>
<td>Canada</td>
<td>318</td>
<td>KASRP</td>
<td>37</td>
<td>63.9</td>
<td>41.0</td>
</tr>
</tbody>
</table>

*The items included in this tool are very detail and challenging as compared items in our study which are very basic.

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**Figure 1. Percentage of mean correct answer by pain management domains**

![Figure 1](image-url)
answered by the participants regarding non-pharmacologic management of pain may not demonstrate the practitioners entire knowledge on this aspect, it can at least definitely exhibits their positive attitude towards its role in managing pain. Various evidences have well demonstrated that the role of non-pharmacological interventions is gaining recognition as an adjunctive intervention of pain.

The greatest misconception was seen among the nurse regarding pediatrics pain management which is also demonstrated by studies in other settings (14,32), albeit the score in the others’ were higher than this study. The global misunderstanding that children do not feel pain has been well disproved by studies that demonstrated that children have lower pain thresholds, poor central modulation, immature inhibitory pathways, and to the worst unmanaged pain in their early life can produce behavioral derangement in their posterity (33). Despite the various strengths of this study, the fact that the data was only collected in one setting, the possibility of information bias from non-residents might compromise its inferential power.

To conclude, the survey demonstrated a strong cross-sectional view of nurses who presumed to spend more of their time with patients as compared to other professionals. The global consensus that pain education is poorly emphasized in nurses is augmented and substantiated by the findings of this study.

Overall, the findings in this current study have revealed extensive knowledge deficits, far from optimal and inappropriate attitudes of health care providers working in different health facilities within the context of pain management. Thus, an intensive and comprehensive educational initiative should be tailored to meet the specific needs of health care providers at different education levels. Besides, further endeavors such as quality improvement program should be rolled out with in health care organizations which could include different strategies aimed at enhancing the knowledge and improving the practices of pain management.

Acknowledgement

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