THE ASSESSMENT OF NURSES’ KNOWLEDGE AND ATTITUDES TOWARD POSTOPERATIVE PAIN. DESCRIBING THE PROCESS OF DEVELOPING AND CULTURALLY ADAPTING A STANDARDIZED TOOL

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INTRODUCTION
The year 2017 was declared the Global Year Against Pain After Surgery by The International Association for the Study of Pain (IASC), with the following objectives: a) to disseminate information worldwide about pain after surgery, b) to educate pain researchers as well as health-care professionals, c) to increase awareness of postsurgical pain among public officials, members of the media, and the general public and d) to encourage government leaders, health-care organizations, and other relevant organizations to support policies that result in improved management of pain after surgery [1]. Pain is defined as "an unpleasant sensory and emotional experience associated with actual or potential tissue damage, or described in terms of such damage" and the acute pain management represents one of the main components of healthcare [2]. Pain also represents the main reason for which patients use health care services (3-5), but, despite this, postoperative pain is often perceived as a natural, physical response to surgical trauma and is not treated appropriately [6]. Postoperative pain management has been in the center of attention during the last decades, a key moment in changing the general perspective on pain being represented by the Declaration of Montreal which states that access to pain management is a fundamental human right [7]. The Declaration also emphasizes the inappropriate access to acute pain treatment, but also the health care professionals’ major lack of knowledge about pain management. This lack of knowledge is noticed amongst all healthcare professionals, including nurses for whom pain assessment is a fundamental and indispensable part of taking care of the patient [4]. A literature review on the nurses’ involvement in pain management concluded that nurses play an important role in both acute and chronic pain management, especially regarding pain assessment and monitoring, but also educating patients and co-workers (8). Despite this role, studies about the nurses’ knowledge, attitudes and behavior showed the fact that they don’t understand the magnitude of the pain issue or that they consider pain management as being a difficult task [9].

The postoperative pain management represents a multiprofessional area where nurses play a vital role. However, internationally, a lack of nurses’ knowledge of pain management has been observed. To date, in Romania, an assessment of the nurses’ level of knowledge and attitudes toward pain has never been conducted and no tool for this kind of assessment is currently available. In this context, this study aims to present the process of developing a questionnaire of assessing the nurses’ level of knowledge and attitudes regarding postoperative pain assessment in adult patients in surgical and intensive care units by adapting other assessment tools identified in the specialized literature. We report here the process of identifying a set of 141 items (coming from seven distinct tools), of testing them with a group of 11 clinical experts and of selecting a number of 79 items which were used to develop a questionnaire for assessing the nurses’ knowledge and attitudes toward pain management. The tool represents an important starting point in identifying the nurses’ actual educational needs regarding the pain management area and also in improving the quality of medical care.

Keywords: knowledge, attitudes, pain management, postoperative pain, questionnaire, adaptation.

Some of the most frequently invoqued barriers to an adequate pain management being the high workload, the personnel shortage or other organizational constraints [10]. In this context, The Order of Nurses, Midwives and Medical Assistants in Romania, Bucharest Branch, (OAMGMAMR Bucharest), included in the 2017 strategy a series of objectives regarding postoperative pain management, as it follows:

a. to identify valid tools for assessing the nurses’ level of knowledge and attitudes toward postoperative pain management and also to develop and validate a tool adapted to the local needs (based on the identified questionnaires in the specialized literature);
b. to systematically review the specialized literature about the efficacy of the educational programs of pain management in order to improve the level of knowledge and attitudes of the nurses working in surgery units and intensive care units and
c. to develop a program of improving the nurses’ knowledge and attitudes, implementing this program in five medical units and assessing the efficacy of the program through pre-post research.

In this study we present in detail the process of developing the questionnaire for assessing the nurses’ knowledge and attitudes toward postoperative pain in adult patients in surgical and intensive care units by adapting assessment tools identified in the specialized literature.

METHODOLOGY
Taking into consideration the final objective of the study (i.e. to develop a tool for assessing the nurses’ knowledge and attitudes regarding pain management
which is adapted to both the context and the local needs) a process that includes five distinct steps was developed and implemented between January-October 2016 by a multi-professional team (CM, MZ, VN, RS, PA).

The above mentioned steps are as follows: (1) identifying the main instruments for assessing the nurses’ knowledge and attitudes regarding the postoperative pain management for adults patients by reviewing the specialized literature (January-June 2016); (2) translating into Romanian the relevant instruments identified at step 1 (June 2016); (3) developing a new survey (July 2016); (4) pretesting the survey (the 2nd of August 2016); (5) adjusting the survey (August-October 2016).

RESULTS

Step 1-identifying the main instruments for assessing the nurses’ knowledge and attitudes toward acute postoperative pain management for adult patients

In order to identify the relevant specialized literature, an initial search was done in English and Romanian in the following databases: MEDLINE (PubMed interface), CINAHL, PsycINFO (Ovid interface), Scopus, Google Academic, JBI Library, Cochrane Library, Web of Science, by using the following key words: pain management, postoperative, adults, knowledge, attitudes, self-efficacy, nurses, educational intervention, educational program.

As a result of the search we identified 4363 papers, out of which 1215 were duplicates. From the 3132 remaining papers, we identified 16 papers which were relevant for our topic, all these by using at least one of the tools presented below:

a. Knowledge and Attitudes Survey Regarding Pain” (KASRP)

It was first developed in 1987 by Ferrell Betty and McCaffery Margo and updated in 2008 („The Nurses’ Knowledge Regarding Postoperative Pain Management Questionnaire”, NKRPPMQ). It can be used to assess the nurses’ knowledge and attitudes and also to measure the effect of the educational programs (pre and post educational intervention). The tool is used on a large scale in the U.S., Canada, Australia, Asia, Europe. The items refer to the nurses’ knowledge and attitudes regarding: how they assess pain, how they intervene and what is this intervention about, how they estimate the intervention effect, how they record pain. The high scores reflect the presence of the knowledge and positive attitudes toward pain management.

b. A Questionnaire to Evaluate the Knowledge and Attitudes of Health Care Providers on Pain

It was developed by Lebovits et al. in 1997 [13] and improved by Zanolin in 2007 [14]. It was used in Italy and Jordan to comparatively assess the nurses’, physicians’ and pharmacists’ knowledge and attitudes toward pain management. The high scores on a Likert Scale indicated the presence of the medical staff’s knowledge and positive attitudes toward pain, the use of analgesics, the relational needs, the existence of addiction to drugs and the prejudices in this area.

c. Tool for Evaluating the Ways Nurses Assess Pain (TENAP)

It was developed by Ng Siok Qi et al. in 2014 [15]. It has two sections: the items in the first section assess the nurses’ knowledge and attitudes towards older patients with cognitive impairment and the items in the second section are represented by two case studies (vignettes) and were developed based on the national best practice guidelines in order to identify the attitudes and practice regarding pain in older people with cognitive impairment. The conclusion of the study is that further testing of the tool with a larger sample of nurses in other practice contexts is needed.

d. The Nurses’ Knowledge Regarding Postoperative Pain Management Questionnaire (NKRPPMQ)

It was developed by Ferrell B. and McCaffery M in 2008. We found six items of the questionnaire in Dilli Darjee’s master’s thesis, 2014. Items in this questionnaire can be found in the KASRP 2014 version and can be used to assess the nurses’ knowledge and attitudes and also to measure the effect of educational programs through pre and post-interventions tests. The instrument is used on a large scale in the U.S., Canada, Australia, Asia, Europe. The items refer to the nurses’ knowledge and attitudes regarding: how they assess pain, how they intervene and what is this intervention about, how they estimate the intervention effect, how they record pain. The high scores reflect the presence of the knowledge and positive attitudes toward pain management.

e. The Nurses’Attitude Regarding Postoperative Pain Management Questionnaire, NARPPMQ

It was developed by McMillan et al., in 2000 and it is used in China, the U.K., Ireland and Vietnam [16]. The items refer to the nurses’ attitudes, respectively their conceptions referring to pain assessment, pain interventions and the use of opioids. The high scores represent positive attitudes about pain management.

f. The Nurses’Self-efficacy in Postoperative Pain Management Questionnaire”, NSEPPMQ

It was developed by Manworren in 2000, is used in the U.K., Australia, China, Japan to measure the nurses’ self-efficacy regarding pain management. The items assess the nurses’ knowledge and attitudes toward: pain assessment, pain intervention, pain documenting [17]. The high scores represent a high level of self-efficacy regarding postoperative pain management.
A first meeting of the working group took place at the OAMGMAMR Bucharest quarters, on the 2nd of August 2016, having as objectives the pretesting of the questionnaire developed in the third step, and obtaining feedback for adapting the tool to the Romanian context. The meeting lasted approximately 150 minutes, and the average time of filling in the questionnaire was 35 minutes. During this meeting, a series of necessary adjustments were identified, as it follows: a) renaming certain drugs whose active substance is found on the Romanian market under another commercial name (e.g. Ibuprofen instead of Motrin); b) clarifying the instructions for filling in the questionnaire; c) explaining the PRN acronym which refers to opioid administration (pro re nata = as needed or as the situation arises;); and d) removing certain items that assess pain management in children, those which refer strictly to elderly patients and case studies about chronic pain management (e.g. elderly people with cognitive impairment in the neurology units).

As a result, 22 true/false items were selected to be used in the final questionnaire, 15 multiple choice items and two case studies that show the actual practice level regarding postoperative pain management.

Step 5-adjusting the questionnaire
As a result of the feedback received, 29 new items have been selected as follows: 6 items regarding...
knowledge about pain management (NKRPPMQ), 8 items regarding the nurses’ attitudes toward pain (NARPPMQ), 11 items about the nurses’ behavior (medical care activities) regarding postoperative pain management (NCBRPM) and 4 items describing the nurses’ self-confidence in implementing postoperative pain management practice (NSEPPMQ). These additional items were selected because they are focused on assessing postoperative pain.

In order to test the items, a second meeting took place at the OAMGMAMR Bucharest quarters, on the 5th of October 2016. Eight members of the work group participated and the activities within the work group were similar with those in the first meeting. The average time of completing the set of new items was 17 minutes and the meeting lasted 150 minutes. The items added in the different stages and their inclusion in the final questionnaire is presented in Table 2.

The new items were assessed by the group members as being more focused and easier to answer, therefore all were selected for the final version of the questionnaire. The multi-professional team, together with the expert group selected a number of 39 items regarding the nurses’ knowledge and attitudes toward pain from the initial questionnaire based on their relevance to postoperative pain. The 11 items for collecting demographic data were taken from the initial questionnaire. Thus, a final questionnaire of 79 items was developed, for which the estimated time of completion was 20-25 minutes. In table three you can find two examples of items for knowledge, attitudes and self-efficacy (Table 3).

<table>
<thead>
<tr>
<th>step 3</th>
<th>step 5</th>
<th>final questionnaire</th>
</tr>
</thead>
<tbody>
<tr>
<td>Demographic data</td>
<td>11</td>
<td>0</td>
</tr>
<tr>
<td>knowledge</td>
<td>44</td>
<td>6</td>
</tr>
<tr>
<td>Attitudes</td>
<td>48</td>
<td>8</td>
</tr>
<tr>
<td>Practice</td>
<td>4</td>
<td>11</td>
</tr>
<tr>
<td>Self-efficacy</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td>Total</td>
<td>107</td>
<td>29</td>
</tr>
</tbody>
</table>

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### Table 2 - The selection of items for the postoperative pain management assessment questionnaire

<table>
<thead>
<tr>
<th>Item no.</th>
<th>Items</th>
<th>The tool in which the item can be found</th>
</tr>
</thead>
<tbody>
<tr>
<td>KNOWLEDGE</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Vital signs are always reliable indicators of the intensity of a patient’s pain.</td>
<td>„Knowledge and Attitudes Survey Regarding Pain”, KASRP, Ferrell et al., 2014</td>
</tr>
<tr>
<td>52</td>
<td>It is better to administer opioid analgesia on a PRN basis (when necessary) rather than as a fixed schedule.</td>
<td>„Too1f for Evaluating the Ways Nurses Assess Pain”, TENAP, Ng SiokQt et al, 2014</td>
</tr>
<tr>
<td>ATTITUDES</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Patients may sleep in spite of severe pain.</td>
<td>„Knowledge and Attitudes Survey Regarding Pain”, KASRP, Ferrell et al., 2014</td>
</tr>
<tr>
<td>33</td>
<td>Giving patients sterile water by injection (placebo) is a useful test to determine if the pain is real.</td>
<td>„A Questionnaire to Evaluate the Knowledge and Attitudes of Health Care Providers on Pain”, Lebovits et al, 1997, modified by Zanolin 2007</td>
</tr>
<tr>
<td>SELF-EFFICACY</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>How confident do you feel in your ability to assess Postoperative pain?</td>
<td>„The Nurses’ Self-efficacy in Postoperative Pain Management Questionnaire”, NSEPPMQ, Manworren, 2000, cited by Darjee, 2014</td>
</tr>
<tr>
<td>13</td>
<td>How confident do you feel in your ability that you could choose appropriate pain assessment methods such as physiological monitoring (pulse, blood pressure, respiration), patients’ behavior (crying, and patient’s self report of pain?</td>
<td>„The Nurses’ Self-efficacy in Postoperative Pain Management Questionnaire”, NSEPPMQ, Manworren, 2000, cited by Darjee, 2014</td>
</tr>
</tbody>
</table>

### CONCLUSION

In this study we presented in detail the steps of developing a questionnaire for assessing the nurses’ knowledge and attitudes toward postoperative pain. In short, the process includes identifying the tools that are already used in the specialized literature, translating these items, testing them, culturally adapting them and the final adjustment of the tool. An essential element in this process was the collaboration with clinical experts who can give accurate and fast feedback about both the comprehension level of the items but also their applicability in a local context.

In conclusion, as a result of this process we developed a tool for assessing the
nurses’ knowledge and attitudes toward postoperative pain management which responds to the needs of having an appropriate tool of determining the way in which nurses assess acute postoperative pain in adult patients. This tool comprises 79 items and it takes 20-25 minutes to be completed. In the next step, this tool will be tested on a representative sample of nurses in order to confirm the psychometrical features of the questionnaire. The tool represents an important starting point in identifying the actual educational needs of nurses in the pain management area and also in improving the quality of medical care.

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