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Pain assessment and management: The knowledge, attitude and practice of Sudanese Paediatric Residents

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ABSTRACT

This was a prospective, descriptive, cross sectional study that was conducted in 9 major paediatric hospitals accredited for training of residents in Sudan to assess the knowledge, attitude and practice of residents in paediatrics on issues related to pain assessment and pain management in children. A semi-structured and validated questionnaire was distributed to 174 residents working in these hospitals. One hundred and twenty residents, out of 174, responded by filling the questionnaire, with a response rate of 68%. Seventy percent of them said they had never received any kind of training, education, or learning sessions in paediatric pain assessment and management during their training, 60% were not aware of any pain assessment scale/tool. One third of residents thought opioids are contraindicated for chronic pain relief in children, as dependence and/or addiction would occur after short use. While attitude towards importance of pain control in children was generally good among surveyed residents (75%), two thirds of them had never used topical anaesthetic cream/lotion, while 40% of them had never used non-nutritive sucking

and/or sucrose in neonates. In addition, more than a third had rarely used lubricant gel for nasogastric tube insertion. In conclusion, Sudanese paediatric residents in training had poor knowledge and training in paediatric pain assessment and treatment, however, the majority of them recognized the importance of pain control in children.

Key words:

Children; Pain Assessment; Pain Management; Attitude; Knowledge; Practice.

INTRODUCTION

Adequate paediatric pain management is now universally considered an ethical obligation, its study as a necessity, rather than a luxury. The assessment and treatment of pain in children are important parts of paediatric practice, and “failure to provide adequate control of pain amounts to substandard and unethical practice” [1]. In developed countries,

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training programs had been shown to improve the response of medical staff to pain in children [2]. The tendency to underestimate and under treat pain in children is more noticeable in under-developed countries, including Sudan. Lack of awareness of the tools and methods for pain assessment in children, and of the importance of adequate pain control and management among health care professionals in Sudan, including paediatricians and paediatric residents, is very hard to miss. Pain associated with injuries, illness, and necessary medical procedures in hospitalized Sudanese children is noted to be underestimated and under-treated in most cases.

Creation of awareness in any given group, paediatric care professionals in this instance, should be preceded by assessing the environment in which this awareness will take place. Conducting a study of knowledge, attitude, and practice (KAP) can best do this [3]. This is the purpose of this study.

METHODS

We conducted a survey to assess the knowledge, attitude and practice of residents in paediatrics regarding pain in children, with more focus on four specific areas: Awareness about and the use of tools for measuring pain intensity in children (pain assessment scales), Knowledge and practice of appropriate measures aimed at controlling peri-procedural pain in children, knowledge and practice regarding opioids as pain medications, attitude towards paediatric pain perception and the importance of proper pain management in children [1-4].

The survey had been conducted in nine major hospitals accredited for training of paediatric residents in Sudan and were chosen as they were the largest paediatric hospitals in Sudan containing the bulk of residents in training. All the participants were paediatric residents under structured training with the Sudan Medical Specialization board.

Residents were requested to answer a semi-structured questionnaire consisting of 26 items. The questionnaire was designed to cover the main areas of the study. Open questions were reduced to only 2 to facilitate data entry into the SPSS statistics software. Each item (main question) was divided into sub questions of varying numbers where appropriate. Questionnaires were distributed by hand. The author's

phone number was provided for any explanations, questions, or comments.

The data collected was entered in a data sheet and results were shown as figures and percentage. The study was approved by the ethical committee of Sudan Medical Specialization Board.

RESULTS

The questionnaire was distributed to 174 residents. A hundred and twenty of them responded by completing and submitting questionnaires. All the submitted questionnaires were included in data analysis. Most of the responders (58%) were senior residents in their last two year of training.

Of the residents surveyed, 70% said they had never received any kind of formal training, education, or learning sessions in paediatric pain assessment and management during their training as residents. Twenty-five percent of them received a total amount of only 1 to 2 hours of education, with only 5 residents out of the 120 reported to have received more than a total of 2 hours of education. Sixty percent of the responder said they did not know and could not name any of the pain assessment scales/tools used in children. Of the remaining 40% who reported they knew some of these scales/tools, 16% failed to name any correct one when they were asked to list down as many as they knew or could remember, while 41% named incorrect or invalid scales.

When residents were requested to list as much as they could of the signs, clues, indicators, or variables they used to evaluate the severity of pain in pre-verbal children or children who cannot communicate their pain intensity, 13% of them failed to name any sign/tool, while none of them used appropriate pain scale. Sixty-three percent of the responders believed that observation of the child's behaviour is the best way to indicate the severity of pain in a child who can communicate verbally well. Self-report (the correct answer) was reported as the best tool by 32%. More than 88% of residents reported that there was no pain assessment tool/scale available for evaluating children's pain in their hospital.

While most of the answers (65%) were correct regarding the duration required to develop morphine dependence, 35% thought that dependence is high likely to occur if morphine is given even for less than

48 hours. In children with chronic pain (e.g. cancer pain) half of responders answered that addiction is very common in those treated with opioids for pain relief, one third of them thought long term oral opioids are contraindicated in these children.

More than half of responders (54%) thought neonatal perception of pain is less than that of older children and adults. The majority of residents (92%) surveyed thought that poor recognition and management of pain associated with difficult peripheral vein cannulation/venepuncture has negative psychological/emotional consequences on the child. However, half of them believed children should not have routine topical anaesthesia before non-urgent vein cannulation/venepuncture and venous sampling. Seventy five percent of the residents agreed

that children never/rarely received adequate pain management for different minor procedures (e.g. urinary catheterization, nasogastric intubation) in hospitals/units where they were trained. Moreover, 5% admitted that opioids were never prescribed during their rotation, despite having a good number of indications (e.g. sickle cell painful crisis, cancer-associated pains). For non-urgent peripheral venous cannulation or venous sampling, 75% of the residents never used topical anaesthetic cream/lotion, while 40% of them never used non-nutritive sucking and/or sucrose in neonates. In addition, more than a third never or rarely used lubricant gel for nasogastric tube insertion; one fifth never used a gel containing anaesthetic agent for urinary catheterization. The duration of training seemed to have no significant effect on this (see table below).

Table 1- Awareness of pain assessment scales in children in relation to years of training.

| Experience in years | Awareness of pain assessment scale/tool used for children | |
|-------------------------|---|-----|
| | Yes | No |
| < 1 year | 32% | 67% |
| 1-2 years | 10% | 90% |
| 2-3 years | 58% | 42% |
| 3-4 years | 45% | 55% |
| Percentage of the total | 39% | 61% |

DISCUSSION

“The quality of pain treatment depends on the knowledge, attitudes, and skills of those who provide the treatment” [4]. Residents play a crucial role in this process: they are often the corner stones in every day hospital work and are usually the primary decision makers, observers, and implementers when it comes to day-to-day paediatrics, including paediatric pain management. However, the question is whether residents are equipped to fulfil this role; do they have the necessary knowledge, attitude, and skills? This is the first survey to study the knowledge, attitude and practice of pain assessment and management among paediatric residents in major hospitals in Sudan.

The response rate was felt to be satisfactory if the large volume of each questionnaire and the busy working day of registrars were taken into consideration.

Overall, the response rate was like those achieved in similar studies [2,5-8].

The percent of residents surveyed who had never received any kind of formal training and education in paediatric pain assessment and management was huge reflecting a wide gap between Sudan and other studied areas, including developing countries. Studies conducted in India and America [6,8] showed better awareness rates among nurses about pain assessment scales. The alarming facts that none of the 120 Sudanese residents surveyed had ever used any pain scales to assess children’s pain, and the hospital they worked in lacked pain assessment scales, should prompt appropriate interventions to improve both the knowledge and practice. The far distance in interest in pain assessment scales/tools in children between

Sudan and other areas of the world, where new technologies are being dedicated for this purpose, is easily apparent [4]. Most of the responders thought that the best way to assess pain in an older child was by observing his behaviour (rather than by asking him/her directly), complying with the ingrained wrong belief that children over-report their pain [8]. This view of pain in children was detrimental because attitude will affect pain management [6].

In this survey, the knowledge, practices, and attitude toward opioids were found to be severely defective, reflecting the lack of sufficient education and general under-practice of opioid prescription. The majority agreed that opioids were either under prescribed or rarely prescribed. Difficulties in opioid prescription procedures/regulations may add to the complexity in Sudan (Opioids prescription regulations, National Medicines and Poisons Board, Sudan, 2016).

Peripheral vein cannulation and venepuncture are difficult to perform in dark skinned children [9]. Many studies were undertaken to tackle the associated pain and its control [10-13]. While the use of topical anaesthesia and other measures are routine policies in many other countries [14,15], the study showed that pain associated with non-urgent venepuncture was usually ignored, sensitivity to it was "down regulated" to the degree that around 90% of the surveyed residents either had never or rarely applied topical anaesthetic for venepuncture/venous cannulation. Nevertheless, over 70% of the residents agreed that children in Sudanese hospitals either rarely or never receive adequate pain management for different minor procedures.

Not included were the hospital-to-hospital differences in the results. Nevertheless, and generally speaking, the authors had observed that a particular hospital had the highest percentage of residents who either received some pain management education or had some awareness about pain assessment scales. Other hospitals were relatively equal in the results. The reason for this was thought to be the presence

of paediatric pain management formal educational materials and management protocols in that particular hospital.

The duration of experience as trainees had no effect on residents' knowledge, practices and attitude towards pain, reflecting the general lack of awareness in the paediatric society in Sudan regarding pain in children. Studies had demonstrated clear improvement in pain knowledge, attitude, and practice among healthcare professionals when they received education and training in this field [5].

CONCLUSION

There is marked gap of knowledge among residents regarding pain assessment and management in children reflected as lack of awareness of pain assessment scales/tool in children as well as distorted knowledge about opioids use. The attitude towards pain in children was generally positive among residents; however, this was rarely reflected as appropriate practices when it comes to peri-procedural pain control and the appropriate use of opioids to relieve pain. Most residents agreed on the sub-sufficient/poor quality of pain assessment and management in children in the studied hospitals, emphasizing the need to implement policies and procedures to improve the situation.

We recommend an introduction of pain assessment and management in the curriculum of paediatrics in medical schools as an essential study subject is the initial step. Inclusion of paediatric pain assessment/management educational course into the postgraduate curriculum as a mandatory requirement for every trainee paediatric resident hand in hand with other existing programs, i.e. basic life support and neonatal resuscitation program is another necessity. This has to be supplemented with introduction and implementation of policies to ensure that adequate knowledge and proper practice of pain management are basic competencies for paediatric residents.

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