

Knowledge, attitude, and practice of pain assessment and management in children among pediatric and pediatric surgical residents in Tikur Anbessa Specialized Hospital

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Abstract

Background: Pain is widely prevalent regardless settings and is thought to be one of the main reasons why patients seek medical care. Pain is considered as the “fifth vital sign” and there is a need for it to be assessed and recorded regularly, as with other vital signs. Barriers to appropriate pain management include health worker's insufficient knowledge on pain assessment tools and the general attitude towards patient's pain management.

Objective: To assess knowledge, attitude, and practice of childhood pain assessment and the management among pediatrics and pediatric surgical residents in Tikur Anbessa Specialized Hospital.

Methodology: A descriptive cross-sectional study was conducted to assess the knowledge, attitude, and practice of pediatric and pediatric surgical residents in TASH based on pediatric pain assessment and management. The data was collected by a standardized pretested questionnaire. Data were analyzed using SPSS computer software version 25.

Results: The mean total score of the residents was 14.56 (SD=3.16) from a total of 27 questions consisting of 15 T/F and 12 MCQ questions. The maximum and minimum scores were 25 and 7 respectively. Most of the study groups (86.2%) were not using pain assessment tools. Final-year residents had 5.5(95% CI=1.38-21.85) more than "average and above" scores than the other year residents.

Conclusion and recommendation: Knowledge deficit, poor attitude, and poor practice on pediatric pain assessment and management were discovered from this study. The findings of the present study emphasize the need to improve the Knowledge, attitude, and practices of residents on assessment and management of pain in children. [*Ethiop. J. Health Dev.* 2021; 35(3):177-182]

Keywords: Pain, knowledge, attitude, pediatrics

Introduction

Proper pediatric pain management is generally considered a moral duty and continued monitoring of pain management practices is rather a necessity to ensure adequate pediatric practice in proper pain assessment and treatment. Failure to deliver adequate pain control can lead to substandard and unethical practice (1). Training of health care providers in developed countries has been shown to improve the response of medical staff to children's pain (2).

In underdeveloped countries including Ethiopia, there is a tendency to underestimate the standard treatment of pain in children. Deficiency of knowledge about the importance, the way of assessing and managing pain in children should not be dismissed by the pediatrician and pediatric residents. Pain that occurs secondary to injuries, medical illness, and important procedures in hospitalized Ethiopian children are under-estimated and under-treated in most cases.

The knowledge we have on the prevalence, evaluation, and management of pain in the Ethiopian context among pediatric patients is limited. The management of pain and stress in children, in the pediatric emergency departments, is of utmost significance. In children, adequate treatment of acute pain and anxiety has a lasting effect on the whole emergency medical experience both on a child's and family's reaction to future medical procedures. Development of management protocol and educating of staff is

necessary to provide relief to children in the emergency setting and ultimately satisfy their families.

Quality of pain assessment and management of pediatric patients depends on knowledge, attitude and practice level of caregivers (3). Residents are primary physicians who have close and prolonged contact with pediatric patients in Tikur Anbessa Specialized Hospital (TASH), so the level of knowledge, attitude and practice directly or indirectly affects the quality of pain management in children. The question was whether the residents have adequate knowledge, attitude, and skill in pediatrics pain assessment and management? This was the first survey to study the knowledge, attitude, and skill of pain assessment and management in the Tikur Anbessa Specialized Hospital pediatrics department.

Methodology

Study setting: TASH is situated at the heart of the capital city on Churchill Avenue. The hospital is the largest teaching hospital in the country providing undergraduate as well as post-graduate teaching services. And other two pillars of teaching hospitals such as clinical service for patients from all corners of the country and problem-solving researches on thematic areas. It has about 560 beds and offers diagnosis and treatment for approximately 400,000 patients a year. The pediatric department is staffed with consultants, pediatricians, residents, interns, nurses, and other support staff. The department is located on the 7th floor of the building. The department has 170

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beds in 5 different wards, 39 beds at Neonatal Intensive Care Unit (NICU), 4 beds at Pediatric Intensive Care Unit (PICU), and the pediatrics emergency unit have 40 beds. In the outpatient, there are 10 specialty clinics, 1 regular clinic, and Expanded Program on Immunization (EPI) clinic. Patient per year is inpatient more than 6600, emergency nearly 8500/year and outpatient about 40,000/year in all clinics.

Study design

A prospective descriptive cross-sectional study design was used. This method allowed the researcher to systematically determine and report the level of knowledge and attitude of residents, towards effective pain assessment and management.

Source and study population

The study population constituted of all pediatric and pediatric surgical residents of Tikur Anbessa Specialized Hospital.

Sample size determination

From the total of 97 respondents who completed their questionnaire, 94 questionnaires were returned making the response rate of 96.6%. The study used the convenience sampling method in recruiting the residents into the study.

There was a total of 83 pediatric residents from year 1 to year 3 and there are 11 pediatric surgical residents which were year 3 and year 4. All pediatric and pediatric surgical residents were included in the study. Hence, the sample size was equal to the study population which is 97.

Inclusion and exclusion criteria

All consented pediatric and pediatric surgical residents were included and all non-volunteer residents who did not wish to be part of the study and those who were on leave during the study period were excluded.

Data collection

The data was collected by using structured questionnaires adopted from pediatrics nurses' knowledge and attitude survey regarding pain (Punkies- Shriner's revision 2002) (4) is a questionnaire that was used to assess resident's knowledge and attitudes towards pain

management. It consists of 36-item, 16 "True" or "False" questions, 14 multiple-choice questions, and 6 sociodemographic questions. The content of the questionnaires was recognized and validated by a panel of pain experts, (American Pain Society and the World Health Organization). Permission was not needed to utilize these questionnaires.

After receiving ethical approval from the departments' research and publication committee the recruitment of participants commenced for all those who met the criteria. Residents who showed interest in the study were recruited and were asked to sign the consent form. For each study participant, the questionnaires were introduced, and each participant was asked to answer the questions.

Data analysis: was done by using SPSS version 25 computer software statistical package. Descriptive statistics frequencies, percentages, and appropriate graphic presentation were used for analysis. Chi-square test, Odds Ratio, and 95% confidence interval are used to check the significant association between dependent & independent variables.

Ethical clearance: was obtained from the Department Research and Publication Committee, at Addis Ababa University College of health sciences, department of pediatrics and child health. Before data collection, verbal consent was secured from the participants. For confidentiality, the data collection was anonymous which did not include names of the individual participant and any other personal identifiers. The data was kept in locked boxes to avoid unwarranted risk.

Results

Two third of the participants were males. About 69% were in the age group of 25–30 years. All of the participants were residents. Almost half of the participants (47.9%) had 1–2 years of physician experience but only 1% had work experience of more than 5 years. Eighty-three (88.2%) participants were pediatrics residents while the rest were from pediatrics surgery. Sixty-eight (72.3%) of residents have no formal training on pediatric pain assessment and management. (Table 1)

Table 1: Baseline characteristics of study participants Tikur Anbessa hospital pediatrics and surgical department 2019 n=94

Variable		Frequency	Percent (%)
Gender	Male	61	64.9
	Female	33	35.1
Age group	<25 yrs.	1	1.1
	25-30 yrs.	65	69.1
	31-35 yrs.	28	29.8
Service year	<1 yr.	13	13.8
	1-2 yrs.	45	47.9
	2-3 yrs.	23	24.5
	3-5 yrs.	12	12.8
	>5 yrs.	1	1.1
Residency year	R1	29	30.8
	R2	23	24.5
	R3	35	37.3
	R4	7	7.4
Training	No	68	72.3
	Yes	26	27.7
Department	Pedi	83	88.2
	Pedi-surgery	11	11.8

The participant's score was categorized as; poor performance, <50% between 50-69% average performance, above 70-79% above average performance, and the score above 80% categorized as excellent performance.

The maximum and minimum scores were 25/36 (69.4%) and 7/36 (19.4%) respectively. In this class, most of the study participants 48 (51.1%) had an average score while 3 (3.2%) had excellent scores.

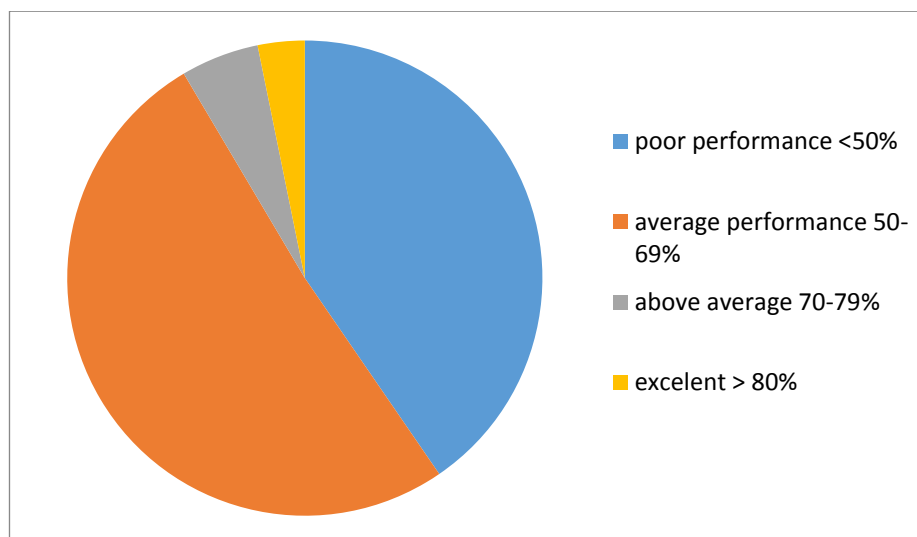


Figure 1 Performance summary on pain assessment and management of Tikur Anbessa hospital pediatrics and surgical department

The total mean score of the residents was 14.56 (SD=3.16) and with attitude and knowledge questions the mean score was 8.59 (SD=2.28) answered 57% of

the questions while practice questions answered 50% of the questions. (Table 2)

Table 2: Knowledge, Attitude and practice Scores of study participants Tikur Anbessa hospital pediatrics and surgical department 2019 (n=94)

	Minimum score	Maximum score	Mean	Std. Deviation	Mean percentage (%)
*K/A Scores	2	14	8.59	2.28	57.27
Practice Scores	2	11	5.98	1.96	49.8
Total Scores	7	25	14.56	3.16	53.9
Score percent	26	93	54.04	11.72	

*K/A Knowledge Attitude

Most of the study groups (86.2%) were not using pain assessment tools in this study and 92 (97.8%) of the residents responded to the use of distraction and comforting during LP procedures in children/adolescents. None of the participants use local

anesthesia, topical anesthesia, or sedation before LP. During NG tube insertion most of the residents 70(74.5%) use KY jelly,15(15.9%) normal saline as lubricants, and use no pain or discomfort reduction methods (Table 3).

Table 3: Residents practice in pain assessment and management in children/adolescents, Tikur Anbessa hospital pediatrics and surgical department, 2019 (n=94)

Variables	Frequency	Percent
Use pain assessment tools		
Yes	13	13.8
No	81	86.2
Pain management for LP		
Local anesthesia	0	0
Topical anesthesia	0	0
Sedation	0	0
Parental analgesics	2	2.2
Distraction	92	97.8
Pain management for NGT insertion		
Use lidocaine jelly	0	0
Use KY jelly	70	74.5
NS as lubricant	15	15.9
No pain control	9	9.6

(LP: lumbar puncture, NS: Normal Saline, NGT: Nasogastric tube)

Based on binary logistic regression analysis, R3 residents were found to have 5.5 (95% CI= 1.38-21.85) "average and above" scores than the other year

residents. But service year and training were not found to have any association with the knowledge of the residents. (Table 4)

Table 4: Association between participant's character and their knowledge on pain assessment and management Tikur Anbessa hospital pediatrics and surgical department 2019 (n=94)

Variables	Poor score	Average & above	OR	95% CI
Service year				
Below 1 year	2	11	1.0	
1-2 years	15	31	0.4	0.079-2.06
2-3 years	10	13	0.24	0.42-1.32
3-5 years	5	7	0.26	0.038-1.69
Year of residency				
R1	12	17	1.0	
R2	10	13	1.04	0.39-2.76
R3	6	29	5.5	1.38-21.85
R4	2	5	Too long	0.000
Training				
Yes	6	21	1.0	
No	26	41	0.38	0.13-1.12

Residents were compared for a possible difference with their clinical practice in using pain assessment tools and if they have a difference in using different pain management modalities during procedures based on their knowledge scores. But the Pearson chi-square test shows no significant difference among residents based on their knowledge level in using pain assessment tools (P=0.27) and in using different pain management options (P=0.40 & P=0.14).

Discussion

The study aimed to evaluate residents' knowledge, practices, and barriers to pediatric pain management at the largest tertiary health institution in the capital city of Ethiopia.

Residents play a vital role in the practice of pain management. They are a significant part of day-to-day hospital activities and mostly they are primary decision-makers. The current study found poor knowledge and attitude.

The majority of the study participants (64.9%) in the current study were males and 88.2% of the participants were pediatrics residents which is consistent with the study done in Iran. (5) From the recently surveyed residents, 72% had never had any kind of formal training and education in pediatrics pain assessment and management. There was a wide gap between our study and other study areas in India and America (6, 7). These studies have shown better awareness rates regarding pain assessment scales, on the contrary, a

Sudanese study (8) participant did not use any pain assessment, nor have any formal training. This discrepancy in America and India occurred due to refreshment training and also using pain assessment tools in their daily practice. The alarming fact is that 86% of the participants never used pain scales to assess children's pain, our study is a little bit better than the Sudanese study (8) none of the participants ever used an appropriate pain scale.

In the Sudanese study, the participants were 120 residents and none of the study participants had used the pain scale. The explanation for this is that the Sudanese physicians worked in a hospital that lacked the pain scale.

The residents who participated in the recent study (40%) scored poor knowledge and practice, which has an obvious negative impact on caring for a child with pain. This study is comparable with the study done in Nigeria and Bangladesh (9,10). This poor knowledge and practice explained in our study were due to a lack of continuous education and training. The mean score was 54.04% which was comparable with the study done in Kenya, using almost the same tool by DR. Zahra, resulted in a mean score of 47.2% (11). This little difference has been explained by participant's different backgrounds unlike our study, the latter study participants comprised of half doctors and half nurses.

According to the recent study previous training had no difference in knowledge attitude or practice of residents on pain assessment and management in children which is consistent with the previous study done in Korea (12). From this, we can understand that training should be complemented with daily practice to bring change.

More than 90% of the residents responded only to use distraction, comforting, and providing position during LP procedure in children/adolescents. This is consistent with (13). Surprisingly residents with above-average knowledge and attitude about pediatric pain assessment and management showed no difference with their clinical practice in using pain assessment tools ($p=0.27$) and in using different pain management modalities during procedures ($p=0.40$ and $p=0.14$) when compared with those who scored below average on knowledge and attitude about pediatrics pain assessment and management. This is consistent with the study conducted in Korea (12).

Conclusion and recommendation

Poor knowledge and attitudes were notable in this study which supplements the universal concern of inadequate knowledge and attitudes regarding pain management. As a result of this, there is a demand for various educational and quality improvement initiatives in pain management that could improve the resident's knowledge in the area of pain management and eventually improve practices for bettering pediatric patients' quality of life.

Operational Definitions

Effect of Pain: - any dysfunction of the patient as a result of pain including physical and psychosocial, as measured by the patient.

Standing dose of analgesics: - documented order of analgesic to be given at a regular interval.

Pro re nata (PRN): - documented order of analgesic to be given as needed instead of fixed interval.

The circumstance of analgesic order: - ordered by a health professional with or without the request of the patient.

Psychiatric disorder: - a known psychiatric condition that is diagnosed by a psychiatrist.

Chronic pain: - defined as the pain that lasts more than 6months

Subacute pain: - pain lasting less than 6months but not associated with recent acute illness or injury

Acute pain: - pain associated with an acute illness or injury

Procedure: - any medical interventions that have some degree of pain associated with it. (Including urethral catheterization, vein puncture for a blood draw or securing IV access, central line insertion, parenthesis, bone marrow aspiration/ biopsy, lumbar puncture, NG tube insertion, chest tube insertion, needle aspirations of soft tissue swelling, etc.)

Received pain medication: - Presence of documented order or documented administration of analgesics.

Non-pharmacological pain management: - Any measures taken by the caregiver or the health worker that does not involve drugs that are thought to decrease the patient's pain

Pain assessed: - Presence or absence is mentioned, measured, and documented on the patient's chart.

Incomplete Assessment & management documented: - Partially managed or documented the severity of pain at 24hrs after admission.

Pain Intensity Change: - Degree of pain at 24th hr. after admission compared to the time of admission

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