

Vol 45 (4) December , 2021

Print: ISSN 0304-4904  
Online: ISSN 2305-820X



# PAKISTAN PEDIATRIC JOURNAL



**A JOURNAL OF PAKISTAN PEDIATRIC ASSOCIATION**

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## ORIGINAL ARTICLE

# Perceived Barriers to Pediatric Pain Management Among Nurses: A Multi Center Study

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Pak Pediatr J 2021; 45(4): 444-49

### ABSTRACT

**Objective:** This study was aimed to identify perceived barriers to pain management among nurses working in pediatric units of public sector tertiary care hospitals of Khyber Pakhtunkhwa, Pakistan.

**Study Design:** A descriptive cross sectional study design was used to collect data from pediatric nurses.

**Place and Duration of Study:** This study was conducted in six tertiary care hospitals across Khyber Pakhtunkhwa province. The study was completed within eight months.

**Material and Methods:** Using census sampling technique pediatric nurses (n=234) were recruited. Approval was obtained from Ethical Review Committee of Khyber Medical University. Data were collected through a self-administered validated tool. SPSS version 22.0 was used to analyze data and frequencies, percentages, means and standard deviations were calculated.

**Results:** The five most significant perceived barriers to pediatric pain management as indicated by the highest percentage (>60%) of participants were: uncooperative behavior of patients (62%), parents' interference (64.5%) in nursing care, lack of standard protocols/policies (71%), nursing work overload in the units (82%), and improper place (71.4%) in wards.

**Conclusions:** This study identifies key barriers to pain management in children perceived by nurses. Recommendations are set forth to overcome these barriers to optimize the effectiveness of pediatric pain management. The study further suggests to reform policies for safe and effective treatment in pediatric units.

**Key Words:** *Pain management, Barriers to pain management, Pediatric pain, Pediatric nurses, Pain management strategies*

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Received 2<sup>nd</sup> March 2021;  
Accepted for publication  
8<sup>th</sup> June 2021

### INTRODUCTION

Pediatric pain is difficult to assess and manage effectively, because of complexity in perception of pain in children.<sup>1</sup> In addition, it is a very common symptom in various clinical conditions, and reduces quality of life and daily activities in children.<sup>2</sup> Furthermore, pain is the fifth most

common reason for which people visit doctors.<sup>3</sup> The capability of pain description in this population increases with their experiences, age, and developmental changes throughout their life span.<sup>4</sup> Beside, ethnic or cultural beliefs of nurses, in addition to children with varying ages, levels of acuity, cognitive abilities, and diagnoses make them a complex and challenging population for

nurses to manage their pain.<sup>5</sup> Despite the development of pain management techniques during the past four decades, pain is still a globalized problem for hospitalized patients.<sup>6</sup> Cordell and colleagues reported pain as chief complain in 52.2% of medical records in their seven days review period of their study in Indianapolis.<sup>7</sup> Literature also reports that 33% of the children admitted to hospital have either moderate or severe pain intensity.<sup>8</sup> If pain remains uncontrolled, it may affect physical, psychological and social functions of children which may become chronic in adulthood.<sup>9</sup> World Health Organization (WHO) declared pain relief is a basic and fundamental right of children.<sup>10</sup>

Pain management is considered effective when it includes all aspects of care, such as screening of pain, ongoing assessment, diagnosis, timely and appropriately documentation, pharmacological and non-pharmacological intervention, and evaluation.<sup>11</sup> As a result, proper pain management decrease patients' and their parents' anxiety and maximizes collaboration and compliance, that lead to minimize the burden on health care givers and health care resources as well.<sup>12</sup> Studies have reported that pain in children is continuously undertreated.<sup>13</sup> Numerous published studies from different countries identified factors that influence various aspect of pediatric pain assessment and management,<sup>14</sup> however little is known regarding barriers to pain management in children. This study was, therefore, aimed to determine perceived barriers among nurses working in pediatric units towards pediatric pain management.

## MATERIAL AND METHODS

To address the study objectives, a descriptive cross sectional survey design was used to collect the data from pediatric nurses working in six major public sector tertiary care hospitals in Khyber Pakhtunkhwa (KPK) province of Pakistan; including Lady Reading Hospital Peshawar (LRH), Khyber Teaching Hospital Peshawar (KTH), Hayatabad Medical Complex Peshawar (HMC), Ayub Teaching Hospital Abbottabad (ATH), Mardan Medical Complex Mardan (MMC), and Saidu Group of Teaching Hospitals Swat (SGTH). Cross sectional study was deemed most appropriate because it ensured single point

collection of data from the target population. Census (universal/total population sampling) technique was used and the whole population was approached for inclusion in the study. Researcher personally met each participant to recruit them to the study after securing permission from the respective hospital director. The primary researcher himself distributed questionnaire among participants by visiting pediatric wards in selected hospitals. Data were collected from 234 pediatric nurse in six selected hospitals. Response rate was 98.3% on the basis of inclusion criteria. Pediatric nurses with minimum of one year experience in pediatric units were included in the study. Unwilling to participate nurses (1.7%), working on administrative posts and those on long leaves were excluded from the study. Self-administered Likert scale consisting of nineteen (19) items on Likert scale "Strongly Agree", "Agree", "Neutral", "Disagree" "Strongly Disagree" was constructed. The tool was piloted on 10% sample size. The validity and reliability of the tool was calculated. The content validity index (CVI) of the instrument was 0.95 and the calculated Cronbach alpha value was 0.87. Data was analyzed using SPSS version 22.0. Mean and standard deviation were calculated for continuous variables e.g. age and experience and frequencies and percentages were calculated for categorical variables e.g. gender and responses of participants on questionnaire with Likert scale.

## RESULTS

The demographic characteristics of participants were as shown in the table 1. Out of 234 registered pediatric nurses; 18.4% were males (n=43), and 81.6% were females (n=191). As per the policy of government of Pakistan both male and female nurses are recruited by the health department to work in these hospitals. The professional education of participants were 62.2% (n=155) diploma holders (General Nursing), 32.9% (n=77) were graduate nurses (BSN) and only 0.9% (n=2) were master degree holders (MSN). 32.1% of participants were from LRH, 15.8% from KTH, 14.1% from HMC, 15.8% from ATH, 9.4% from MMC, and 12.8% from SGTH. Likewise, the distribution of participants according to their units were; pediatrics Medical 35.9% nurses, pediatrics Surgical 7.3% nurses, pediatrics Cardiology 4.7% nurses, pediatrics

Emergency 17.1% nurses, pediatrics ICU 9.4% nurses, pediatrics Nursery 23.9% nurses, and other units 1.7% nurses. The mean age of participants was  $29.5 \pm 6.2$  years, and the mean years of their experience was  $6.6 \pm 6.0$  years.

**TABLE 1: Participants' demographic characteristics**

Variables	Attributes	Frequencies	Percentage
Gender	Male	43	18.4
	Female	191	81.6
Nursing Education	G. Nrsing (diploma)	155	66.2
	BSN (Graduate)	77	32.9
	MSN (Master)	2	0.9
Hospital/Setting	LRH	75	32.1
	KTH	37	15.8
	HMC	33	14.1
	ATH	37	15.8
	MMC	22	9.4
	STH	30	12.8
Ward/Unit	Paeds Medical	84	35.9
	Paeds Surgical	17	7.3
	Paeds Cardiology		
	Paeds	11	4.7
	Emergency	40	17.1
	Paeds ICU	22	9.4
	Paeds Nursery	56	23.9
	Other	4	1.7

LRH=Lady Reading Hospital, KTH=Khyber Teaching Hospital, HMC=Hayat Abad Medical Complex, ATH=Ayub Teaching Hospital, MMC=Mardan Medical Complex, SGTH=Saidu Teaching Hospital

Identified barriers that were rated by more than 50% of participants were classified as 'significant' and less (<50%) were kept in 'non-significant' category. However, more than 60% rated barriers

were graded as 'most significant'.

Table 2 demonstrates the participants' responses depicted through frequencies and percentages. Overall, according to data collection tools, barriers were categorized as nursing care providers related barriers, nursing care receivers' related barriers and organization related barriers.

In care providers' domain, two significant barriers identified, included "insufficient knowledge of nurses regarding pharmacological intervention for pain management (57.7%)", and "non-standardized practice of drugs calculation by nurses (52.2%)". In care receivers' category, six key obstacles identified included "unwillingness of child for injectable medication (51.7%)", "myths (misconception) of the parents regarding their baby's condition (56%)", "mistrust of parents on nurses' skills (51.7%)", "uncooperative behavior of patient during implementation of pain management strategies (62%)", "unnecessary parents' interference in treatment of their child (64.5%)", and "patients' reluctance to report/rate pain (58.6%)". All the organizational related potential barriers were rated (either strongly agree or agree) by majority of the participants as critical. These include "insufficient equipment/resources (medications, topical analgesics, catheters, syringes etc.) for pain management (56.8%)", "unavailability of standard protocols/policies for pediatric pain management in the unit (71%)", "nursing work load in the unit (82%)", and "improper place (congested space, noise, crowd etc.) for intervention of pain management (71.4%)".

**TABLE 2: Barriers perceived by nurses to pediatric pain management**

Items	Participants' responses									
	Strongly Agree		Agree		Neutral		Disagree		Strongly Disagree	
	F	%	f	%	F	%	F	%	f	%
<b>Nursing Care Providers Related Barriers</b>										
Insufficient knowledge of nurses regarding pharmacological intervention for pain management	52	22.2	83	35.5	32	13.7	39	16.7	28	12.0
Non-standardized practice of drugs calculation by nurse	43	18.4	79	33.8	27	11.5	49	20.9	36	15.4
<b>Nursing Care Receivers Related Barriers</b>										
Unwillingness of child for injectable medication	36	15.4	85	36.3	56	23.9	52	22.2	5	2.1
Myths (misconception) of the parents regarding their baby's condition	34	14.5	97	41.5	66	28.2	25	10.7	12	5.1

Mistrust of parents on nurses' skills	28	12.0	93	39.7	51	21.8	37	15.8	25	10.7
Uncooperative behavior of patient during implementation of pain management strategies	48	20.5	97	41.5	34	14.5	36	15.4	19	8.1
Unnecessary parents' interference in treatment of their child	45	19.2	106	45.3	44	18.8	30	12.8	9	3.8
Patients' reluctance to report/rate pain	28	12.0	109	46.6	63	26.9	25	10.7	9	3.8
<b>Organizational Related Barriers</b>										
Insufficient equipment/resources (medications, topical analgesics, catheters, syringes etc.) for implementation of pain management strategies	88	37.6	45	19.2	39	16.7	41	17.5	21	9.0
Unavailability of standard protocols/policies for paediatric pain management in the unit	80	34.2	86	36.8	18	7.7	32	13.7	18	7.7
Nursing work over load in the unit	151	64.5	41	17.5	14	6.0	19	8.1	9	3.8
Improper place (congested space, noise, crowded etc.) for intervention of pain management strategies	116	49.6	51	21.8	25	10.7	23	9.8	19	8.1

## DISCUSSION

The overarching aim of this study was to identify perceived barriers to pediatric pain management among nurses working in tertiary care hospitals of KPK. Results of the current study suggest that insufficient knowledge of nurses regarding pharmacological intervention is an obstacle to pain management in children. These findings are consistent with previous study by Rejeh and colleagues who also identified lack of nurses' knowledge create problems to managing paediatric pain ineffectively.<sup>15</sup> Similarly another study also mentioned that inadequate nurses' knowledge is a barrier to pain management in children.<sup>16</sup> Likewise, a cross sectional study reported association between knowledge, experience, and specific protocols of children's pain management. Knowledgeable and well experienced nurses, along with existence of specific protocols in a hospital, may enhance the effectiveness of pain management in children.<sup>17</sup>

In addition, refusing medications by parents through parenteral was found as a less significant barrier in this study. Similarly, study by Rejeh and colleagues reported that only 21.9% participants considered it as a barrier to optimal management of pain.<sup>15</sup> On the other hand, a study by Czarnecki and colleagues found, refusing medications by parents as the most significant with highest mean (3.49,SD=2.36).<sup>14</sup> These differences may be due to cultural and social variances. Pakistani community has its own socio-demographic; educational, cultural, economic and social norms as compared to European countries and rest of

the world. Therefore, their values, behaviors, preferences, and approaches to health care facilities may be different. For instance, parents may think that parenteral route for pain medicines is more effective for quick relieving of pain. Other items of 'nursing care receivers' category' comprised of 'uncooperative child' and 'unsolicited parent's interference' were found as significant factors in the current study. Since children do not have cognitive capabilities to understand the benefits of medications it may be perceived by nurses as lack of cooperation. The child may want to avoid unpleasant environment (hospital) and may not be able to differentiate what is good and what is bad for their health. As far as, 'unnecessary parent's interference' in this study it means that nurses perceive that many local parents are not supporting and understanding them while they are giving care and treating pediatric pain. Educating parents is very important to make them understand how pain relieving works.

Current study also identified insufficient equipment/resources (medications, topical analgesics, catheters, syringes etc.) as one of the deterrents to pain management by (56.8%) participants. Similar findings have been reported by a qualitative study from Indonesia that several organizational and cultural factors hinder the effectiveness of pain management in children.<sup>9</sup> Lack of resources for non-pharmacological intervention has also been reported as a barrier to pain management in children.<sup>18</sup> All these studies suggest that, adequate resources on

organizational level play a vital role in pain management.

Moreover, results of this study revealed that majority of pediatric nurses (71%) considered the non-availability of standard protocols/policies as a hindrance to pain management in children. This highly significant barrier might be due the regional variations and disparities among different parts of the country and world. In Pakistan, Khyber Pakhtunkhwa province is a less developed region where hospitals are not yet fully developed to maintain enough standards. These findings validate the results of study by Ferrante et al who also reported the unavailability of standard protocols for pain relief as a key barrier to pain relief in children.<sup>19</sup> Pediatric nurses are able to manage pain in children in a better manner in the presence of specific protocols.<sup>17</sup>

Furthermore, the findings of this study reported the most frequently rated [82%] barrier by pediatric nurses (64.5% strongly agree + 17.5% agree) was work overload in the unit. Similarly, a cross sectional study by Katende identified numerous barriers to implementing comforting strategies including "work overload".<sup>18</sup> Insufficient time has also been considered as an obstacle to pain management in children.<sup>20</sup> Demanding workload among nurses has been stated as influencing factor to interrupt optimal pain management.<sup>21</sup> Pakistan is facing an acute shortage of nursing staff and nurses in the hospitals are usually overloaded with work.

The second most frequently rated [71.4 %] item in the present survey (49.6% strongly agree + 21.8% agree) was improper place (congested space, noise, crowded etc.) for intervention of pain management. These findings are supported by a previous study which reported noisy, busy, and crowded environment as hindrance to clinical decision making of pain management in children.<sup>22</sup> In addition, inadequate physical space is another barrier pediatric pain management.<sup>20</sup> The tertiary care hospitals where this study was conducted have usually overflow of patients' and pediatric units remain crowded, therefore organizations may not be able to provide appropriate area for treatment.

This study reports that most of the barriers to pain management in pediatric units in tertiary care hospitals are stemmed either from nursing care receivers (end users) or organization. Nursing care receivers, that is family and patients, need to

cooperate more with nurses and support them in managing pain. Moreover, pediatric nurses have reported their concerns regarding organization's role in managing pediatric pain.

## CONCLUSION

The five most significant barriers (> 60% rated) to pain management in children include uncooperative behavior of patients, unnecessary parents' interference, unavailability of standard protocols/policies, nursing work over load in the unit, and improper place for pain intervention. Most of the barriers that had significant standing in the study were related to nursing care receivers and organizations. In addition, insufficient knowledge of nurses regarding pharmacological intervention for pain management, as well non-standardized practice of drugs calculation by nurse were significant barriers to implementation of pain management strategies. Findings of the study imply that nursing practice for pain management in children would be effective if these barriers are overcome. Policy makers should take initiatives to make standardized policies, to overcome workload of nurses, ensure the availability of essential resources, and to provide proper spaces for nurses to manage pediatric pain effectively.

This study was limited to single method (quantitative approach). Qualitative Studies may be conducted to gain a deeper understanding of the religious, cultural, social norms and values of the nurses and parents affecting pain management in children in Pakistani culture. In addition, this study was limited to collect data only from tertiary care hospitals of KPK. Therefore, the results may not be generalized to all pediatric nurses throughout the country.

**Grant support & financial disclosures:** No any grant support and financial disclosure has been received.

**Conflict of interest:** No any conflict of interest has been involved

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**REFERENCES**

1. Srouji R, Ratnapalan S, Schneeweiss S, Srouji R, Ratnapalan S, Schneeweiss S. Pain in Children: Assessment and Nonpharmacological Management, Pain in Children: Assessment and Nonpharmacological Management. *Int J Pediatr*. 2010;2010, 2010:e474838.
2. McCarberg BH, Nicholson BD, Todd KH, Palmer T, Penles L. The Impact of Pain on Quality of Life and the Unmet Needs of Pain Management: Results From Pain Sufferers and Physicians Participating in an Internet Survey. *Am J Ther*. 2008 Jul;15(4):312–20.
3. Leung L. From ladder to platform: A new concept for pain management. Vol. 4, *Journal of Primary Health Care*. 2012. p. 254–8.
4. Stinson JN, Kavanagh T, Yamada J, Gill N, Stevens B. Systematic review of the psychometric properties, interpretability and feasibility of self-report pain intensity measures for use in clinical trials in children and adolescents. *Pain*. 2006 Nov;125(1):143–57.
5. Riley C, Poss WB, Wheeler DS. The Evolving Model of Pediatric Critical Care Delivery in North America. Vol. 60, *Pediatric Clinics of North America*. 2013. p. 546–62.
6. Twycross A, He C, Parker R, Williams A, Gibson F, Nursing C. Cancer-Related Pain and Pain Management: Sources, Prevalence, and the Experiences of Children and Parents. 2015;
7. Cordell WH, Keene KK, Giles BK, Jones JB, Jones JH, Brizendine EJ. The high prevalence of pain in emergency medical care. *Am J Emerg Med*. 2002 May;20(3):165–9.
8. Stevens BJ, Abbott LK, Yamada J, Harrison D, Stinson J, Taddio A, et al. Epidemiology and management of painful procedures in children in Canadian hospitals. *CMAJ. Canadian Medical Association*; 2011 Apr;183(7):E403-10.
9. Mediani HS, Duggan R, Chapman R, Hutton A, Shields L. An exploration of Indonesian nurses' perceptions of barriers to paediatric pain management. *J Child Heal Care*. SAGE Publications; 2017 Sep;21(3):273–82.
10. Brennan F, Carr DB, Cousins M. Pain management: a fundamental human right. *Anesth Analg*. 2007;105(1):205–21.
11. Ortiz MM, Carr E, Dikareva A. An Integrative Review of the Literature on Pain Management Barriers: Implications for the Canadian Clinical Context Un examen par intégration de la littérature traitant des obstacles à la gestion de la douleur: conséquences en contexte clinique canadien. *CJNR* 2014. 46(3):65–93.
12. Schechter NL, Zempsky WT, Cohen LL, McGrath PJ, McMurtry CM, Bright NS. Pain Reduction During Pediatric Immunizations: Evidence-Based Review and Recommendations. *Pediatrics*. 2007;119(5):e1184–98.
13. Carter BS, Brunkhorst J, Care E. Seminars in Perinatology Neonatal pain management. *Semin Perinatol*. Elsevier; 2016;1–6.
14. Czarnecki ML, Simon K, Thompson JJ, Armus CL, Hanson TC, Berg KA, et al. Barriers to Pediatric Pain Management: A Nursing Perspective. *Pain Manag Nurs*. American Society for Pain Management Nursing; 2011;12(3):154–62.
15. Rejeh N, Ahmadi F, Mohammadi E, Kazemnejad A, Anoosheh M. Nurses' experiences and perceptions of influencing barriers to postoperative pain management. *Scand J Caring Sci*. 2009;23(2):274–81.
16. Ljusegren G. Nurses' competence in pain management in children management in children. 2011.
17. Lin Y-C, Lee ACC, Kemper KJ, Berde CB. Use of complementary and alternative medicine in pediatric pain management service: a survey. *Pain Med*. 2005;6(6):452–8.
18. Katende G, Mugabi B. Comforting strategies and perceived barriers to pediatric pain management during IV line insertion procedure in Uganda's national referral hospital: A descriptive study. *BMC Pediatr*. BioMed Central; 2015 Sep;15:122.
19. Ferrante P, Cuttini M, Zangardi T, Tomasello C, Messi G, Pirozzi N, et al. Pain management policies and practices in pediatric emergency care: a nationwide survey of Italian hospitals. *BMC Pediatr*. 2013;13:139.
20. Dowden S, Paed RN, Bed C, Mccarthy M, Sci BA, Sci MA. Achieving organizational change in pediatric pain management. 2008;13(4):321–6.
21. Ortiz MM, Carr E, Dikareva A. An Integrative Review of the Literature on Pain Management Barriers: Implications for the Canadian Clinical Context Un examen par intégration de la littérature traitant des obstacles à la gestion de la douleur: conséquences en contexte clinique canadien. *Can J Nurs Res*. 2014;46(3):65–93.
22. Russo TA. Factors Affecting the Process of Clinical Decision-Making in Pediatric Pain Management by Emergency Department Nurses. 2010;