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Assessment of Nurses' Knowledge on the Implementation of Atraumatic Care in Hospitalized Children at a Level-5 Hospital in Kenya

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ABSTRACT

Hospitalization can be a traumatic experience for children due to pain, fear, separation from caregivers, and unfamiliar clinical environments. Atraumatic care is a child-centered approach in pediatric nursing aimed at minimizing physical and psychological distress during medical procedures. Nurses, as primary caregivers, play a vital role in implementing atraumatic care, and their knowledge is key to its successful application. This study aimed to assess the knowledge of nurses on the implementation of atraumatic care in hospitalized children at Nakuru Level-5 Hospital in Kenya. A cross-sectional descriptive design was employed. The study was conducted at Nakuru Level-5 Hospital, a major referral and teaching facility in Kenya's Rift Valley region. The target population included nurses working in the pediatric ward. A purposive sampling method was used to select 48 eligible nurses with at least three months of continuous experience in pediatric care. Data were collected using a structured self-administered questionnaire, validated through expert review and pretested for reliability. Data were analyzed using SPSS version 25 to generate descriptive statistics. Most respondents (91.7%) correctly identified pain and discomfort reduction as the primary goal of atraumatic care. A significant majority (81.3%) also recognized physical restraints as inappropriate for pain management in children. However, some respondents incorrectly classified distraction techniques (8.3%) and procedural instructions (8.3%) as unsuitable. Additionally, while 81% accurately described non-pharmacologic care as involving parental presence during procedures, a few misclassified sedatives and severe language as appropriate methods. Notably, 38% of nurses were uncertain about the effectiveness of atraumatic care in reducing physical discomfort. Although nurses demonstrated general awareness of atraumatic care principles, gaps in technical knowledge remain. Targeted professional development programs are essential to improve understanding and consistent application of atraumatic care in pediatric nursing practice.

Keywords: Atraumatic Care; Pediatric Nursing; Nurse Knowledge; Hospitalized Children

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INTRODUCTION

Hospitalization is often a distressing experience for children, impacting not only their physical well-being but also their emotional and psychological state (Alzahrani, 2021). The unfamiliar environment, invasive procedures, separation from family, and fear of the unknown can all contribute to a traumatic experience (Adler et al., 2018). Over the years, there has been a growing recognition within the healthcare community of the need to deliver care in a manner that minimizes physical and psychological distress among pediatric patients (Child et al., 2009). This has led to the adoption of atraumatic care a philosophy and approach in pediatric nursing that aims to prevent or minimize trauma during hospitalization or medical procedures.

Atraumatic care is anchored on three core principles: minimizing the child's separation from the family, promoting a sense of control, and preventing or minimizing bodily injury and pain (Ilmiasih and Ningsih, 2022). The application of these principles requires an interdisciplinary approach, where healthcare providers especially nurses are equipped with the appropriate knowledge, attitudes, and skills (Zumstein-Shaha and Grace, 2023). Nurses, who are the frontline caregivers in most healthcare settings, play a pivotal role in translating the concepts of atraumatic care into everyday practice (Sowers, 2023). Their level of understanding and ability to apply these principles can significantly influence the quality of care and the overall hospital experience of children.

Globally, studies have shown that when atraumatic care is well implemented, it results in better health outcomes, reduced anxiety, improved cooperation with procedures, and higher satisfaction among both children and their caregivers (Alfiyanti et al., 2024). Hospitals that prioritize child-friendly environments and staff training in atraumatic care principles have reported improved recovery rates and a reduction in negative behavioral responses post-discharge (Farzanegan et al., 2024). Moreover, international guidelines including those by organizations such as the American Academy of Pediatrics and the World Health Organization have increasingly emphasized child-centered care as a key aspect of healthcare delivery (Carter et al., 2024; Ford et al., 2018).

In the African context, the integration of atraumatic care into routine pediatric nursing practice is still evolving (Nisa et al., 2024). Despite the recognized benefits, many healthcare facilities face challenges such as resource constraints, staff shortages, high patient-to-nurse ratios, and limited professional development opportunities. These systemic issues often hinder the consistent application of atraumatic care, and there is a risk that children's emotional and psychological needs may be overlooked in the pursuit of meeting physical health targets.

In Kenya, the Ministry of Health has made strides - (Oronje et al., 2019). However, there remains a gap in the assessment of how well the principles of atraumatic care are understood and applied by nurses, particularly in public referral hospitals that serve large, diverse populations. Understanding the knowledge base of nurses in this area is critical in informing targeted training, improving hospital policies, and ultimately enhancing the quality of care provided to hospitalized children.

Nakuru Level-5 Hospital, one of the major referral hospitals in Kenya's Rift Valley region, provides pediatric care services to a wide catchment population. The hospital's pediatric ward is often overwhelmed with cases, and nurses are required to juggle high workloads with the need to provide empathetic, child-friendly care. While the hospital has continued to improve its pediatric infrastructure, little is known about the level of knowledge and preparedness of its nursing workforce in implementing atraumatic care practices. We assessed the knowledge of nurses on atraumatic care implementation in hospitalized children at Nakuru Level-5 Hospital.

MATERIALS AND METHODS

Study Design

This study adopted a cross-sectional descriptive research design, as described by Omair (2015), which involves collecting data at a single point in time to describe the characteristics of a particular population. This design was selected because it is particularly effective in assessing current knowledge, perceptions, and practices without manipulating the study environment.

Study setting

The study was conducted at Nakuru Level-5 Hospital, a public health institution located in Nakuru County, Kenya. Positioned strategically within the Rift Valley region, the facility serves a broad mix of urban and rural populations. The hospital is a referral center for several neighboring counties and has a busy pediatric department that offers inpatient and outpatient services. This environment presented a suitable context for examining nurse attitudes toward child-focused care delivery.

Target population

The study population comprised all nurses working in the pediatric ward at Nakuru Level-5 Hospital during the data collection period. Given their frontline role in managing hospitalized children, they were considered best positioned to provide relevant insights into the knowledge and implementation of atraumatic care principles. To qualify for participation, nurses were required to have a minimum of three months of continuous experience

in the pediatric ward. Subjects were excluded from the study if they declined to participate, had less than three months of experience in pediatric nursing, or were engaged on a part-time or locum basis, as their limited involvement in continuous patient care could compromise the reliability of the data. Additionally, nurses who were on leave during the study period were excluded, as they were not available to complete the data collection process.

Sampling Procedure

A purposive sampling technique (Rai and Thapa, 2015), as recommended by Campbell et al. (2020), was employed to recruit participants. All nurses working in the pediatric ward during the study period were purposively selected to ensure that only individuals with direct and relevant experience in pediatric care were included.

Sample Size

TThe sample size was determined using Cochran's formula for small populations as quoted by (Chaokromthong and Sintao, 2021). Assuming a 95% confidence level (Z = 1.96), a maximum variability of 50% (p = 0.5), and a 5% margin of error (e = 0.05), the initial sample size was calculated as 384. Since the target population (nurses in the pediatric ward) was fewer than 10,000 (N = 44), the sample size was adjusted using the finite population correction formula, resulting in a final sample size of 40. To account for potential non-response or spoiled questionnaires, an additional 20% was added, bringing the total sample size to 48 respondents.

Tools for Data Colllection

Data were collected using a structured self-administered questionnaire specifically developed to capture information on respondents' demographic characteristics, knowledge, and practices related to the implementation of atraumatic care. To ensure content validity, all questionnaire items were aligned with the study objectives. The instrument was reviewed by subject matter experts to assess the clarity, relevance, and comprehensiveness of the questions. Based on their feedback, necessary revisions were made to enhance the overall quality and appropriateness of the tool. The reliability of the questionnaire was assessed through a pilot study conducted on a small group of respondents with similar characteristics to the target population. The internal consistency of the instrument was measured using Cronbach's alpha coefficient. The results of the pilot study guided further refinement of the questionnaire to ensure it produced stable and consistent results during the main data collection phase.

Data Collection Process

Data collection began after obtaining all necessary approvals from relevant ethical and institutional bodies. Upon authorization, eligible nurses working in the pediatric ward were approached and informed about the purpose and scope of the study. Nurses who voluntarily consented to participate were provided with self-administered questionnaires. They were given ample time to complete the questionnaires, which were later collected by the research team at an agreed time. All responses were handled with strict confidentiality. Completed questionnaires were securely stored in locked cabinets, accessible only to the research team, to ensure data integrity and participant privacy.

Data Analysis

The collected data were cleaned, coded, and analyzed using SPSS version 25. Descriptive statistics, including frequencies, percentages, means, and standard deviations, were used to summarize and interpret patterns in nurses' knowledge and implementation of atraumatic care.

Ethical Considerations

This study strictly adhered to established ethical guidelines. Ethical approval was obtained from the Kabarak University Research Ethics Committee (Ref: KBU01/KUREC/001/21/07/24), the National Commission for Science, Technology and Innovation (NACOSTI) (Permit No: NACOSTI/P/24/38916), and relevant administrative authorities at Nakuru Level-5 Hospital. Written informed consent was obtained from all participants after explaining the study's purpose, procedures, and voluntary nature. To ensure confidentiality and data security, completed questionnaires were stored securely, with access restricted to the research team. Upon completion of data analysis, all physical documents were securely shredded, and electronic data were encrypted and password-protected.

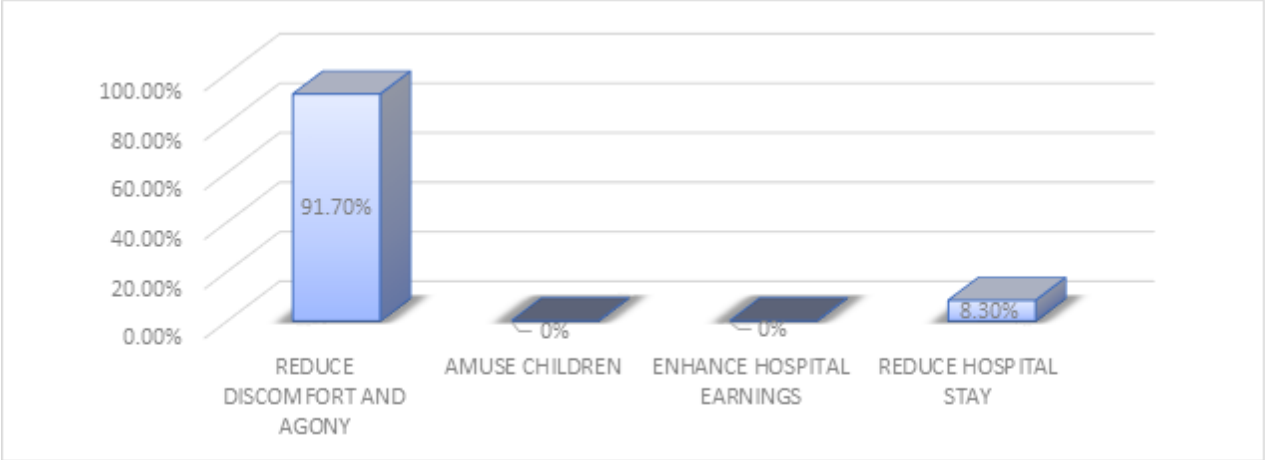
RESULTS

PObjectives of Atraumatic Treatment for Children

The majority of respondents (91.7%) correctly identified the primary objective of atraumatic care as the reduction of pain and discomfort in hospitalized children. A small proportion (8.3%) believed the objective was to reduce hospital stay, while none associated it with amusement of children or enhancing hospital revenue indicating a sound understanding of the central goal of atraumatic care.

Figure 1:

Objectives of Atraumatic Treatment for Children



Techniques Not Advised in the Treatment of Children's Pain

In assessing knowledge of non-recommended techniques, 81.3% of nurses accurately identified the use of physical restraints as inappropriate in managing children's pain. However, a small percentage demonstrated some misunderstanding, with 8.3% each identifying distraction techniques and procedural instructions as inadvisable, and 2.1% incorrectly identifying non-pharmaceutical methods as unsuitable.

Figure 2:

Perceived Role of Personal Belief in Atraumatic Care Delivery

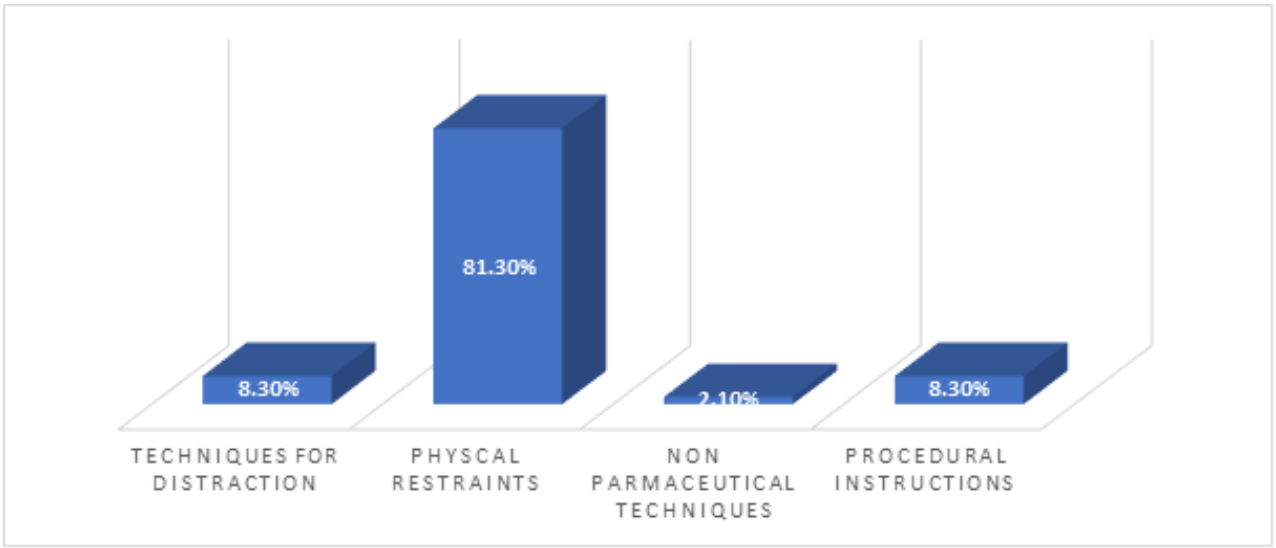
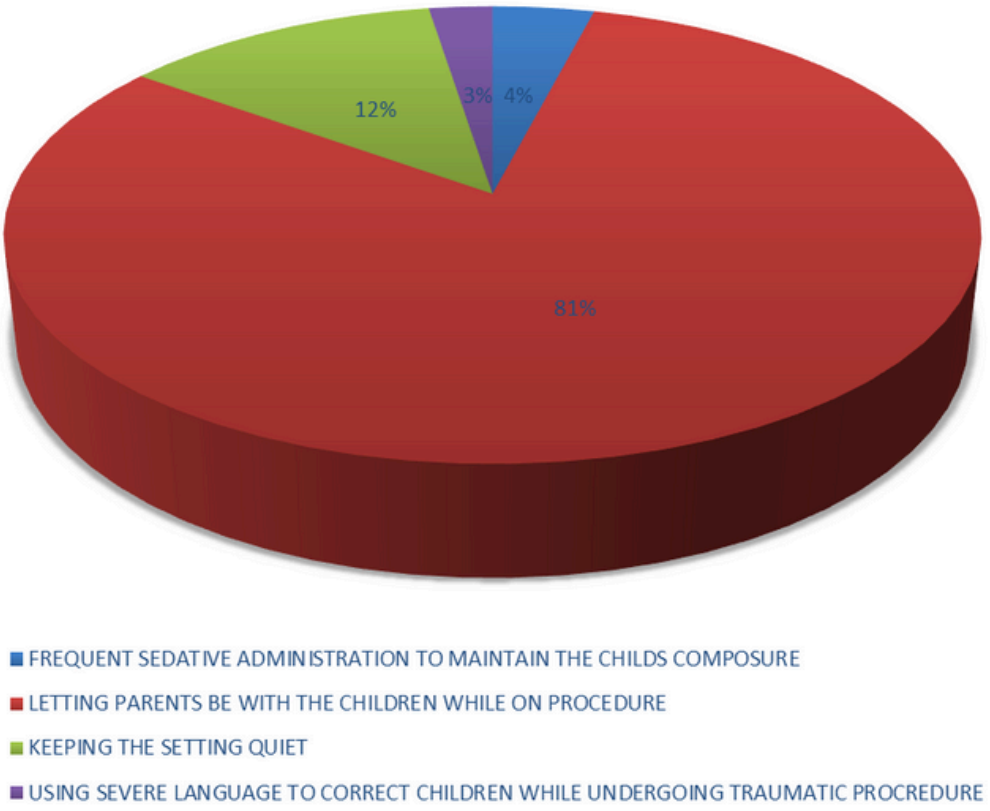


Illustration of Non-Pharmacologic Treatment in Easing Discomfort

When asked to illustrate non-pharmacologic interventions in atraumatic care, 81% of nurses correctly stated that allowing a parent to remain with the child during procedures is a valid method. Meanwhile, 12% cited creating a serene environment, also a correct approach. However, 4% incorrectly included frequent sedative use, and 3% mentioned the use of severe language—indicating minor gaps in understanding of non-pharmacologic strategies.

Figure 3:

Awareness and Implementation of Non-Pharmacologic Pain Management

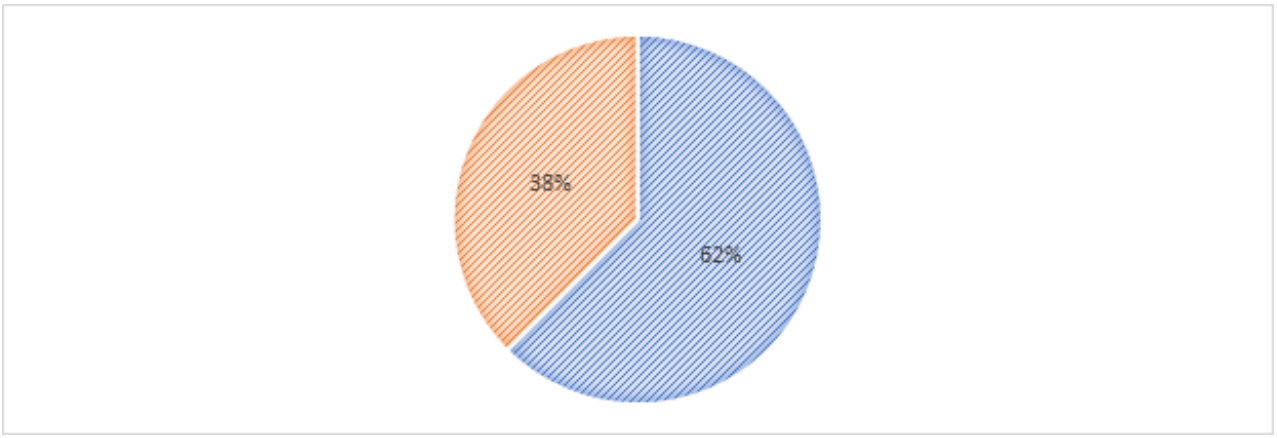


Perception of Atraumatic Care in Reducing Physical Discomfort During Procedures

When queried on whether atraumatic care reduces physical discomfort during medical procedures, 62% of respondents affirmed its effectiveness, demonstrating a majority awareness of its intended outcome. However, 38% disagreed, suggesting a significant knowledge gap that may impact how consistently these practices are implemented.

Figure 4:

Perceived Role of Personal Belief in Atraumatic Care Delivery



DISCUSSION

The findings of this study provide insightful evidence on the knowledge levels of nurses regarding atraumatic care principles, specifically focusing on their understanding of its objectives, appropriate and inappropriate techniques, non-pharmacologic interventions, and its effectiveness in minimizing physical discomfort. The overall results show encouraging trends in core knowledge areas, but also highlight critical gaps that could influence the consistency and effectiveness of atraumatic care implementation in pediatric hospital settings.

The fact that 91.7% of the nurses correctly identified the main objective of atraumatic care as the reduction of pain and discomfort reflects a high level of awareness of the foundational goals of this approach. This aligns with internationally recognized standards in pediatric nursing, where minimizing physical and psychological trauma during hospitalization is paramount. Atraumatic care, as a child-centered approach, prioritizes interventions that reduce fear, anxiety, and pain, while promoting safety and emotional well-being (Sillero Sillero et al., 2024). The small fraction of respondents who linked the objective of atraumatic care to reduced hospital stay (8.3%) may not be entirely incorrect, as reduced distress could indirectly support shorter hospitalizations, but their responses suggest a secondary rather than a primary understanding of the approach's intent. The complete absence of responses linking atraumatic care to non-clinical benefits, such as entertainment or financial gains, confirms that most nurses possess a focused and clinical comprehension of the concept.

However, when analyzing knowledge related to inappropriate pain management techniques, it becomes apparent that certain misconceptions persist (Sigakis and Bittner, 2015). While 81.3% correctly rejected the use of physical restraints, which are widely recognized as counterproductive and harmful in pediatric care, the 8.3% of respondents who viewed distraction techniques and procedural instructions as inadvisable demonstrate a misunderstanding of fundamental non-invasive pain management strategies. Distraction and pre-procedural explanation are key components of atraumatic care, proven to empower children and reduce anxiety (Brown, 2014). The misclassification of these techniques suggests that while nurses may be generally familiar with the term "atraumatic care," their grasp of specific evidence-based interventions may be incomplete or inconsistent. This may be attributed to limited exposure to structured continuing professional education on pediatric-specific psychosocial care models.

Similarly, the findings on non-pharmacologic treatment approaches further underscore this inconsistency. The majority (81%) correctly recognized that allowing a parent to be present during procedures is an effective non-pharmacologic strategy, reinforcing the critical role of family-centered care in reducing procedural stress and promoting emotional stability.

The 12% who cited the creation of a serene environment also demonstrated sound understanding, as environmental control is a recognized intervention for minimizing sensory overload in pediatric patients. However, the 4% who mentioned frequent sedative use and the 3% who considered the use of severe language as non-pharmacologic treatments point to concerning misconceptions. Sedatives are pharmacologic interventions and should not be conflated with behavioral or environmental strategies (Hughes et al., 2012). The notion that verbal reprimand could serve as a non-pharmacologic intervention contradicts the very philosophy of atraumatic care and may reflect lingering traditional disciplinary attitudes toward children in clinical environments.

The final area of assessment the perceived effectiveness of atraumatic care in reducing physical discomfort during procedures revealed a notable gap in understanding, with only 62% affirming its effectiveness, and 38% expressing doubt. While a simple majority recognized the benefits, the relatively high proportion of dissenting opinions is significant. This could suggest a lack of formal training, exposure, or practical integration of atraumatic principles within the facility's standard operating procedures. It may also reflect a gap between theoretical knowledge and experiential confidence, where nurses who have not observed or been trained in the clinical application of atraumatic care may struggle to attribute positive outcomes directly to these interventions (Hudson et al., 2015; Sowers, 2023).

These findings collectively highlight the importance of continuous professional development, particularly in the domain of pediatric nursing. While general awareness of atraumatic care is present among the majority of nurses, technical knowledge about specific techniques and their evidence-based benefits remains inconsistent (Ilmiasih and Ningsih, 2022; Nisa et al., 2024). These gaps could hinder the full realization of atraumatic care principles and limit their integration into daily pediatric practice. To address these inconsistencies, targeted training programs, refresher courses, and the integration of atraumatic care into hospital guidelines and protocols are recommended. Additionally, embedding these practices in nursing curricula, mentorship programs, and performance evaluations could foster a stronger, more uniform application of atraumatic principles. Future research may also consider evaluating the impact of structured training interventions on knowledge retention and clinical behavior, thus contributing to improved pediatric outcomes.

Conclusion

The study reveals that while nurses possess a general understanding of the objectives of atraumatic care, notable gaps exist in their knowledge of specific techniques and their application, potentially hindering effective impl

implementation in pediatric settings.

Recommendation

Targeted in-service training and continuous professional development programs on atraumatic care should be implemented to enhance nurses' technical knowledge and promote consistent, child-centered care practices.

Conflict of interest

Authors declare no conflict of interest.

Author's Contributions

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