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TO ASSESS KNOWLEDGE AND ATTITUDE AMONG NURSES REGARDING STOMA CARE IN CHILDREN'S HOSPITAL, LAHORE, PAKISTAN

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Abstract

Introduction: *Pediatric stoma care is a specialized area of nursing practice that requires adequate knowledge, appropriate clinical skills, and positive professional attitudes. Nurses play a central role in preventing stoma-related complications, educating caregivers, and improving the quality of life of children living with a stoma. Deficiencies in knowledge or negative attitudes may compromise patient outcomes and the quality of nursing care.*

Objective: *To assess the knowledge and attitude regarding stoma care among nurses working at The Children's Hospital, Lahore.*

Methodology: *A quantitative cross-sectional study was conducted among nurses working at The Children's Hospital, Lahore. Data were collected using a structured questionnaire consisting of demographic characteristics, knowledge-related questions, and attitude-related questions regarding pediatric stoma care. The collected data were entered and analyzed using appropriate statistical methods to describe participants' characteristics and evaluate their knowledge and attitudes toward stoma care.*

Findings: *The findings demonstrated variability in nurses' knowledge regarding pediatric stoma care. Participants generally showed satisfactory understanding of several fundamental aspects of stoma assessment, appliance management, postoperative care, and patient education. However, knowledge gaps were identified in specific clinical concepts, indicating the need for additional educational interventions and continuing professional development. The study also found that nurses generally expressed positive attitudes toward providing stoma care, emphasizing the importance of patient education, individualized care, and family support in achieving better clinical outcomes.*

Conclusion: *The study concludes that although nurses demonstrated an acceptable level of knowledge and positive attitudes regarding pediatric stoma care, several important knowledge deficiencies remain. Regular educational programs, competency-based training, and continuing professional development are recommended to strengthen nurses' clinical competence and promote evidence-based pediatric stoma care in tertiary healthcare settings.*

BACKGROUND

Pediatric stoma formation is performed for congenital anomalies, inflammatory bowel disease, trauma, and oncological conditions. Although these surgical procedures improve survival and quality of life, they require comprehensive postoperative management to prevent complications and promote successful rehabilitation. Nurses play a pivotal role in pediatric stoma care through assessment, appliance management, patient and family education, and continuous monitoring. Their knowledge and competence directly influence patient outcomes and the quality of care provided.

Children with stomas are particularly susceptible to complications such as peristomal skin breakdown, infection, poor psychological adjustment, body image disturbances, and reduced self-esteem. Consequently, nursing care should combine technical competence with compassionate, age-appropriate, and family-centered support. Continuous education and adherence to evidence-based practice are essential to improve nursing performance and enhance patient outcomes (Gauci M. et al., 2021).

In Pakistan, nurses acquire knowledge of pediatric stoma care through formal nursing education, clinical practice, continuing education, and professional training. However, maintaining competency requires regular updating of knowledge and skills because pediatric stoma management continues to evolve. Children's Hospital in Lahore provide specialized services to pediatric patients from diverse socioeconomic backgrounds; therefore, evaluating nurses' knowledge and attitudes toward pediatric stoma care is essential for improving the quality of healthcare services.

1.2. PROBLEM STATEMENT:

Effective pediatric stoma care requires nurses to possess adequate knowledge, positive attitudes, and appropriate clinical skills. Inadequate understanding of stoma assessment, postoperative management, appliance care, and patient education may contribute to preventable complications, delayed recovery, and reduced quality of care. Despite the growing number of pediatric patients requiring stoma formation, limited evidence is available regarding nurses' knowledge and attitudes toward pediatric stoma care in specialized healthcare settings in Lahore. Therefore, this study was conducted to assess nurses' knowledge and attitudes regarding stoma care at The Children's Hospital, Lahore, and to identify areas requiring educational improvement.

1.3. SIGNIFICANCE

This study provides valuable information regarding nurses' knowledge and attitudes toward pediatric stoma care in a tertiary care children's hospital. Identifying knowledge gaps may assist nursing educators, hospital administrators, and policymakers in developing targeted educational programs, competency-based training, and continuing professional development activities.

OBJECTIVE

To assess the knowledge and attitude regarding stoma care among nurses working at The Children's Hospital, Lahore.

CHAPTER 2:
LITERATURE REVIEW

Pediatric stoma care remains a specialized area of nursing practice requiring comprehensive knowledge, technical competence, and effective patient education. Despite its clinical importance, research specifically examining nurses' knowledge and practices in pediatric settings within Lahore remains limited.

Colorectal cancer is recognized as a major global health problem because of its increasing incidence and mortality. In the United States, it is the third most common malignancy and the fourth leading cause of cancer-related mortality worldwide, accounting for approximately one million new cases annually (Arnold et al., 2017). The increasing incidence of colorectal and urinary diseases has resulted in a corresponding rise in stoma surgeries. Education provided by enterostomal therapists during postoperative hospitalization and discharge has been shown to improve patients' self-efficacy in ostomy management (Gauci, M., 2021).

Globally, a substantial number of individuals are living with permanent stomas. The United Ostomy Association reported that more than 750,000 Americans live with an ostomy, with approximately

36% undergoing colostomy procedures. Approximately 15,000 individuals are living with stomas in Hong Kong, around 32,000 in the Netherlands, and nearly 650,000 in Egypt, where approximately 3,000 new stoma surgeries are performed annually (Gottschall, R., 2018; Johnson, 2018).

Stoma formation is indicated for numerous gastrointestinal and genitourinary disorders, including colorectal cancer, inflammatory bowel disease, diverticular disease, intestinal obstruction, gastrointestinal trauma, and gynecological malignancies (Shaw S. M., 2020).

Living with a stoma presents physical, psychological, and social challenges that require ongoing nursing support, patient education, and family involvement. Research has consistently emphasized that nurses play a fundamental role in improving adaptation, preventing complications, and promoting quality of life among pediatric patients with stomas (Brown & Gournay, 2020; Callaghan & Cooke, 2019; Gottschall, 2018).

Studies have further demonstrated that structured education improves both nurses' competence and patients' ability to perform self-care. However, deficiencies in stoma care practices continue to exist.

Pattanaik (2018) reported that approximately 80% of patients did not perform stoma irrigation correctly, whereas only a small proportion demonstrated satisfactory practice, highlighting the continuing need for effective education and professional support (Pattanaik, 2018).

Overall, existing evidence supports the importance of competent nursing care in pediatric stoma management. Nevertheless, local evidence regarding nurses' knowledge and attitudes in children's hospitals of Lahore remains scarce, emphasizing the need for the present study to generate context-specific findings and guide future educational interventions

CHAPTER 3:
MATERIAL AND METHODS

The study design, parameter of interest, setting, study population and sample, inclusion and exclusion criteria, study process, tool description, intervention, and data analysis strategy are all covered in detail in this chapter's explanation of the methodology.

3.1. Research Design:

A quantitative cross-sectional study was conducted to assess the knowledge and attitudes regarding pediatric stoma care among nurses working at The Children's Hospital, Lahore. The study was designed to evaluate nurses' understanding of stoma care principles and their attitudes toward providing care to pediatric patients with stomas.

3.2. Setting:

The Children's Hospital, Lahore was the site of study.

3.3. Study Population

The study population comprised registered nurses employed at The Children's Hospital, Lahore, who were directly involved in providing nursing care to pediatric patients.

3.4. Operational Definitions:

3.4.1. Knowledge:

Knowledge refers to the nurses' understanding of pediatric stoma care, including stoma assessment, postoperative management, appliance care, complication prevention, and patient education. In this study, knowledge was measured using a structured questionnaire, and participants' responses were scored according to the predetermined scoring criteria provided in the instrument.

3.4.2. Attitude:

Attitude refers to the nurses' beliefs, perceptions, and willingness to provide pediatric stoma care. It was assessed using attitude-related items included in the structured questionnaire, with responses reflecting participants' perspectives toward caring for children with stomas.

3.4.3. Pediatric Stoma Care

Pediatric stoma care refers to the comprehensive nursing care provided to children with surgically created stomas, including assessment, appliance management, skin care, prevention of complications, and patient and caregiver education.

3.5. Study Duration:

It will take four months to complete the investigation which included data collection and analysis

3.6. Sample Size:

The sample size was calculated using **Slovin's sampling formula**:

n=sample size. N = population size (240)

e= error margin (5%).

The total study population consisted of **240 staff nurses**. Applying Slovin's formula:

Formula:

$$n = \frac{N}{1+N(e)2}$$

$n = 240 / 1 + (240 \times 0.05^2)$

$n = 240 / 1 + (240 \times 0.0025)$

$n = 240 / 1 + 0.6$

$n = 240 / 1.6$

$n = 150$

Accordingly, the final sample size for the study was **150 participants**.

3.7. Sampling Technique:

A **convenience sampling technique** was used to recruit participants who fulfilled the study eligibility criteria.

3.8. Inclusion and exclusion criteria:

3.8.1. Inclusion Criteria:

The study included:

- Staff nurses working in the **Surgery Department** of the selected tertiary care hospital in Lahore.

3.8.2. Exclusion Criteria:

The following participants were excluded from the study:

- Nursing staff working in departments other than the Surgery Department.

3.9. Data Collection Procedure

Data were collected using a **well-adopted structured questionnaire**, which consisted of three sections:

- **Section A:** Demographic characteristics, including participants' age, duration of work in the surgery department, and educational level.
- **Section B:** Seventeen (17) items designed to assess nurses' knowledge regarding stoma care.
- **Section C:** Fifteen (15) items developed to assess nurses' attitudes regarding stoma care.

3.10. Data Analysis Procedure

The collected data were entered and analyzed using the **Statistical Package for the Social Sciences (SPSS), version 22**. Descriptive statistics were used to summarize the data, and the findings were presented in the form of **frequencies, percentages, and bar charts**.

3.11. Ethical Consideration:

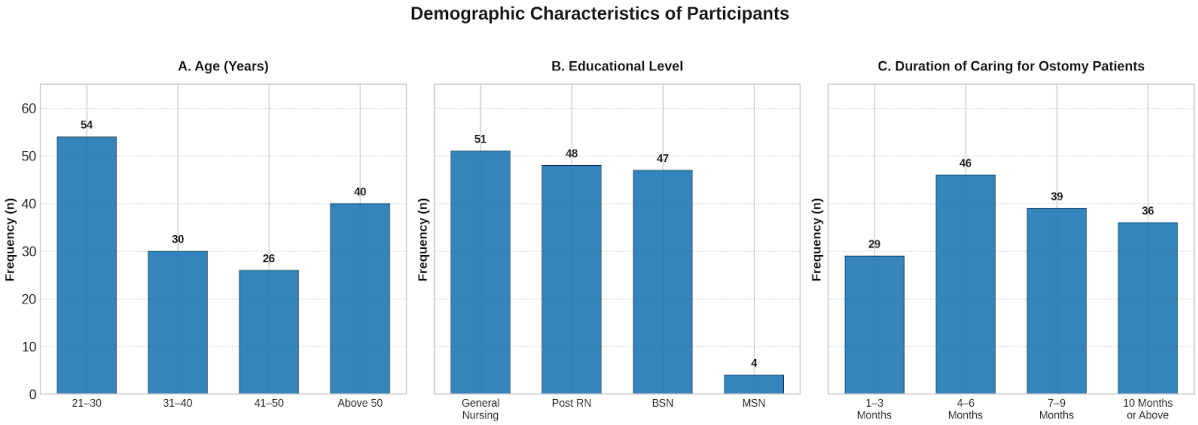
Ethical principles were observed throughout the study, and participants' rights were fully respected.

- Written informed consent was obtained from all participants before data collection. Participants were informed of their right to withdraw from the study at any time without penalty.
- Participants were assured that all information would remain confidential. Personal identifiers, including names, designations, and addresses, were not disclosed.
- The collected data were reported honestly without fabrication, falsification, or manipulation to achieve the desired results.
- Participation in the study was entirely voluntary, and no rewards, incentives, or coercive measures were used to influence participation.

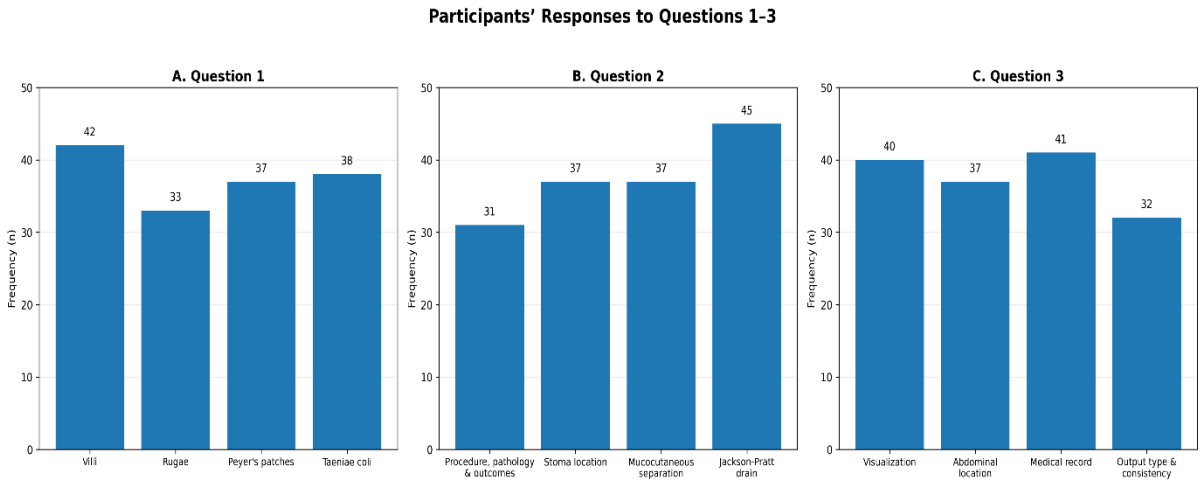
CHAPTER 4:
RESULTS

This chapter presents the findings of the study on the knowledge and attitudes regarding stoma care among staff nurses working at The Children's Hospital, Lahore. The findings are presented in a logical sequence, beginning with the demographic characteristics of the participants, followed by the assessment of nurses' knowledge and attitudes regarding stoma care. Data are summarized using frequencies, percentages, and tables, with brief interpretations provided to facilitate understanding of the results.

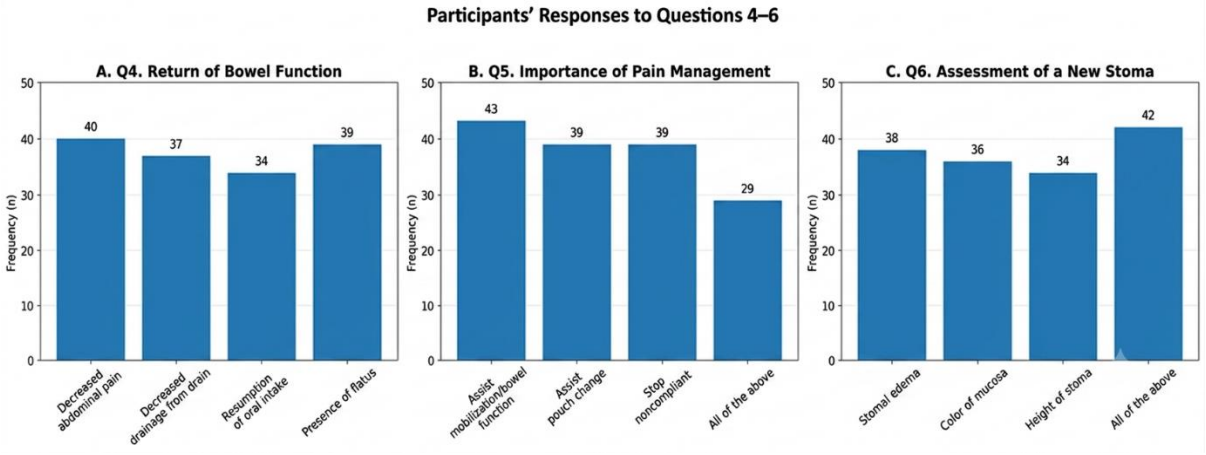
Interpretation: Demographic characteristics of the 150 participants included in the study. Regarding age, the largest proportion of participants (**36.0%**) were aged **21-30 years**, followed by those aged **above 50 years** (**26.7%**), while participants aged **31-40 years** and **41-50 years** constituted **20.0%** and **17.3%**, respectively. In terms of educational level, **34.0%** of the participants held a **General Nursing** qualification, **32.0%** had completed **Post RN**, **31.3%** possessed a **BSN** degree, and only **2.7%** had an **MSN** qualification. Regarding clinical experience in caring for ostomy patients, the highest proportion (**30.7%**) had **4-6 months** of experience, followed by **26.0%** with **7-9 months**, **24.0%** with **10 months or above**, and **19.3%** with **1-3 months** of experience.



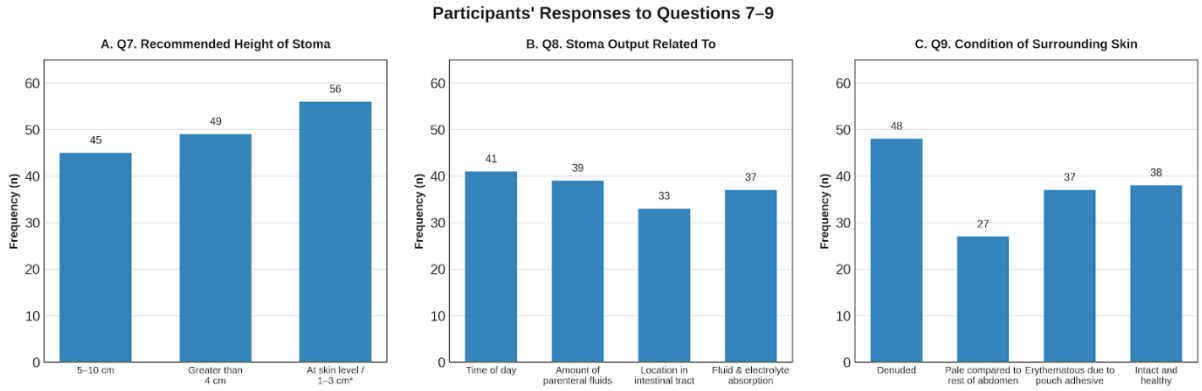
Interpretation: Participants demonstrated considerable variation in responses to questions concerning basic gastrointestinal anatomy and stoma assessment. Villi were the most frequently selected response for Q1 (28.0%). For Q2, the presence of a Jackson-Pratt drain was selected most often (30.0%), while examination of the medical record was the most frequently selected response for Q3 (27.3%). Overall, the relatively close distribution of responses suggests variability in participants' knowledge of fundamental stoma assessment principles.



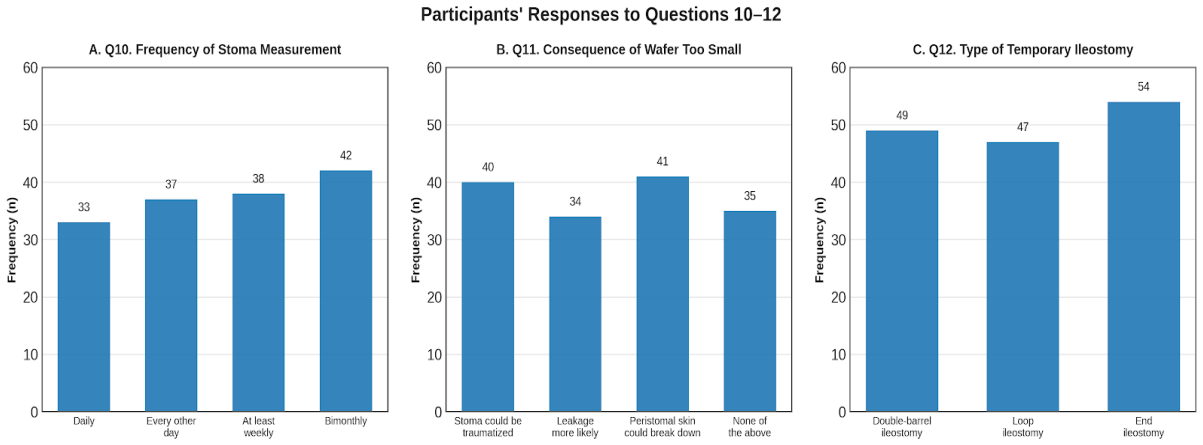
Interpretation: Responses to Questions 4–6 showed variability in participants' understanding of postoperative recovery and stoma assessment. Decreased abdominal pain was the most frequently



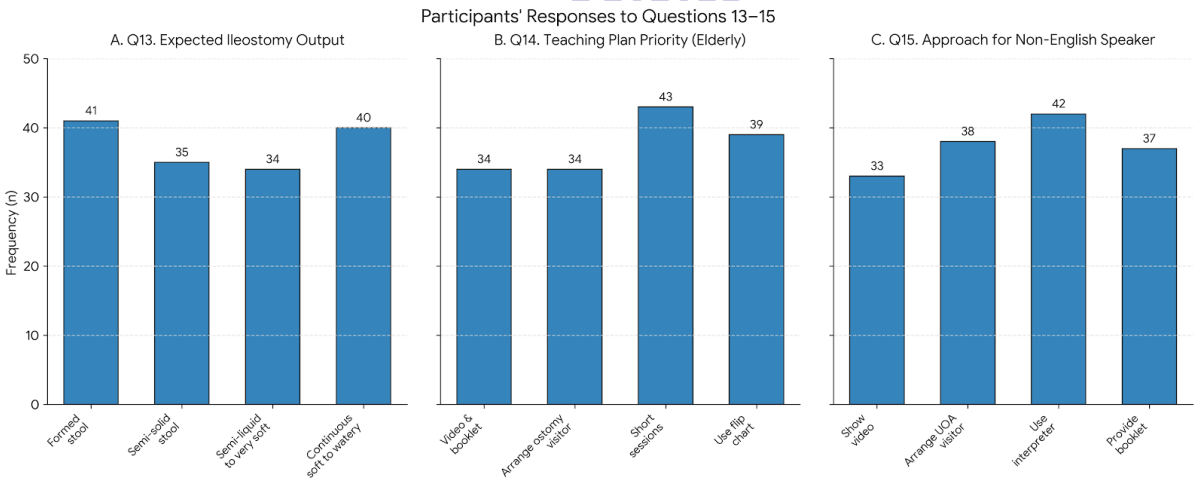
selected response for Q4 (26.7%), closely followed by presence of flatus (26.0%). For Q5, assisting mobilization and hastening bowel function was most frequently selected (28.7%). In Q6, "all of the above" was the most common response (28.0%), indicating recognition that assessment of a newly created stoma involves multiple characteristics.



Interpretation: Participants demonstrated varied responses regarding stoma characteristics, output, and peristomal skin care. The combined "at skin level/1–3 cm" category was selected most frequently for Q7 (37.3%). For Q8, time of day was the most frequently selected response (27.3%), followed by parenteral fluid intake (26.0%). For Q9, denuded skin was selected by 32.0%, whereas 25.3% selected intact and healthy skin. These findings indicate variability in participants' understanding of appropriate stoma characteristics and peristomal skin care.

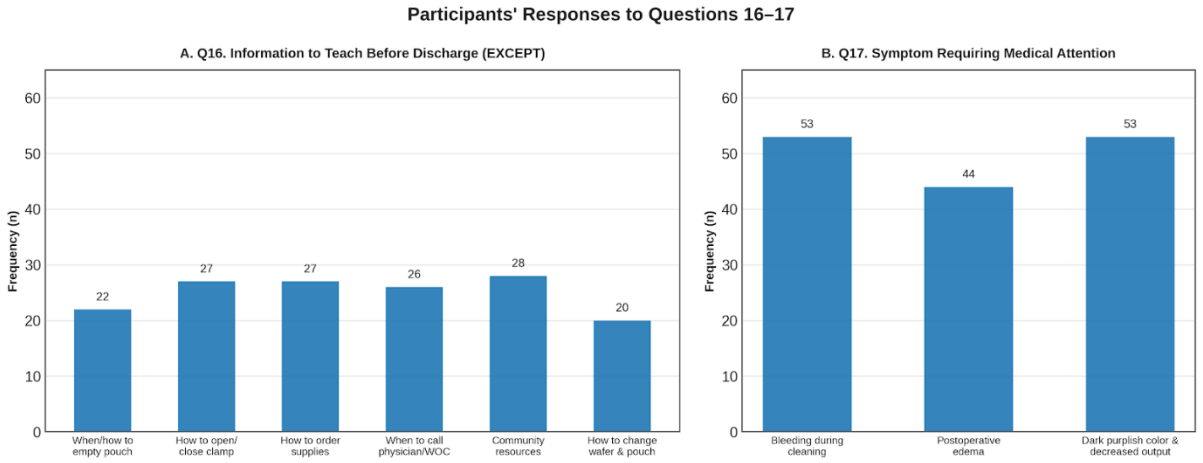


Interpretation: Responses to Q10–Q12 demonstrated relatively dispersed knowledge of stoma measurement, appliance fitting, and ileostomy types. Bimonthly measurement was the most frequently selected response for Q10 (28.0%). For Q11, peristomal skin breakdown was the most frequently selected consequence of cutting the wafer too small (27.3%), closely followed by stoma trauma (26.7%). End ileostomy was the most frequently selected response for Q12 (36.0%). Overall, the findings demonstrate considerable variation in responses across these aspects of ostomy care.



Interpretation: Responses reflected variation in participants' understanding of ileostomy output and patient education strategies. Formed stool was the most frequently selected response for Q13 (27.3%), closely followed by continuous soft to watery effluent (26.7%). For Q14, short teaching sessions were most frequently selected (28.7%). In Q15, use of an interpreter was the most frequently selected approach (28.0%), indicating recognition of the importance of addressing language barriers during patient education.

Interpretation: Responses to Q16–Q17 showed variation in participants' understanding of ostomy discharge education and recognition of potentially serious stoma findings. Community resources were the most frequently selected response for the Q16 exception (18.7%), while changing the wafer and pouch was least frequently selected (13.3%). For Q17, bleeding during cleaning and dark purplish discoloration with decreased output were equally selected (35.3%), while postoperative edema was selected by 29.3%. Overall, the findings indicate variability in participants' recognition of key discharge education components and concerning stoma manifestations.



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CHAPTER 5: DISCUSSION

The current study was conducted to assess nurses' knowledge regarding ostomy care in a tertiary care hospital in Lahore. Adequate knowledge of ostomy management is essential for preventing complications, improving patient outcomes, and ensuring effective postoperative care. The study evaluated nurses' understanding of stoma assessment, appliance management, patient education, and recognition of complications.

The findings revealed variations in nurses' knowledge regarding different aspects of ostomy care. Regarding basic gastrointestinal anatomy and stoma assessment, responses showed uncertainty among participants. Villi were selected by 28.0% of participants as the structure responsible for small bowel absorption, while responses regarding assessment of new fecal diversion and identification of stoma type also showed variation. These findings indicate gaps in understanding fundamental concepts of ostomy assessment.

Knowledge related to postoperative care, bowel function recovery, pain management, and stoma assessment also demonstrated variability. Decreased abdominal pain (26.7%) and presence of flatus (26.0%) were the most frequently identified indicators of bowel function recovery. Furthermore, 28.7% recognized that pain management assists patient mobilization and hastens bowel function, while 28.0% identified that assessment of a newly created stoma involves multiple factors including edema, mucosal color, and stoma height.

Regarding stoma characteristics and peristomal skin care, participants demonstrated mixed understanding. The recommended stoma height of skin level/1–3 cm was selected by 37.3% of nurses. However, misconceptions were observed regarding stoma output factors and peristomal skin condition, as 32.0% selected denuded skin instead of intact and healthy skin. These findings highlight the need for improved education regarding prevention of peristomal complications.

The study further revealed variations in knowledge regarding appliance management, stoma measurement, and ileostomy types. Peristomal skin breakdown was the most frequently identified consequence of cutting the wafer too small (27.3%), while end ileostomy was selected by 36.0% of participants. These findings emphasize the importance of practical training related to appliance fitting and surgical variations of ostomies.

Patient education was another important area assessed in this study. Participants demonstrated varying knowledge regarding ileostomy output and teaching strategies. Short teaching sessions for elderly patients were selected by 28.7%, while 28.0% recognized the importance of using an interpreter for patients with language barriers. Regarding discharge education and complications, dark purplish discoloration with decreased output and bleeding during cleaning were identified by 35.3% of participants as concerning symptoms requiring medical attention.

Overall, the study findings indicate that nurses possess some knowledge regarding ostomy care; however, gaps remain in several areas including stoma assessment, peristomal skin care, appliance management, patient education, and complication recognition. Continuous professional development, structured training programs, and evidence-based ostomy care education are essential to improve nurses' competency and enhance patient care outcomes.

Conclusion

The current study was conducted to assess nurses' knowledge regarding ostomy care in a tertiary care hospital in Lahore. The findings revealed that nurses demonstrated varying levels of knowledge across different aspects of ostomy care, including stoma assessment, postoperative management, appliance care, patient education, and recognition of complications. Although participants showed adequate understanding in some areas, misconceptions and knowledge gaps were evident in several key domains. These findings indicate the need to strengthen nurses' knowledge through continuous

education and practical training. Improving nurses' competency in ostomy care can enhance patient safety, reduce complications, and improve the quality of nursing care provided to patients with ostomies.

Limitation of study:

The study had several limitations. It was conducted in only one tertiary care hospital in Lahore; therefore, the findings cannot be generalized to all healthcare settings. The sample size was limited to 150 participants, which may not fully represent the knowledge of all nurses involved in ostomy care. Furthermore, the cross-sectional design assessed knowledge at a single point in time and could not determine changes over time or establish causal relationships. The use of a self-administered questionnaire may also have introduced response bias.

Recommendation:

- Regular in-service education and training workshops on ostomy care should be conducted for nursing staff.
- Comprehensive ostomy care content should be strengthened in undergraduate and postgraduate nursing curricula.
- Healthcare institutions should develop and implement standardized evidence-based protocols for ostomy management.
- Simulation-based and hands-on clinical training should be provided to improve practical skills in stoma assessment and appliance management.
- Patient education regarding ostomy self-care should be standardized before discharge to improve long-term outcomes.
- Future studies should include multiple healthcare institutions and larger sample sizes to improve the generalizability of findings.

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