

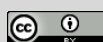
# Paediatric Ileostomy — Challenges and Remedies - Experience from A Tertiary Care Hospital

DOI: [dx.doi.org](https://doi.org/10.21960/tp.2024.8.1.48-51)Mozammel Haque Chowdhury<sup>1\*</sup>, Alamgir Hossain<sup>2</sup>, Rumana Parveen<sup>3</sup>, Aminur Rashid<sup>4</sup>

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## ABSTRACT

**Introduction:** Intestinal stomas are critical surgical interventions used to manage various gastrointestinal surgical conditions either congenital or acquired. This study aims to evaluate the management practices and complications associated with ileostomy care at Dhaka Shishu (Children) Hospital in Dhaka, Bangladesh. **Methods & Materials:** This prospective observational study was conducted at the Department of Pediatric Surgery, Dhaka Shishu (Children) Hospital, from March 2017 to September 2019. A total of 67 patients, aged from 1 day to 18 years requiring ileostomy care, were included. Data were collected on demographic details, clinical characteristics, types of ileostomies performed, skin excoriation, and other postoperative complications. The management included the use of linseed oil or zinc oxide paste as needed. **Results:** The majority of participants (79.10%) were within 1 month of age. The primary diagnoses included meconium ileus (49.25%), ileal atresia (28.36%), Hirschsprung disease (10.45%), and intussusception (11.94%). Double-barreled ileostomy was performed in 62.69% of cases, Bishop Koop ileostomy in 28.36%, and loop ileostomy in 8.96%. No skin excoriation was observed in 44.78% of participants, with first-degree excoriation in 50.75% and no cases of second-degree excoriation. Notably, there were no instances of wound infection or wound dehiscence among the participants. **Conclusion:** This study demonstrates effective management practices for pediatric ileostomy care at Dhaka Shishu (Children) Hospital, with a low incidence of complications. The results emphasize the importance of tailored surgical techniques and comprehensive postoperative care in improving patient outcomes.

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**Keywords:** Pediatric Ileostomy, Intestinal Stomas, Postoperative Complications, Skin Excoriation, Surgical Management.

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## INTRODUCTION

Intestinal stomas are surgically created openings that connect a part of the intestine to the abdominal surface allowing for the diversion of fecal matter. There are three main types of intestinal stoma: Colostomy, Ileostomy & Ileal conduit [1]. These procedures are crucial in managing various gastrointestinal conditions, especially in pediatric surgery. Stomas serve as essential interventions in cases where intestinal continuity must be temporarily or permanently disrupted to protect healing tissues or bypass obstructed or diseased sections of the gastrointestinal tract. The importance of intestinal stomas in pediatric cases is underscored by their necessity in conditions such as congenital malformations, necrotizing enterocolitis (NEC), bowel perforations, and other acute conditions requiring immediate surgical intervention. These conditions often present significant challenges and risks, particularly in neonates and young children who are already vulnerable due to their age and underlying health issues. Complications following creation of ileostomy are prolapse, retraction, stenosis, parastomal hernia, skin

excoriation [2]. In South Asia, and particularly in Bangladesh, the burden of pediatric gastrointestinal conditions necessitating stomas is substantial, yet detailed epidemiological data remain sparse, underscoring the critical need for focused research in this area [3]. The management of intestinal stomas in children involves a multi-faceted approach that includes meticulous surgical techniques, diligent post-operative care, and long-term management strategies. Standard practices for managing pediatric stomas include the use of proper stoma care products and comprehensive nursing care to ensure effective management and reduce the incidence of complications. Proper training and support for caregivers and comprehensive nursing care significantly enhances the well-being of both the patient and their family [4]. Additionally, pre-operative bowel preparation and meticulous surgical techniques, can result in low complication rates and favorable outcomes [5,6]. Despite advancements in stoma care products and techniques, resource-limited settings like Bangladesh face significant challenges, including limited access to specialized care,

inadequate training of caregivers, and insufficient resources for optimal stoma management. Complications associated with pediatric stomas are varied and can significantly impact the quality of life for both patients and their families. Common complications include peristomal skin irritation, infections, stoma prolapse, and psychological distress. Early complications such as skin irritation and infections are frequent, emphasizing the need for proper care and timely management to reduce these issues [7,8]. Furthermore, stoma-related complications in neonates with NEC, such as stoma prolapse and surgical site infections, have been documented, with prematurity and low preoperative weight identified as significant risk factors [9]. These complications not only affect the immediate health of the child but also have profound impacts on their long-term quality of life and that of their caregivers. The psychological burden on families caring for children with stomas is significant, necessitating comprehensive support systems to aid in their management and improve their overall well-being [10]. Effective management of stomas in pediatric patients, particularly in resource-limited settings, requires addressing both technical and care-related challenges. Research conducted in Tanzania highlighted the common indications for stoma formation and the associated complications, such as stoma prolapse and infections, stressing the need for specialized training and meticulous surgical techniques to mitigate these risks [7]. Additionally, the study underscored the importance of providing adequate support and education to caregivers to ensure they are equipped to manage stoma care effectively at home. The management of intestinal stomas in pediatric cases present significant challenges, particularly in resource-limited settings like Bangladesh. Addressing these challenges requires a comprehensive approach that includes proper surgical techniques, effective post-operative care, and robust support systems for caregivers. This study aims to fill the gap in research by providing comprehensive data on the prevalence of complications, evaluating current management practices, and suggesting context-specific improvements tailored to the unique challenges faced in Dhaka Shishu Hospital. The findings from this study will have significant implications for clinical practice and public health strategies, ultimately aiming to improve the quality of life for pediatric patients with ileostomy and their families.

## METHODS & MATERIALS

This prospective observational study was conducted at the Department of Pediatric Surgery, Dhaka Shishu (Children) Hospital, Bangladesh. The study duration was from March 2017 to September 2019. The study population comprised patients admitted to Dhaka Shishu (Children) Hospital who required ileostomy care during the study period. A total of 67 patients were included based on specific inclusion and exclusion criteria. The inclusion criteria were patients with newly constructed temporary ileostomy, aged from 1 day to 18 years, and of both sexes. The patients with pre-existing skin excoriation and severe malnutrition were excluded. A purposive sampling technique was employed to select participants, ensuring that all eligible patients admitted

during the study period were included. The management of patients involved the use of either linseed oil or zinc oxide paste as required, based on the clinical judgment of the attending healthcare professionals. Data were collected prospectively from medical records and through direct observation and interaction with the patients and their caregivers, including demographic details, clinical characteristics, management protocols, and complications associated with ileostomy care. The study was conducted in accordance with the ethical standards of the Bangladesh Institute of Child Health and Dhaka Shishu (Children) Hospital, with written informed consent obtained from parents or legal guardians. Patient data confidentiality was strictly maintained throughout the research process.

## RESULTS

**Table – I: Distribution of participants by baseline characteristics (n=67)**

Baseline Characteristics	Frequency	Percentage
<b>Age</b>		
Within 1 month	53	79.10%
More than 1 month to 1 year	5	7.46%
More than 1 year	9	13.43%
<b>Gender</b>		
Male	38	56.72%
Female	29	43.28%
<b>Primary Diagnosis</b>		
Meconium ileus	33	49.25%
Ileal atresia	19	28.36%
Hirschsprung disease	7	10.45%
Intussusception	8	11.94%

The study included a total of 67 participants who required ileostomy care. The majority of the participants, 53 (79.10%), were within 1 month of age, while 5 (7.46%) were between more than 1 month to 1 year, and 9 (13.43%) were older than 1 year. In terms of gender distribution, 38 participants (56.72%) were male, and 29 (43.28%) were female. The primary diagnoses necessitating ileostomy were predominantly meconium ileus, affecting 33 patients (49.25%). This was followed by ileal atresia in 19 patients (28.36%), Hirschsprung disease in 7 patients (10.45%), and intussusception in 8 patients (11.94%).

**Table – II: Distribution of participants by types of operation (n=67)**

Types of operation	Frequency	Percentage
Double barreled ileostomy	42	62.69%
Bishop Koop ileostomy	19	28.36%
Loop ileostomy	6	8.96%

Among the 67 participants, the types of operations performed were predominantly double-barreled ileostomy, which accounted for 42 cases (62.69%). This was followed by Bishop Koop ileostomy, performed in 19 cases (28.36%), and loop ileostomy, which was carried out in 6 cases (8.96%).

**Table – III: Distribution of participants by area of excoriation (n=67)**

Area of excoriation	Frequency	Percentage
Absent	30	44.78%
Up to 1.5	18	26.87%
2-2.5	11	16.42%
> 3	8	11.94%

The distribution of participants by the area of excoriation revealed that 30 participants (44.78%) had no excoriation. Among those who experienced excoriation, 18 participants (26.87%) had an excoriation area up to 1.5 cm<sup>2</sup>, 11 participants (16.42%) had an excoriation area between 2 and 2.5 cm<sup>2</sup>, and 8 participants (11.94%) had an excoriation area greater than 3 cm<sup>2</sup>.

**Table – IV: Distribution of participants by degree of excoriation (n=67)**

Degree of excoriation	Frequency	Percentage
0 degree	33	49.25%
1 <sup>st</sup> degree	34	50.75%
2 <sup>nd</sup> degree	0	0.00%

The degree of excoriation among the participants showed that 33 participants (49.25%) had no excoriation (0 degree), while 34 participants (50.75%) experienced first-degree excoriation. There were no cases of second-degree excoriation reported.

**Table – V: Distribution of participants by postoperative complications (n=67)**

Complications	Frequency	Percentage
<b>Wound infection</b>		
Absent	67	100.00%
Present	0	0.00%
<b>Wound dehiscence</b>		
Absent	67	100.00%
Present	0	0.00%

Regarding postoperative complications among the participants, there were no cases of wound infection or wound dehiscence reported. All 67 participants (100.00%) did not experience wound infection or wound dehiscence.

## DISCUSSION

The findings of this study provide critical insights into the management and complications associated with ileostomy care in pediatric patients at Dhaka Shishu (Children) Hospital. The majority of our participants were neonates, with 79.10% within 1 month of age, which aligns with the global trends observed in similar studies where early surgical intervention is often necessitated by severe gastrointestinal conditions in newborns [11,12]. This demographic skew towards younger patients underscores the urgency and critical nature of such interventions in the neonatal period, particularly in cases of congenital anomalies such as meconium ileus and ileal atresia,

which were the primary diagnoses in 49.25% and 28.36% of our patients, respectively. The gender distribution in our study, with males comprising 56.72% of the participants, is consistent with findings from other pediatric surgical studies, which often report a higher incidence of gastrointestinal anomalies in males [13]. This observation is crucial for tailoring specific management and intervention strategies that consider gender-based differences in pediatric surgical care. In terms of the types of ileostomy performed, double-barreled ileostomy was the most common procedure, accounting for 62.69% of cases. This preference for double-barreled ileostomy is supported by its efficacy in managing severe cases of intestinal atresia and other complex conditions, as documented in comparative studies [14,15]. The use of Bishop Koop ileostomy and loop ileostomy, performed in 28.36% and 8.96% of cases respectively, highlights the adaptability of surgical approaches based on the specific clinical needs of the patients. Studies have shown varying outcomes with these techniques, indicating that the choice of procedure must be carefully tailored to individual patient profiles to optimize outcomes [16,17]. A significant portion of our patients did not experience any skin excoriation, with 44.78% showing no signs of this complication. This outcome is favorable compared to studies that report higher rates of skin complications among pediatric ileostomy patients [18]. The use of effective stoma care products and diligent postoperative care in our study likely contributed to this positive outcome. Among those who did experience excoriation, the severity was mostly mild, with 50.75% experiencing only first-degree excoriation. The absence of more severe excoriation degrees further underscores the effectiveness of our management protocols. Comparative studies have highlighted the importance of specialized stoma care and the use of protective barriers to minimize skin complications, reinforcing our findings [19,20]. Remarkably, our study reported no instances of wound infection or wound dehiscence among the participants. This is particularly notable given that these complications are common in pediatric surgical patients, often leading to increased morbidity and prolonged hospital stays. The absence of such complications in our cohort aligns with best practices in surgical care, including meticulous surgical techniques and effective postoperative management [21,22]. Studies comparing primary and delayed primary closure techniques, as well as the use of negative pressure wound therapy, have demonstrated significant reductions in wound infection and dehiscence rates, supporting the outcomes observed in our study [23–25]. In conclusion, the findings from our study provide valuable evidence supporting the effectiveness of current management practices for pediatric ileostomy care at Dhaka Shishu (Children) Hospital. The low incidence of complications, particularly skin excoriation, wound infection, and wound dehiscence, highlights the importance of tailored surgical approaches and diligent postoperative care. These results are consistent with broader trends in pediatric surgical care, emphasizing the critical role of early intervention and specialized management in improving patient outcomes. Future research should continue to explore the long-term outcomes of these patients and the

potential benefits of integrating advanced wound care technologies and protocols to further enhance care quality.

# Limitations of The Study

The study was conducted in a single hospital with a small sample size. So, the results may not represent the whole community.

# CONCLUSION

This study provides valuable insights into the management and outcomes of ileostomy care in pediatric patients at Dhaka Shishu (Children) Hospital. The findings highlight a significant number of neonatal cases, underscoring the critical need for early surgical interventions in congenital gastrointestinal conditions. The predominance of double-barreled ileostomy as the preferred surgical approach, along with the effective management of skin excoriation and the complete absence of wound infections and wound dehiscence, reflect the efficacy of current management practices. These outcomes align well with global standards and emphasize the importance of tailored surgical techniques, comprehensive postoperative care, and robust support systems in enhancing patient outcomes.

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**Ethical approval:** The study was approved by the Institutional Ethics Committee

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