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Availability and Distribution of Stoma Bags for Colorectal Cancer Patients: A Case Study at National Referral and Private Hospitals

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Abstract

Stoma bags are essential for colorectal cancer (CRC) patients with stomas. However, access and affordability in Indonesia remain challenging as the National Health Insurance (NHI) does not fully cover these devices. This study aimed to describe the availability and distribution of stoma bags for patients with CRC in national referral and private hospitals, focusing on outpatient access. A qualitative case study was conducted through observations and in-depth interviews with four enterostomal therapy nurses and six patients across three national referral hospitals and one private hospital in the Jakarta Metropolitan Area, Indonesia. Notably, the availability of stoma bags was limited in both hospital types, especially for outpatients. Most patients faced financial barriers, as they had to purchase stoma bags independently at high prices because of limited hospital supply and lack of NHI coverage. Moreover, hospital policies restricted the number of bags distributed, worsening access issues. These challenges increase stoma-related complication risk and negatively affect patients' quality of life. Integrating stoma bags into NHI coverage, regulating prices, and improving distribution are recommended to reduce healthcare disparities and improve outcomes for CRC patients, aligning with Sustainable Development Goal 3.

Keywords: colorectal cancer, policy brief, stomas, stoma bag, sustainable development goals

Introduction

Colorectal cancer (CRC) is a chronic disease that has gained global attention. The projection is the increase in new cases, reaching 3.2 million and 1.6 million deaths by 2040, with most cases occurring in countries with high or extremely high Human Development Index. In Asia, the incidence of CRC has shown a significant increase, such as in Japan, South Korea, Singapore, Indonesia, and China, with some countries experiencing up to a 1.7-fold (73%) increase over about a decade.[1–3] In Indonesia, CRC cases are increasingly reported among younger populations, particularly in the age group of 30–39 years, as demonstrated by a cross-sectional study that used data from the Yogyakarta Population-Based Cancer Registry database for 1,295 CRC cases diagnosed between 2008 and 2019.[4] The increasing number of CRC cases has led to an increase in the prevalence of stomas.[5] In a systematic review of randomized controlled trials, CRC was the most common indication for stoma formation, regarded as the primary reason in 14 of 18 included studies conducted across Europe and Asia.[6] It was reported that 72.7% of stoma occurrences were due to cancer, with colostomy accounting for the highest proportion among these cases.[7]

The most common procedure performed in patients with CRC is stoma creation.[5,6] Stoma creation is a crucial life-saving procedure for patients who are unable to pass stool through the anus, one of the conditions caused by CRC.[8] Stoma patients require stoma bags to collect the stoma output (i.e., feces or urine). However, in Indonesia, the availability of stoma bags to meet the needs of stoma patients remains challenging. The issue is well-documented in recent study that

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Indonesian colostomy patients frequently face significant challenges in fulfilling self-care needs, with many resorting to improvising stoma bags from household materials because of limited access to appropriate commercial products.[9] Some patients reported making their own stoma bags using plastic and tape, highlighting the lack of affordable and suitable stoma appliances.

Stoma bags maintain the skin's health around the stoma and enable patients to carry out their daily activities as usual.[10] A key factor for effective self-management is the availability of stoma bags as a critical equipment resource, which enhances self-care, self-efficacy, the ability to replace bags, self-management behavior, quality of life, attitude toward self-care, self-care behaviors, and stoma proficiency.[11,12] It is associated with Sustainable Development Goal (SDG) 3, which emphasizes the importance of access to essential healthcare services and reducing mortality from noncommunicable diseases.

Common complaints include insufficient stoma bags at affordable prices. The fact that most stoma patients come from lower socioeconomic backgrounds exacerbates this issue.[13,14] Access to high-quality stoma bags is variable, particularly for patients living in remote areas or low- and middle-income countries. Limited availability and high costs often force patients to reuse single-use stoma products or create improvised devices from materials such as plastic bags, bottle caps, and tape. These adaptations can compromise appliance performance and increase risks of skin complications, infection, and reduced quality of life.[9,15] An ideal stoma bag should be able to accommodate stoma output (i.e., feces, urine, and gas), protect the stoma and surrounding skin (skin-friendly), reduce or eliminate odors, and boost patient confidence and quality of life and be easy to use, durable, affordable, and widely available.[16–19] However, patients covered by National Health Insurance (NHI), in this matter, *Badan Penyelenggara Jaminan Sosial* (BPJS) Healthcare Security, often use stoma bags that do not meet these criteria, including repurposed large plastic bags or medication pouches secured with double-sided tape.

Based on Indonesian Ministry of Health Regulation No. 28 of 2014 and No. 3 of 2023 and BPJS Regulation No. 1 of 2014 on Health Service Tariff Standards, this problem occurs because of regulatory limitations regarding guaranteeing stoma bags as a routinely covered medical device.[20-22] Although the Indonesian Ministry of Health Regulation No. 28 of 2014 and BPJS Regulation No. 1 of 2014 state that participants are entitled to medical devices and consumable medical supplies as required, the appendices and list of covered medical devices do not specifically mention stoma bags as a routinely covered item. Furthermore, the Indonesian Ministry of Health Regulation No. 3 of 2023, which regulates Indonesian Case Base Groups (INA-CBGs) and capitation tariffs for health facilities, does not include a code or claim component for stoma bags as a daily requirement for outpatients. Thus, BPJS Healthcare Security only covers consumable medical devices during inpatient care. This condition often leads to ostomates purchasing stoma bags independently, outside of the benefits covered by BPJS Healthcare Security.

Therefore, this study aimed to examine the availability and distribution of stoma bags for patients with CRC in national referral and private hospitals in Indonesia. It assessed and compared access across hospital types, identified supply gaps for outpatients, and explored factors influencing distribution. This study intended to inform health policy, particularly regarding the inclusion of stoma bags in the essential medical supply list of BPJS Healthcare Security and the improvement of distribution systems to ensure equitable access for all ostomates. The significance of this study is its focus on institutional disparities in stoma bag provision, an area largely overlooked in existing literature which predominantly addresses clinical or psychosocial outcomes. This study aimed to fill a critical gap in the literature and support evidence-based policy improvements for equitable stoma bag provision. Additionally, ensuring the availability of sufficient and appropriate stoma bags to improve the quality of life of ostomates should be a key research priority.[16]

Method

This qualitative case study was conducted as part of the first author's dissertation to explore the availability, distribution, and regulation of stoma bag provision for patients with CRC in Indonesian hospitals. Data were collected through interviews and observations at three national referral hospitals (Hospitals A, B, and C), one private hospital (Hospital D), and an ostomate community in the Jakarta Metropolitan Area, which were selected for their role in caring for CRC patients. This study involved four enterostomal therapy (ET) nurses and six ostomates to note diverse institutional practices and patient experiences.

The inclusion criteria for nurses were certified ET nurses with at least 1 year of experience in stoma care, a Bachelor's degree in Nursing (S.Kep), and professional certification (Ners), and currently employed in referral hospitals in the Jakarta Metropolitan Area. Patients were included if they were ≥18 years old, diagnosed with CRC, living with a stoma for at least

3 months, physically stable, communicative in Indonesian, and residing in the Jakarta Metropolitan Area. Hospitalized patients were excluded.

Participants were identified through the Indonesian Ostomate Community and the Indonesian Wound, Ostomy, and Continence Nurse Association. Data were collected face-to-face from July to November 2024, including interviews with four ET nurses and observations within the ostomate community. Interviews lasted approximately 60 minutes and were conducted in Indonesian language and audio-recorded. Field notes were taken during and after each session. Observations included documentation of modified stoma bags, types of bags used (hospital-provided or self-purchased), and stoma care issues related to bag quality, functionality, and fit. The authors maintained a nondisruptive presence during the observations and ensured confidentiality by anonymizing data and securely storing identifiable information.

Interview recordings were transcribed and analyzed using thematic analysis with NVivo (licensed under QSR International, Melbourne, Victoria, Australia), a qualitative data analysis software. Coding was performed by two authors, followed by theme development through semantic grouping. Themes were refined by team consensus, and data collection was continued until saturation. This study adhered to the Consolidated Criteria for Reporting Qualitative Research.[23] Triangulation with patients, relevant policy documents, and prior studies were employed to confirm the validity of the findings.

Results

Table 1 presents the demographic and occupational characteristics of the study participants. The participants consisted of health workers and ostomate patients with diverse backgrounds. Table 2 presents the condition of each hospital's availability of stoma bags, highlighting the consistency of supply, types, procurement methods, and access barriers.

Table 1. Characteristics of Participants

Initial	Age (years)	Sex	Main Occupation	Education	Status
Ev	48	Female	Civil servant	Bachelor's degree	Nurse
It	45	Female	Civil servant	Bachelor's degree	Nurse
Te	45	Female	Civil servant	Bachelor's degree	Nurse
Ri	31	Female	Private employee	Bachelor's degree	Nurse
M	62	Female	Unemployed	High school	Ostomate patient
Si	61	Female	Unemployed	High school	Ostomate patient
Da	57	Male	Entrepreneur	High school	Ostomate patient
Ys	54	Male	Entrepreneur	High school	Ostomate patient
Rk	42	Male	Civil servant	Bachelor's degree	Ostomate patient
Hi	59	Male	Civil servant	Bachelor's degree	Ostomate patient

Figure 1. Inadequate Stoma Bags Commonly Used by Ostomates in Indonesia
(All photos used in this article are part of the nurse's personal documentation, taken with the patient's permission)

Table 2. Stoma Bag Availability in National Referral and Private Hospitals

Hospitals	Description of Availability and Distribution of Stoma Bags
A	Patients with CRC undergoing stoma treatment were typically hospitalized for up to 2 weeks, especially in cases involving complications. During this period, the use of stoma bags was strictly regulated, with one bag typically used per week and replaced by nurses, indicating limited patient independence in stoma care. Hospitals provide one-piece pouches because two-piece types were not yet available. Upon discharge, particularly for patients covered by BPJS Healthcare Security, only one stoma bag was provided due to cost and quality control policies. Limited BPJS Healthcare Security claims, combined with strict cost management, means patients must purchase additional bags independently, often online, due to hospital stock shortages. While trained patients may manage with four bags per month, untrained individuals often require more bags. For financially constrained patients, this condition caused a significant burden.
B	Patients with a stoma due to CRC undergoing surgery were usually hospitalized for 5–6 days, with or without complications. On days 1 and 2, patients underwent colonic preparation, followed by surgery on day 3. After surgery, patients typically experienced general improvement by day 4 and began mobilization on day 5 before being discharged on day 6. During hospitalization, the stoma bag was changed every 7 days unless it needed to be replaced sooner. At discharge, patients were usually given five stoma bags; although more could be ordered, they were given owing to the BPJS Healthcare Security patient limit. This policy applies even if the patient requests additional bags during hospitalization. The pouch used was the one-piece type. After surgery, if the patient returns for control or chemotherapy, they are also provided with five stoma bags. Normally, five pouches per month are considered sufficient if there are no complications. However, patients with ileostomies may require more bags due to higher fluid production, necessitating more frequent changes or emptying to prevent leakage. This hospital policy is designed to ensure that patients have sufficient supplies while considering cost and resource management.
C	CRC patients with stoma were typically hospitalized for 8–10 days after surgery if there were no complications. The first 3 days were spent fasting, followed by a liquid diet and further monitoring before discharge. If complications arise, the hospital stay may be extended to 3 weeks or 1 month. During hospitalization, stoma bags were usually changed every 5–6 days, depending on the condition of the wound and bag. Patients could request replacement bags from the pharmacy as needed. One-piece pouches were used. Upon discharge, doctors prescribed three stoma bags. Each month, colostomy patients typically require 4–5 bags, whereas ileostomy patients may need more due to higher fluid output, especially during the first week. Delayed emptying increases the risk of leakage and skin problems such as dermatitis. During follow-up, patients typically receive two bags and are advised to request additional supplies, such as antibacterial cleaning cloths, sodium chloride (NaCl), and gauze. However, these supplies may not always be in stock.
D	Patients with a stoma due to CRC who underwent surgery were usually hospitalized for a maximum of 5 days if there were no complications. Treatment duration depends on the patient's physical condition. If complications arise, the treatment duration will be adjusted according to each patient's specific condition. This hospital does not accept BPJS Healthcare Security patients; therefore, patients must purchase stoma bags without government subsidies.

Notes: Hospitals A, B, and C are national referral hospitals, and Hospital D is a private hospital.

Table 3 presents qualitative insights from both nurses and ostomate patients regarding the access, usage, and procurement of stoma bags in the context of Indonesia's healthcare system. The nurse's perspective highlights institutional policies, cost-control measures, and the process of obtaining supplies covered by BPJS Healthcare Security, including exceptions for financially vulnerable patients. In contrast, the patient's account highlights the practical challenges of maintaining adequate supplies, the role of out-of-pocket expenses, and the reliance on family support for procuring additional stoma bags. Together, these perspectives provide a comprehensive view of the administrative and personal realities surrounding stoma bag provision and access.

Private hospitals (Hospital D) did not accept BPJS Healthcare Security; therefore, patients must buy stoma bags at their own expense without subsidies. In contrast, national referral hospitals (Hospitals A, B, and C) limit patients to five bags at discharge, regardless of the number of bags ordered. Although nurses may provide additional bags during treatment, the total allowed at discharge remains fixed. During follow-up, patients can request stoma bags and receive three from the hospital pharmacy; however, the number often proves insufficient. Outside the hospital, patients manage their stoma care by purchasing supplies online and relying on support from family and the community, such as the Indonesian Cancer Foundation and the Indonesia Ostomate Community.

Due to shortages, some patients resort to improvised solutions, such as using plastic or requesting help from relatives during times of financial hardship. These coping strategies suggested limited institutional support and the need for patients to find their solutions. Nurses should remind patients to request necessary items during follow-up visits due to limited supply. The restrictive supply system and lengthy approval process highlight the gap between current practices in Indonesia and international standards for ostomy care. Nurses and patients were often forced to find workarounds, including negotiating for more supplies and correcting prescription errors, to ensure adequate care.

Table 3. Stoma Bag Provision Practices in National Referral Hospitals: Nurses' and Patients' Perspectives

Participant	Information
Hospital A nurse (Ev)	*"Yes, because of the hospital's policy, everything is calculated since we use quite expensive products. For surgical patients, the bag is immediately applied post-operation. That counts as one. Then, for replacements, it is aimed to last one week per bag because otherwise, the request for additional bags would have to go through the management process. This process can take 2 to 3 days, as it is calculated based on the surgery costs, total billing, and the BPJS Healthcare Security claim amount. Therefore, it is part of cost control and quality control unless we* (nurses) *argue, for example, that the patient is from the PBI* (subsidized group) *and is financially incapable. That is one of the possibilities where exceptions might be made. However, having a stock of more than four bags at home is not feasible because any additional claim beyond the BPJS Healthcare Security coverage would be outside the scope of living expenses."*
Hospital B nurse (It)	*"When the patient is discharged, they are prescribed five bags....we* (nurses) *only get five if we order 10 bags... Even if we request more, they will always receive five bags for discharge....when they* (the patient) *are discharged, they still receive five bags. The patient can receive more than five bags, even up to ten, depending on their needs and resourcefulness* (during hospitalization)*....patients are usually given five bags during each treatment session."*
Hospital C nurse (Te)	*"Recently, patients are given two bags during follow-up appointments... perhaps as a cost-saving measure. Previously, it was three bags. For instance, if the patient comes for a follow-up every two weeks, they used to get three bags, but now they only get two. That is why I always remind patients during their follow-ups, 'Sir, do not forget to ask for stoma bags, antibacterial cleaning cloths, NaCl, and gauze, if available because you can request these from the clinic, even if you do not get everything you need.'"*
Hospital D nurse (Ri)	*"*(Patient is discharged) *It depends... it depends on their physical condition. If there are no complications,* (recovery) *usually five days at the most. There are no BPJS* (patients) here*. We do not have any issues with the stoma bag."*
Ostomate patient (M)	*"Every time I go for a follow-up at the surgical clinic, I get three bags... The rest, I have to buy. Sometimes directly from the vendor, sometimes online. If my follow-up is only once a month, the bags from the hospital just are not enough. I have to change the bag every three to four days..."*
Ostomate patient (Si)	*"We can still buy the bags ourselves, and during follow-up consultations at the hospital, they still give us three. My youngest child usually orders the extra stoma bags online—and he pays for them too... We buy the same type as the one from the hospital* (one-piece)*. What matters most is that I always have bags available. When I am down to three, I tell my child, 'Please, I only have three left.' I spend around IDR 400,000 per month just to buy stoma bags."*
Ostomate patient (Da)	*"I bought stoma bags at YKI* (Indonesian Cancer Foundation) *Lebak Bulus... It was one hundred and ten* (IDR 110,000)*. One hundred for eight* (bags)*, ten thousand for the delivery cost, so one hundred and ten (thousand) for eight (bags), already arrived at home."*
Ostomate patient (Ys)	*"At first, when I was in a pinch, I made the stoma bag myself. I once used plastic like that. We usually ask our child for the bag. Just like the bag from KOIN* (Indonesian Ostomate Community)*, something like that. When I do not have any bags left, and money is also tight, that is what makes me stressed sometimes. You know, we usually ask our child for the bag, but it is not like we can keep asking all the time... the price is quite high, too. When I am down to just one bag and have no money, oh no... it really brings me down sometimes. I think, 'Why was I given this kind of life?'"*
Ostomate patient (Rk)	*"It is not that the cheaper ones do not suit my skin, but the adhesive just does not stick at all to my belly, which has always been kind of big. There is one that is the same as the one given by the wound care clinic, and that is the one that suits me. First, the adhesive does not cause skin irritation, and second, it is pretty strong. So, anything below the standard of what the clinic gives does not work for me. The adhesive keeps coming off; it comes off easily... I only use the one-piece* (type)*. I have never tried the two-piece either.* (To get stoma supplies besides what has given at the hospital during check-ups)*, I just buy them. What I need is just the bag. I buy it online."*
Ostomate patient (Hi)	*"When I go for a check-up, I can ask the doctor and get some from the hospital... From the hospital pharmacy, I get three bags.* (If the bags are not enough) *I buy them online... I order six bags online. Relying on the hospital alone is not enough."*

Notes: Hospitals A, B, and C are national referral hospitals, and Hospital D is a private hospital.

Discussion

Stoma bag provision faces challenges in meeting postoperative patient needs, as evidenced by a case study at three national referral hospitals and one private hospital in the Jakarta Metropolitan Area, Indonesia. During hospitalization, patients were typically allocated only three stoma bags, which were used for 5–10 days. Outpatient facilities generally provide only 1–5 bags when patients visit or leave. This situation is more complicated for ileostomy patients, whose stoma output is primarily liquid, requiring more frequent bag changes.[24] Furthermore, stoma bags were unavailable in primary health care as they are not on the procurement lists. Consequently, patients relied on bags provided by hospitals or purchased them independently online or from large pharmacies.

The choice and frequency of stoma bag use depend on the type of stoma and the individual's specific needs. For example, most patients with a colostomy use 30–90 closed stoma bags per month, changing the bag 1–3 times daily, whereas those with an ileostomy use 15–30 drainable bags per month, changing the bag every 1–3 days.[25] Moreover, the United Ostomy Associations of America (UOAA) guide recommends establishing a regular schedule for pouch changes, typically every 3–5 days, and emphasizes the importance of changing the pouch before leaks or skin irritation occur.[26] The appropriate use of stoma bags is crucial for maintaining hygiene and comfort, as well as for protecting the skin, enabling individuals to live active and confident lives.[26]

Stoma bags are critical for maintaining the health and quality of life of ostomates. However, current Indonesian NHI regulations do not address the long-term needs of these patients. A review of the Indonesian Ministry of Health Regulation No. 28 of 2014 and No. 3 of 2023, as well as the BPJS Regulation No. 1 of 2014, identified several regulatory limitations.[20-22] Although the Indonesian Ministry of Health Regulation No. 28 of 2014 and BPJS Regulation No. 1 of 2014 recognize the right of patients to receive medical devices and consumable supplies, their annexes do not include stoma bags as items covered on a routine basis. Coverage for consumable supplies is restricted to inpatient use within healthcare facilities and does not extend to the daily requirements of outpatients. Additionally, The Indonesian Ministry of Health No. 3 of 2023,

which regulates the standard tariffs for services under the national insurance scheme, does not assign a specific code or funding component for stoma bags as recurring outpatient needs. This condition prevents BPJS Healthcare Security from fulfilling the real and ongoing requirements of ostomates. Therefore, many patients purchase stoma bags on their own. This situation often causes financial strain and leads to inconsistent or inadequate stoma care.

Stoma bag prices vary widely depending on the model or brand, with the lowest price ranging from USD 1.8 to USD 4.1 (approximately USD 1 = IDR 16,300) per bag online. This out-of-pocket economic burden is significant, especially for patients who require multiple bags each month and is related to SDG 1, which aims to end poverty in all forms by reducing out-of-pocket healthcare expenses. Therefore, addressing this regulatory and economic gap is critical for improving health outcomes for ostomates and advancing national and global commitments to poverty reduction and universal health coverage.

According to current hospital policy, postsurgical patients are initially provided with one stoma bag, and replacements are expected to last approximately one week. Additional requests for bags undergo a lengthy approval process, often taking 2–3 days. This strict distribution policy is implemented as part of the hospital's cost and quality control measures, with exceptions made for financially disadvantaged patients enrolled in the subsidized group. Stocking more than four bags at home is discouraged owing to limitations imposed by BPJS Healthcare Security claims regulations. These constraints are consistent with national policies, as stoma bags are not listed as routinely covered medical devices for outpatients under the Indonesian Ministry of Health No. 28 of 2014 and No. 3 of 2023, and BPJS Regulation No. 1 of 2014, which primarily cover consumable medical supplies for inpatient care and do not allocate specific funding or reimbursement codes for ongoing outpatient needs.[20,21] In contrast, international guidelines such as those from UOAA and Crohn's & Colitis UK recommend that ostomates change their stoma bags every 3–7 days, with many requiring 15–30 bags per month, depending on the stoma type and appliance used.[25,26]

Recent changes in hospital policies regarding stoma bag distribution have resulted in patients receiving fewer bags during follow-up visits. Nurses reported that patients were previously allowed to receive three bags but are now limited to two bags per visit. This policy shift is largely due to regulatory and reimbursement constraints, which do not include stoma bags as routinely covered medical devices for outpatients.[20-22] These regulations limit the provision of consumable medical supplies to inpatient care and do not allocate specific funding or reimbursement codes for stoma bags, which are considered an ongoing outpatient need.[20-22] Hence, hospitals restrict the number of bags distributed to each patient to remain compliant with BPJS Healthcare Security claims and budget limitations. Consequently, nurses now actively remind patients to request additional supplies—such as stoma bags, Killbak, NaCl, and gauze—during follow-up appointments to help them manage their needs despite policy constraints.

Moreover, the lack of information and support regarding the proper use of stoma bags exacerbates availability issues. Several patients struggle with self-care after surgery, leading to complications such as skin irritation, infections, and bag leakage.[27] These directly impact patients and their families' physical, psychological, social, and adaptive coping dimensions.[28] ET nurses play a crucial role by providing structured counseling as an innovative solution.[29] A previous study concluded that collaboration among families, communities, and nurses provides comprehensive support.[30] Unfortunately, the number of certified nurses in health facilities is limited. Improving healthcare education and training is critical for achieving SDG 4, which aims to ensure inclusive and equitable education and promote lifelong learning opportunities.

This issue has worsened due to the lack of a national database that records stoma patients with or without complications. Such data are crucial for supporting better healthcare planning and policy development. Imported stoma bags are necessary because no Indonesian pharmaceutical companies produce them, which results in higher and less affordable prices. This condition significantly impacts patients with stoma complications who require long-term care and incur higher costs. It strains the national health insurance system and diminishes patients' physical and mental well-being.

In Indonesia, a holistic strategy is warranted to improve the availability and distribution of stoma bags for CRC patients. Integrating stoma bags into BPJS Healthcare Security coverage would reduce financial burdens and ensure consistent access. Regulating prices and providing targeted subsidies can increase affordability, especially for low-income groups. Equitable access across all regions, including remote and underserved areas, is critical to prevent disparities. Supporting the local production of affordable, high-quality stoma bags can reduce dependence on imports and promote domestic innovation. Furthermore, research on actual demand and the development of a national ostomate database would strengthen policy, procurement, and clinical planning. These strategies can advance a more equitable and sustainable ostomy care system.

This study provided new insights by comparing the availability and distribution of stoma bags in public and private hospitals, highlighting disparities with significant policy implications. Moreover, it addressed a significant gap in the literature, particularly in the context of low- and middle-income countries. However, limitations included the case study design, a limited sample size, and reliance on self-reported data, which may affect the generalizability and accuracy of the findings. Additionally, this study did not capture temporal changes or broader socioeconomic influences. Despite these constraints, the findings provided valuable evidence to inform policies and guide future efforts aimed at improving access to essential ostomy care.

Conclusion

The availability and distribution of stoma bags for CRC patients remain limited in national referral and private hospitals, particularly for outpatient care. Inequities in access, inconsistent supply, and financial barriers continue to impact the quality of life for ostomates. Therefore, it is recommended that stoma bags be integrated into BPJS Healthcare Security coverage, with pricing and distribution better regulated and efforts made to ensure equitable access, particularly for outpatients and those residing in remote areas. Moreover, in Indonesia, strengthening local production and enhancing healthcare provider training is crucial to support sustainable and patient-centered ostomy care.

Abbreviations

CRC: colorectal cancer; SDG: Sustainable Development Goal; NHI: National Health Insurance; BPJS: *Badan Penyelenggara Jaminan Sosial;* ET: enterostomal therapy; NaCl: sodium chloride; UOAA: United Ostomy Associations of America.

Ethics Approval and Consent to Participate

The ethics committee granted ethical clearance under the Faculty of Nursing, Universitas Indonesia, with the reference number KET-171/UN2.F12.D1.2.1/PPM.00.02/2024.

Competing Interest

The authors have no conflict of interest regarding this article.

Availability of Data and Materials

The authors have not made the detailed research data available, but interested parties can request it from the corresponding author upon reasonable inquiry.

Authors' Contribution

RA and H designed the study and analyzed the data. RA, TJML, DD, EM, and SW composed the discussion. RA, DD, and SW drafted the manuscript. TJML, EM, and AYSH reviewed the manuscript.

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