



## GLOBAL RESEARCH TRENDS ON PERISTOMAL SKIN COMPLICATIONS IN OSTOMY NURSING CARE: A BIBLIOMETRIC ANALYSIS

Sri Handayani<sup>1,2\*</sup>, Yunita Sari<sup>1</sup>

<sup>1</sup>Department of Nursing, Faculty of Health Sciences, Universitas Jenderal Soedirman, Jl. Dr. Soeparno, Karangwangkal, Karang Bawang, Grendeng, Purwokerto Utara, Purwokerto, Jawa Tengah 53122, Indonesia.

<sup>2</sup>Rumah Sakit Umum Daerah Banyumas, Jl. Rumah Sakit No.1, Karangpucung, Kejawar, Banyumas, Banyumas, Jawa Tengah 53192, Indonesia

\*[srihandayani237@gmail.com](mailto:srihandayani237@gmail.com)

### ABSTRACT

Peristomal skin complications (PSCs) are common adverse outcomes following ostomy surgery and continue to challenge ostomy nursing practice. Despite extensive clinical discussion, a comprehensive understanding of global research trends, collaborations, and thematic development remains limited. This study examined the global research trend on PSCs in ostomy nursing care through a bibliometric approach, focusing on publication growth, collaborative networks, and key research themes. Publications indexed in Scopus and PubMed between 2006 and 2026 were retrieved using Publish or Perish with the keywords “peristomal skin complication”, “peristomal dermatitis”, “peristomal skin damage”, and “ostomy skin complication”. A total of 482 records were identified of which 146 English-language publications met the inclusion criteria after duplicate removal and title-abstract screening. Data were analyzed using VOSviewer (version 1.6.19) to generate co-authorship, keyword co-occurrence, and network visualizations with a minimum threshold of five occurrences. Publication output increased significantly after 2015, indicating growing scholarly interest. The Journal of Wound, Ostomy and Continence Nursing was the leading source, and the United States contributed the most publications. Four thematic clusters were identified: nursing roles, postoperative complications, determinants of PSCs, and ostomy technologies. These findings highlight research gaps and support future efforts to enhance early risk detection, prevention strategies, and evidence-based ostomy nursing care.

Keywords: bibliometric analysis; ostomy nurse; peristomal skin complications; postoperative complications; stoma care

### How to cite (in APA style)

Handayani, S., & Sari, Y. (2026). Global Research Trends on Peristomal Skin Complications in Ostomy Nursing Care: A Bibliometric Analysis. *Indonesian Journal of Global Health Research*, 8(4), 517–532. <https://doi.org/10.37287/ijghr.v8i4.1806>.

## INTRODUCTION

Ostomy is a necessary medical procedure that aims to restore normal bodily function, save lives, and improve long-term health outcomes for people with complex gastrointestinal and urological disorder. For patients with colorectal cancer, inflammatory bowel disease, traumatic bowel injury, and other severe conditions, the creation of a stoma often provides a pathway toward recovery, symptom control, and improved survival (H. Liu et al., 2021; Parini et al., 2023). Ideally, improvements in surgical methods, postoperative management, and specialized nursing care should allow these people to become independent again, keep their skin healthy, and have a good quality of life after surgery (Belén Martín-Gil et, 2024; Serengga, 2025; Zamarripa et al., 2024a). In this context, ostomy nursing plays a pivotal role, as optimal care is expected to minimize complications, promote self-management, and ensure that patients can adapt confidently to living with a stoma. From both clinical and ethical perspectives, preventing avoidable postoperative problems is therefore not only a matter of comfort but also a core indicator of quality care and patient safety (Albulescu et al., 2024; Bozkul et al., 2024; Heydari et al., 2023; Panattoni et al., 2023).

Despite these expectations, it is still challenging to keep peristomal skin healthy in everyday clinical practice. People with an ostomy know that peristomal skin complications (PSCs) are the most

frequent and burdensome problems they have. These complications include a wide range of skin problems, such as irritant contact dermatitis, moisture-associated skin damage, mechanical injury infection, and allergic reactions around the stoma site (Salvadalena et al., 2020; Ying et al., 2025). PSCs are not just one-time events; they happen a lot in both short-term and long-term care settings, and they often come back or last for a long time. Their presence directly affects how well appliances stick, makes leaks worse, and makes ostomy management less effective. For many patients, what should be a procedure to help them get better can instead be a source of ongoing pain and frustration (Fries & Mthombeni, 2023; Kimberly et al., 2019).

Empirical evidence further illustrates the magnitude of this problem. Epidemiological studies consistently report that PSCs affect a substantial proportion of the ostomy population. Incidence rates during the early postoperative phase have been estimated between 36% and 73%, while prevalence figures in long-term ostomy users range from 11% to as high as 88% (Nybaek et al., 2010; Ratliff, 2010). Such variability reflects differences in definitions, assessment methods, and care settings, yet the overall message remains clear: PSCs are common and significant. Clinically, these conditions are strongly associated with pain, pruritus, leakage, impaired self-care ability, and diminished health-related quality of life. Beyond personal suffering, they also contribute to increased healthcare utilization, including more frequent outpatient visits, higher product consumption, and hospital readmissions, thereby imposing a significant economic burden on both patients and health systems (Fries & Mthombeni, 2023; Rolls et al., 2022; Taneja et al., 2019). Taken together, these findings position PSCs as a critical issue that extends beyond dermatological inconvenience to encompass functional, psychological, and financial consequences (Brady et al., 2025; Chris Juul Hedegaard & Rikke Zeeberg and & Anne Steen Hansen &, 2020).

In response to this clinical burden, research activity related to PSCs has consistently increased over the past two decades. Scholars and clinicians have explored various aspects of ostomy care, including the identification of risk factors, preventive skin care strategies, improvements in ostomy appliances, patient education programs, and the contribution of specialized stoma nurses to patient outcomes (Kimberly et al., 2019; G. Liu et al., 2017; Woo et al., 2017). These efforts have yielded valuable insights into daily management and have contributed to the refinement of evidence-based interventions. However, the current literature is characterized by methodological diversity and geographical disparity. A significant portion of the evidence is derived from high-income countries and often focuses on localized clinical outcomes rather than overarching trends in knowledge development or collaborations (Charlaix et al., 2025; Choudhary & Kaur, 2020; D'Ambrosio et al., 2022; Ma et al., 2024). Consequently, while numerous individual studies exist, a coherent understanding of how the field has evolved globally is still lacking.

Notably, despite the growing number of publications and the high clinical relevance of PSCs, there is currently no comprehensive bibliometric analysis dedicated specifically to mapping global research trends, intellectual structures, and collaborative networks in this area. The absence of such an overview limits the ability of researchers, clinicians, and policymakers to identify research hotspots, underexplored themes, and potential international partnerships (Mukherjee et al., 2022). Without a structured synthesis of the knowledge landscape, effort may remain fragmented, duplicative, or disconnected, slowing the translation of evidence into practice. In rapidly developing healthcare fields, understanding not only what is known but also how knowledge is produced and shared becomes increasingly important for guiding strategic decision-making (Gusenbauer & Haddaway, 2020).

Conducting a bibliometric investigation offers a way to address this gap. By systematically examining publication output, citation patterns, and keyword relationships, bibliometric approaches can reveal the underlying architecture of a research field. Such analyses help clarify which topics dominate the discourse, which authors and institutions contribute most actively, and how

collaborative networks shape scientific progress. This method importantly connects the theoretical and practical side of scholarship. This dual perspective is crucial for a condition like PSCs, ensuring that research directions stay in line with patient needs and healthcare realities.

Therefore, this study undertakes a bibliometric analysis to systematically evaluate the global scientific output on peristomal skin complications using the Scopus and PubMed databases. By mapping publication, identifying key contributors, examining collaboration networks, and visualizing evolving research themes through VOSviewer, this work seeks to offer an in-depth assessment of how PSC-related knowledge has developed over time. The ultimate objective of the findings is to inform future research agendas, enhance interdisciplinary and international collaboration, and facilitate the global progression of evidence-based ostomy care practices.

## **METHOD**

### **Study Design**

This study employed a quantitative bibliometric research design to systematically examine the global research landscape of peristomal skin complications (PSCs) in patients with ostomies. Bibliometric analysis is a well-established scientific method that facilitates the objective assessment of research productivity, intellectual frameworks, and thematic evaluation within a specific domain by examining publication metadata and citation trends (Aria & Cuccurullo, 2017; Donthu et al., 2021). Through this design, the present study aimed to identify publication trends over time, influential journals and authors, dominant research themes, and patterns of scientific collaboration related to PSCs.

This bibliometric approach adopted in this study allows for the visualization of knowledge structures, detection of research hotspots, and identification of underexplored areas area by quantitatively analysing large volumes of bibliographic data (Cobo et al., 2011; Zupic & Čater, 2014). As the analysis was conducted exclusively on secondary data derived from publicly available databases and did not involve human participants, clinical data, or patient-level information, ethical approval was not required.

### **Data Collection**

Bibliographic data were retrieved from Scopus and PubMed databases. Citation analysis was conducted based on citation counts available in the Scopus database. Two widely used and complementary databases covering peer-reviewed biomedical, nursing, and health sciences literature. The literature search was conducted using Publish or Perish software, which facilitated structured querying, result comparison across databases, and standardized export of bibliographic records. Search terms were developed to capture literature specifically related to peristomal skin complications and included combinations of keywords such as “peristomal skin complication,” “peristomal dermatitis,” peristomal skin damage,” and “ostomy skin complication.” Boolean operators (AND/OR) were applied to refine the search strategy and enhance sensitivity and specificity.

Eligible publications consisted of peer-reviewed original research articles and review papers published in English between 2006 and 2026 that explicitly addressed PSCs in the context of ostomy care. Editorials, letters to the editor, conference abstracts, book chapters, and non-English publications were excluded to maintain methodological consistency. All retrieved records were exported in CSV and RIS formats for bibliometric processing and visualization using VOSviewer. Following data extraction, duplicate records identified across Scopus and PubMed were removed manually. Titles and abstracts were subsequently screened to confirm relevance and to exclude studies that discussed ostomy care broadly without specific focus on peristomal skin complications. Differences of opinion between two researchers were resolved through discussion. Grey literature, conference proceedings, and studies not indexed in Scopus or PubMed were excluded to ensure data

quality and reproducibility. While this database restriction enhances the reliability of the analysis; however, it may lead to the underrepresentation of research from non-indexed sources or low- and middle-income contexts, which must be taken into account when interpreting the results (Zupic & Čater, 2014). This study did not involve human participants or clinical procedures; therefore, ethical approval was not required.

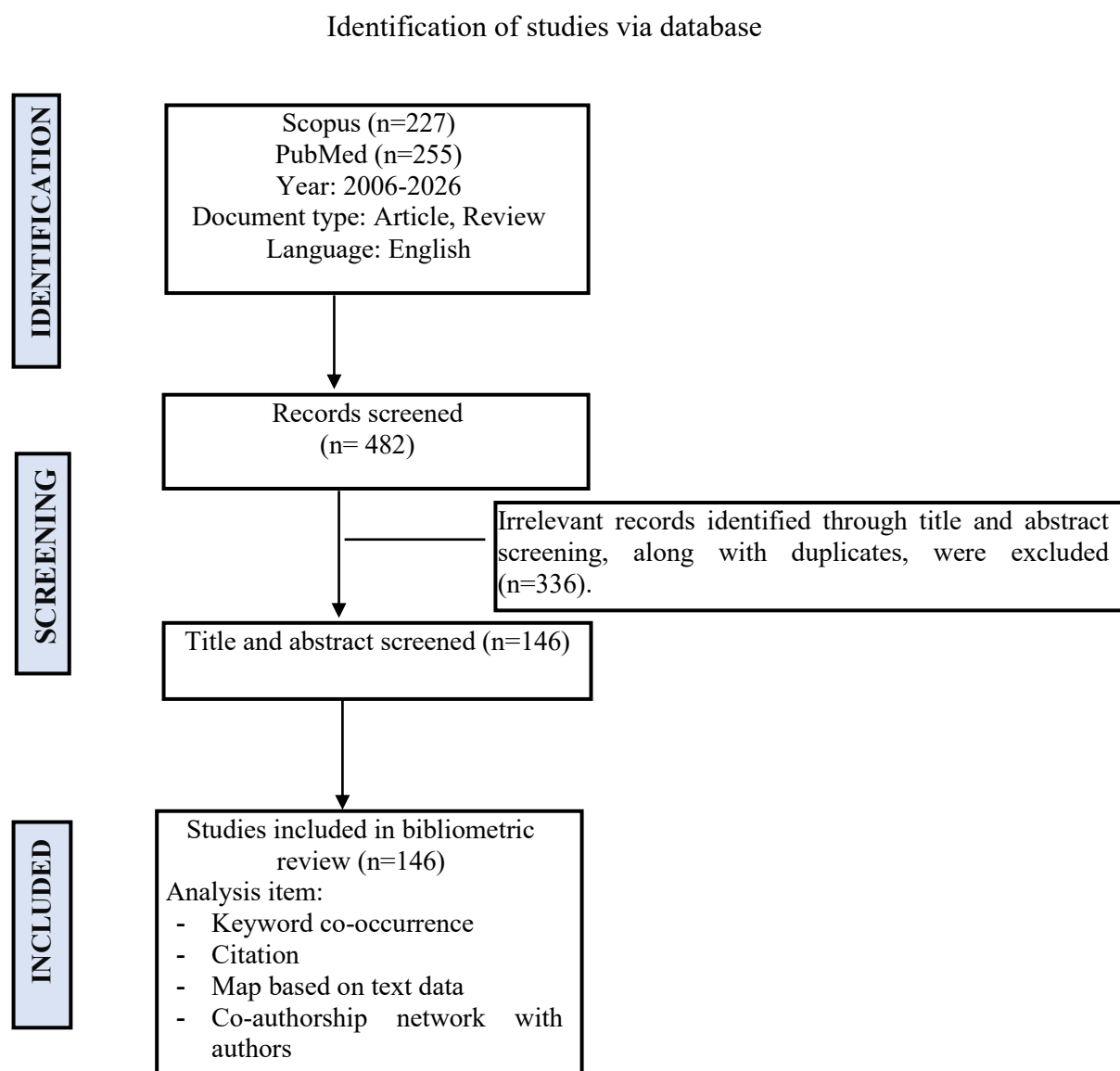
#### **Data Analysis**

All bibliographic records were imported into VOSviewer (version 1.6.20) for bibliometric mapping and visualization. The analysis focused on keyword co-occurrence, term frequency, thematic clustering, and temporal patterns within the literature on peristomal skin complications. Keywords and terms were extracted from titles and abstracts, and a minimum occurrence threshold of five was applied to exclude rarely used terms and enhance analytical clarity.

A bibliometric network was constructed using VOSviewer's default clustering and normalization settings. The association strength method was employed to normalize co-occurrence relationships, allowing meaningful comparison of term connectivity across the dataset. A minimum cluster size of five items was maintained to ensure interpretability while preserving thematic diversity. Three types of visualizations were generated: 1) Network map, illustrating relationships among frequently co-occurring terms; 2) Density map, highlighting areas of concentrated research activity; and 3) overlay maps, demonstrating the temporal evaluation of research topics. Link strength values were used quantitatively and qualitatively to identify dominant research themes, emerging trends, and underexplored areas within PSC research. Particular attention was given to shifts in research focus over time, especially toward preventive strategies, patient-reported outcomes, and long-term skin health in ostomy care. Potential methodological limitations, including the predominance of English-language publications and the use of only indexed databases, were acknowledged as providing a balanced interpretation of the findings.

#### **RESULT**

The study included publications published between 2006 and 2026. The final search was conducted on January 10, 2026. This bibliometric search identified 482 records, with 146 publications met the inclusion criteria after duplicate removal and screening procedures (Fig.1)



**Fig. 1 PRISMA flowchart**

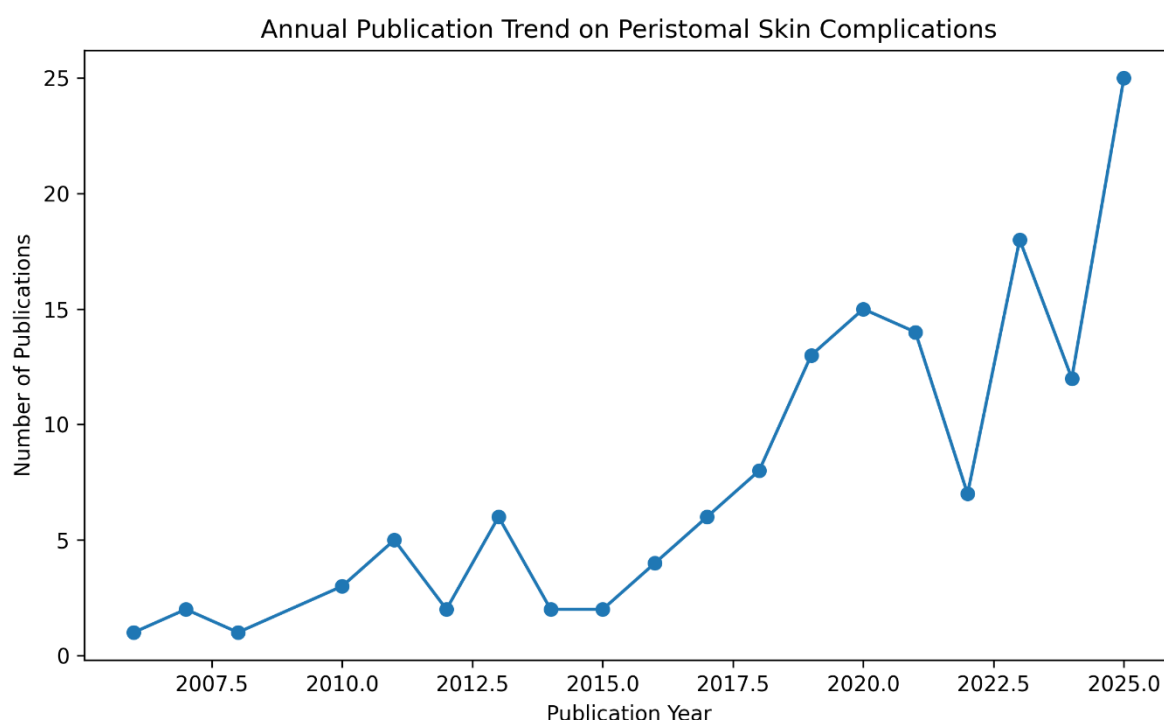


Fig. 2. Publication Trend on PSCs (2006-2026)

Fig. 2 shows the annual publication trend for peristomal skin complications based on Scopus and PubMed. Early years saw limited publication output, but after 2015, it began to increase, with a more notable rise from 2018 onward. This trend suggests growing academic and clinical interest, likely driven by improved ostomy care practices, heightened awareness of peristomal skin health, and increasing attention to quality of life in patients with stomas.

Table 1.  
Analisis Article

| Rank | First Author | Citations | Year | Journal/Source                                  | Article Title                                                                                                                              | Country |
|------|--------------|-----------|------|-------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|---------|
| 1    | Salvadalena  | 128       | 2008 | Journal of Wound, Ostomy and Continence Nursing | Incidence of complications of the stoma and peristomal skin among individuals with colostomy, ileostomy, and urostomy: A systematic review | USA     |
| 2    | Meisner      | 99        | 2012 | PLoS ONE                                        | Peristomal skin complications are common, expensive, and difficult to manage: A population-based cost modeling study                       | Denmark |
| 3    | Steinhagen   | 89        | 2017 | Clinics in Colon and Rectal Surgery             | Intestinal Stomas: Postoperative Stoma Care and Peristomal Skin Complications                                                              | USA     |
| 4    | Salvadalena  | 88        | 2013 | Journal of Wound, Ostomy and Continence Nursing | The incidence of stoma and peristomal skin complications during the first 3 months after ostomy creation                                   | USA     |
| 5    | Gray         | 81        | 2013 | Journal of                                      | Peristomal moisture-                                                                                                                       | USA     |

| Rank | First Author      | Citations | Year | Journal/Source                                  | Article Title                                                                                                                   | Country |
|------|-------------------|-----------|------|-------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|---------|
|      |                   |           |      | Wound, Ostomy and Continence Nursing            | associated skin damage in adults with faecal ostomies a comprehensive review and consensus                                      |         |
| 6    | Taneja            | 78        | 2017 | Journal of Wound, Ostomy and Continence Nursing | Clinical and economic burden of peristomal skin complications in patients with recent ostomies                                  | USA     |
| 7    | Carlsson          | 78        | 2016 | Ostomy Wound Management                         | The Prevalence of Ostomy-related Complications 1 Year after Ostomy Surgery: A Prospective, Descriptive, Clinical Study          | Sweden  |
| 8    | Taneja            | 70        | 2019 | Journal of Wound, Ostomy and Continence Nursing | Risk and Economic Burden of Peristomal Skin Complications Following Ostomy Surgery                                              | USA     |
| 9    | Maydick-Youngberg | 59        | 2017 | Wound Management and Prevention                 | A Descriptive study to explore the effect of peristomal skin complications on quality of life of adults with a permanent ostomy | USA     |
| 10   | Colwell           | 56        | 2018 | Journal of Wound, Ostomy and Continence Nursing | A randomized Controlled Trial Determining Variances in Ostomy Skin conditions and the Economic Impact ADVOCATE Trial            | USA     |

**Table 1. Top 10 most cited publications peristomal skin complication over the two decade (from 2006-2026)**

Table 1 showed that the most influential article primarily addressed incidence, clinical outcomes, economic burden, and quality-of-life impact, with the *Journal of Wound, Ostomy, and Continence Nursing* emerging as the leading the source. The United States predominantly contributes to research output.

**Table 2. Top 10 authors in the co-authorship network**

| Rank  | Author          | Documents | % Documents | Total Link Strength | % Total Link Strength |
|-------|-----------------|-----------|-------------|---------------------|-----------------------|
| 1     | Hansen, H.D.    | 4         | 13.79%      | 29                  | 15.51%                |
| 2     | Størling, Z.M.  | 5         | 17.24%      | 27                  | 14.44%                |
| 3     | Karismark, T.   | 3         | 10.34%      | 20                  | 10.70%                |
| 4     | Herschend, N.O  | 4         | 13.79%      | 20                  | 10.70%                |
| 5     | Martins, L.     | 3         | 10.34%      | 16                  | 8.56%                 |
| 6     | Ainsworth, R.   | 2         | 6.9%        | 15                  | 8.02%                 |
| 7     | Ajslev, T.A     | 2         | 6.9%        | 15                  | 8.02%                 |
| 8     | Brady, R.R.W    | 2         | 6.9%        | 15                  | 8.02%                 |
| 9     | Sheard, D.      | 2         | 6.9%        | 15                  | 8.02%                 |
| 10    | Vestergaard, M. | 2         | 6.9%        | 15                  | 8.02%                 |
| Total |                 | 29        | 100%        | 187                 | 100%                  |

The co-authorship network showed a concentrated collaboration pattern. Hansen, H.D., and Størling, Z.M., occupied central positions, together contributing nearly one-third of the total link strength. While, Størling had the highest publication share, Hansen H.D., demonstrated the strongest collaborative intensity. Other authors formed a stable core with consistent collaborative ties.

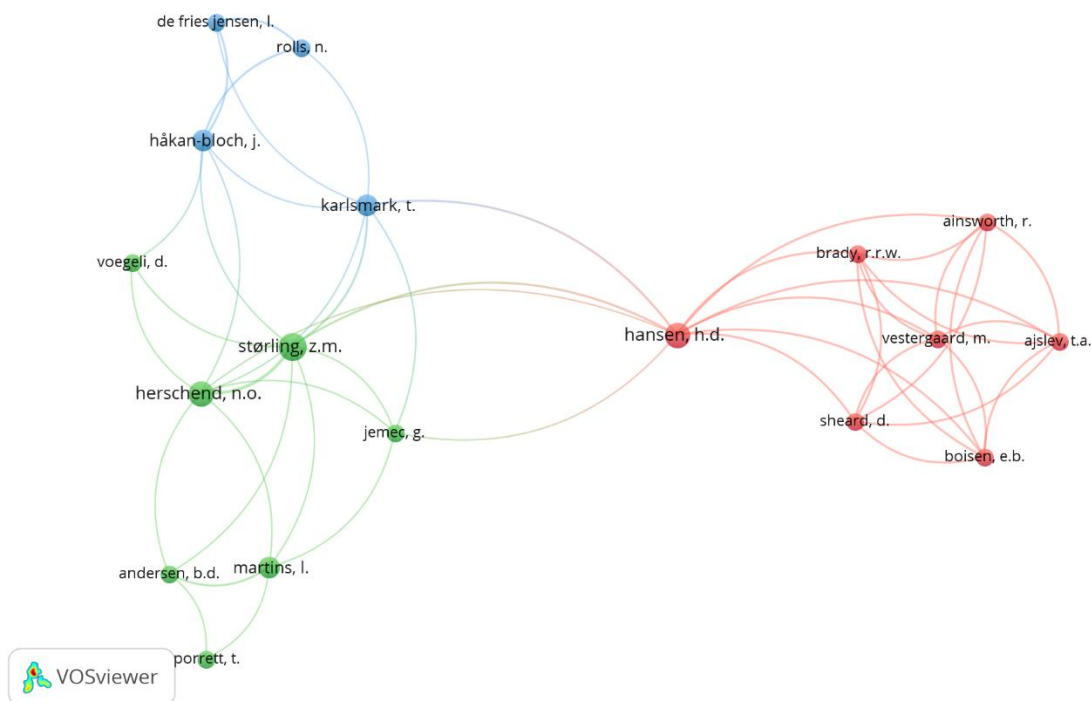


Fig. 3 Visualization of Author's Collaboration

The co-authorship network reveals several clearly defined clusters that represent recurring collaboration among specific research teams. One prominent cluster centre on Hansen, who is closely connected with Brady, Ainsworth, Vestergaard, Ajslev, Sheard, and Boisen, indicating frequent joint authorship with this group. Another cluster is formed around Størling, Hershend, Jernøe, Martins, Andersen, Porrett, and Vogeli, showing similarly dense internal linkages. A smaller group includes Håkan-Bloch, Karlmark, de Fries Jessen, and Rolls, connected through consistent partnership. Links between these clusters appear less frequent, with only a limited number of cross-group ties. Overall, the network structure illustrates collaboration concentrated within established teams, with selective connections across groups.



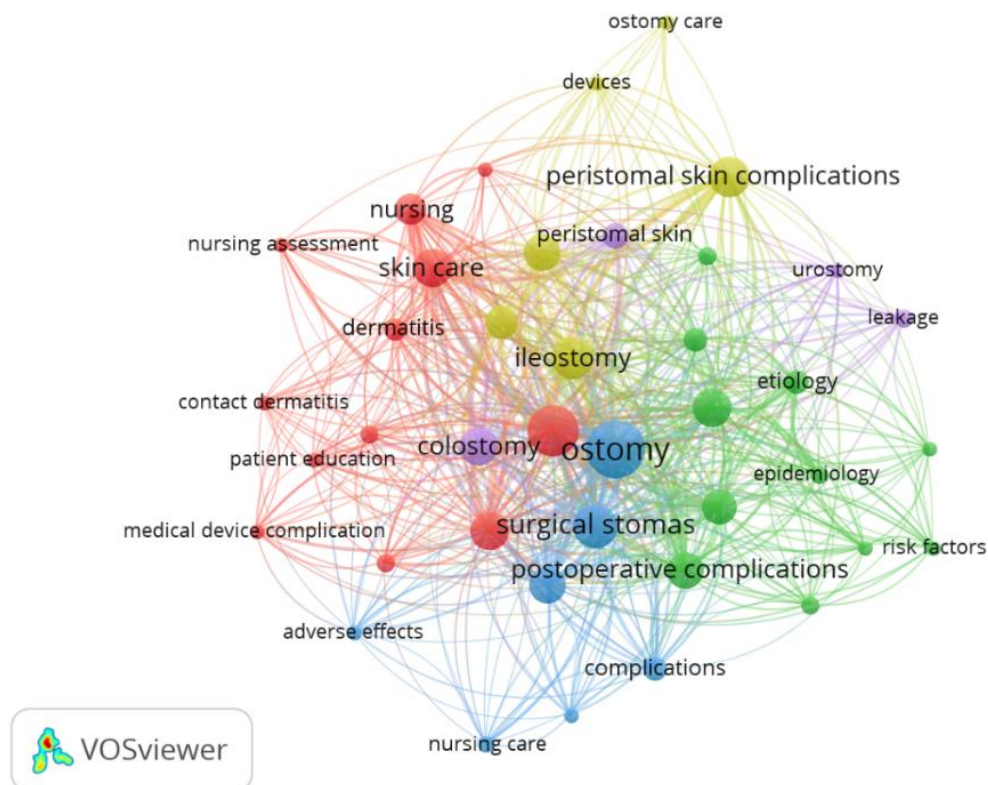


Fig.4 Network visualization

The network visualization illustrates the intellectual structure of research on peristomal skin complications and related ostomy care. The map demonstrates a highly interconnected research field, with “ostomy” positioned as the central node, indicating its pivotal role in linking diverse research across clinical, nursing, and epidemiological domains. The VOSviewer network map reveals five main research clusters: the blue cluster (e.g. surgical stomas, postoperative complications, complications, nursing care, and adverse effects), the green cluster (e.g. etiology, epidemiology, and risk factors), the yellow cluster (e.g. peristomal skin complications, devices, ostomy care, and ileostomy), and the purple cluster (e.g. leakage, peristomal skin, colostomy, and urostomy).

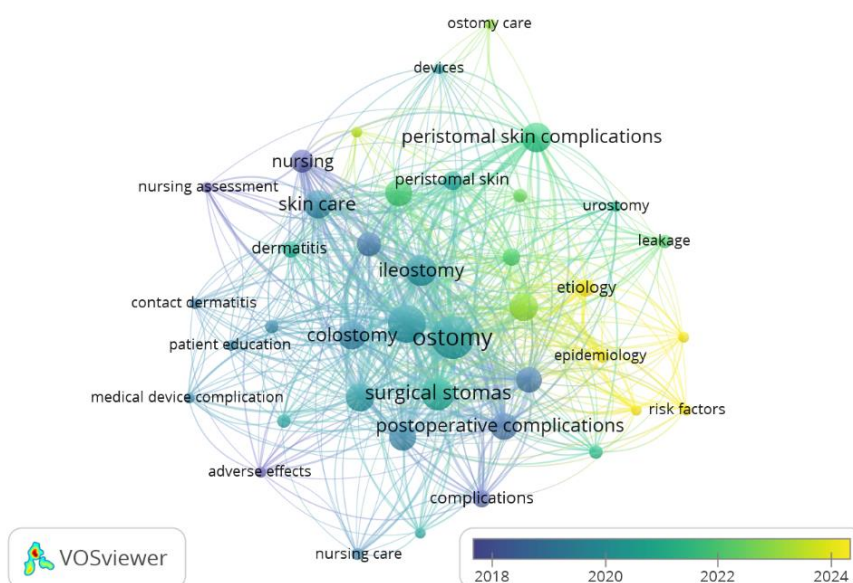


Fig. 5 Overlay visualization

The overlay visualization illustrates the temporal distribution of research topics in peristomal skin studies. Earlier publications (2018-2019), represented by darker blue tones, predominantly focused on general clinical management terms such as nursing care, nursing assessment, adverse effects, and postoperative complications. During the intermediate period (2020-2021), the emphasis expanded toward procedural and condition-specific terms, including “ostomy,” “surgical stomas,” “ileostomy,” “colostomy,” “skin care,” and “dermatitis,” indicating increased attention to stoma types and routine care practices. More recent publications (2022-2024), highlighted in green to yellow, show growing prominence of keywords such as “risk factors,” “epidemiology,” “etiology,” “urostomy,” and “leakage.” These terms appear at the periphery of the network with newer average publication years, reflecting the emergence of studies addressing determinants, mechanisms, and preventive aspects of peristomal skin complications. Overall, the mapping demonstrates a gradual shift from general management-oriented themes toward more specific risk- and mechanism-focused research directions.

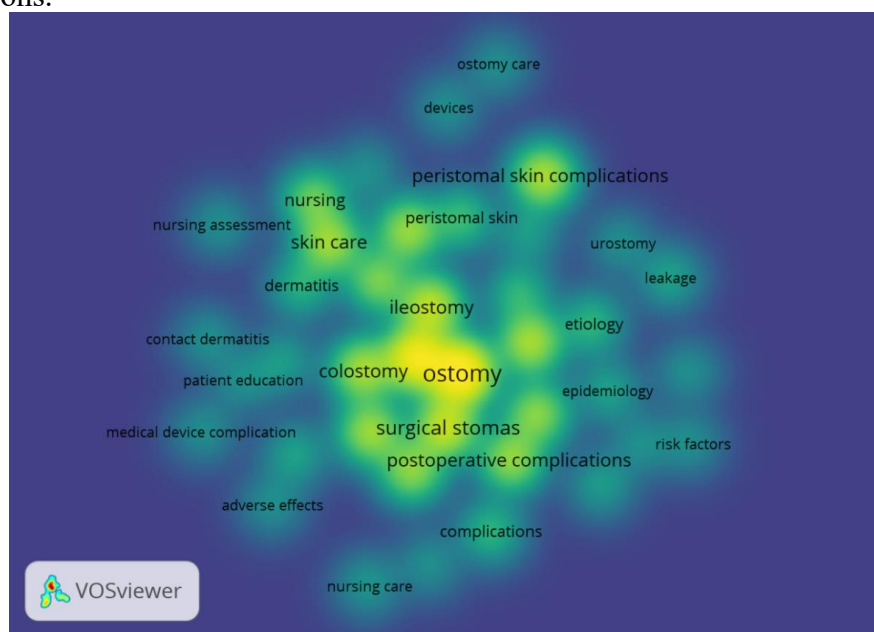


Fig. 5 Density Visualization

The density visualization highlights the concentration and relative frequency of keywords within the peristomal skin complication research landscape. The highest density areas, indicated by bright yellow regions, are centered around “ostomy,” “surgical stomas,” and “postoperative complications”, suggesting that these terms constitute the core themes most frequently addressed in the literature. Surrounding these central topics are moderately dense such as “colostomy,” “ileostomy,” “peristomal skin complications,” “skin care,” and “dermatitis”, reflecting substantial attention to stoma types and routine skin management. In contrast, lower-density regions, represented by green to blue shades, include more specific or emerging topics such as “risk factors,” “epidemiology,” “etiology,” “leakage,” “patient education,” and “medical device complications”. These keywords appear less frequently and are positioned at the periphery of the map, indicating comparatively limited but growing research coverage. Overall, the distributions demonstrate the field remains strongly centered on general ostomy care and postoperative issues, with increasing diversification toward specialized and preventive aspects.

## DISCUSSION

This bibliometric analysis provides a comprehensive overview of the intellectual structure, thematic concentration, and temporal evolution of research on peristomal skin complications (PSCs). The VOSviewer maps illustrate four major thematic clusters in the ostomy literature, each representing a distinct focus of research and practice. The red cluster contains terms such as nursing, skin care, nursing assessment, and patient education, which are closely related to dermatological terms like dermatitis and contact dermatitis. The observed associations reflect a strong research focus on

nursing assessment and preventive care in maintaining peristomal skin integrity (Boyles & Hunt, 2016). The blue cluster has strong connections among surgical stomas, and postoperative complications indicate that the research often situates PSCs within the broader context of postoperative outcomes. Retrospective analyses have identified irritant contact dermatitis and mucocutaneous separation as prevalent early postoperative complications, with nursing intervention, particularly skin barrier use and structured follow-up, playing a key role in their management (Ayik et al., 2020).

Then, green cluster-focused terms, including etiology, epidemiology, risk factor, leakage, and urostomy, emphasize research on underlying causes and determinants of PSCs. The literature identifies leakage of stoma output as a primary risk factor for skin injury because effluent contact disrupts the skin barrier, leading to dermatitis and other complications (John et al., 2019). Epidemiological studies also report high prevalence of PSCs, ranging from roughly 11% to 45% among ileostomy and colostomy patients, which underscores the clinical burden these complications impose on patients and the health system (D'Ambrosio et al., 2022). The last, yellow cluster focused on the devices and ostomy technology. The presence of device and ostomy care in another distinct cluster suggests attention to pouching systems and appliance performance. Evidence indicates that pouching system leakage is strongly related to PSCs (Ratliff, 2014). The choice of barrier design influences the risk of leakage, which, in turn, contributes to skin damage and increased need for nursing interventions (Zamarripa et al., 2024b).

Synthesizing all cluster information, four key aspects emerge as primary research domains in ostomy and peristomal skin complication literature: 1) clinical characterization and epidemiology of PSCs describing the prevalence, types, and outcomes of PSCs, 2) Nursing assessment, education, and preventive care focusing on nurse-led screening and patient teaching to prevent PSCs, 3) Postoperative management of ostomy complications, exploring how surgical context and early care affect PSCs, 4) Device performance and leakage prevention, evaluating pouch systems and their role in preventing effluent-induced skin injury. Together, these domain reflect the continuum of care surrounding the stoma, from understanding the burden of complications to preventing and managing them in practice. This configurations support existing integrating risk identification, appropriate device selection, and competent nursing care (Down et al., 2023).

Across the cluster, there is a consistent and strong correlation between nursing-oriented terms and both clinical and device-related concepts. The frequent co-occurrence of nursing, patient education, nursing assessment, and skin care with clinical terms like dermatitis, leakage, and surgical stomas suggests that nurses are central agents in both the identification and management of PSCs. This is supported by evidence showing that nurse follow-up care significantly influences complication outcomes and that patients seen by specialized stoma care nurses often have fewer complications compared to those without such services (E. I. Persson et al., 2025). Furthermore, research shows that nurse confidence and skills in ostomy care correlate with quality of care delivery. It indicates that enhancing nursing education and clinical competence could further reduce PSC incidences and improve patient quality of life (Alenezi et al., 2022).

Technological and device-related aspects represent another emerging yet insufficiently explored area. Recent retrospective analyses have demonstrated that differences in pouching systems and appliance performance significantly influence leakage rates and peristomal skin outcomes (Rolfsen et al., 2024; Zamarripa et al., 2024b). Nonetheless, device-centric studies are still few in number and have not yet been fully incorporated into mainstream PSC research, as evidenced by their marginal placement in bibliometric maps. Overall, these findings indicate that PSC research has progressed from descriptive and management-focused studies toward more analytical and prevention-oriented approaches, but this transition remains incomplete.

The evolution of PSC scholarship shows a gradual shift from predominantly descriptive accounts toward more analytical and prevention-oriented approaches. The clinical burden and nursing foundations of the field are now well established, yet further progress will likely depend on more precise risk stratification, early detection mechanisms, and technology-assisted intervention (Denti et al., 2025; Guerra et al., 2023). Strengthening these elements may help bridge existing gaps and move ostomy care toward more proactive and integrated management.

#### Limitation

Several limitations should be considered when interpreting the result of this bibliometric study about PSCs. First, the analysis relies on bibliographic data retrieved from indexed databases and is therefore dependent on the accuracy and completeness of titles, abstracts, and keywords provided by authors. Second, variation in terminology used to describe PSCs may have influenced keyword co-occurrence patterns and cluster formation. Third, the bibliometric method reveals trends and thematic structures but does not assess the methodological quality or clinical effectiveness of individual studies, which limits direct inference regarding best clinical practices.

#### Implications for Nursing: Research, Education, and Practice

From a nursing research perspective, the relative marginality of leakage, early detection, and technological integration in the bibliometric maps highlights an important opportunity for nurse-led research. Given that leakage is strongly associated with skin damage and impaired quality of life (E. Persson et al., 2010; Salvadalena et al., 2020). Future studies should prioritize the development and validation of early warning indicators, patient-reported outcome tools, and digital monitoring systems to predict or prevent PSCs (Martins et al., 2022).

In nursing education, the strong representation of skin care, dermatitis, and patient education underscores the need to strengthen ostomy-related competencies within undergraduate and postgraduate curricula. Educational programs should emphasize not only technical stoma care but also clinical reasoning related to risk assessment, early identification of skin changes, and individualized appliance selection, as recommended in the latest guidelines for ostomy care (Gray et al., 2013; Maydick-Youngberg, 2017).

For nursing practice, the findings reaffirm the central role of nurses in safeguarding peristomal skin integrity. The growing focus on risk factors and leakage supports the implementation of standardized skin assessment protocols, structured follow-up beyond hospital discharge, and closer collaboration between nurses, surgeons, and medical device specialists (E. I. Persson et al., 2025). Moreover, evidence linking device performance to skin outcomes suggests that nurses should actively participate in evaluating and selecting ostomy products based on patient-specific risk profiles and lifestyle factors rather than solely on availability or cost (Milne et al., 2025).

#### CONCLUSION

This bibliometric analysis illustrates how research on peristomal skin complications in ostomy nursing care has steadily shifted from basic postoperative management toward a stronger focus on prevention and patient safety. The knowledge structure remains anchored in core themes such as ostomy, surgical stomas, skin care, and nursing assessment, highlighting the central role of nurses in protecting peristomal skin and minimizing complications. Earlier studies largely concentrated on dermatitis management and routine care, whereas recent trends increasingly emphasize leakage, risk factors, etiology, and device-related issues. This shift signals an important change in perspective from reacting to complications to anticipating them. Yet, technological and digital innovations remain underrepresented. By clarifying current hotspots and emerging directions, this study provides not only a map of the field but also a call to action. Advancing technology-driven, interdisciplinary solutions is essential to reduce complications and meaningfully improve the quality of life of people living with an ostomy.

## REFERENCES

- Albulescu, E. L., Bratiloveanu, T., Sandulescu, S., Ramboiu, S., Nemes, R., Surlin, V., & Chiutu, L. (2024). Role of a Stoma Nurse in the Management of the Specific Stoma-Related Complications. *Current Health Sciences Journal*, 50(1), 5–11. <https://doi.org/10.12865/CHSJ.50.01.01>
- Alenezi, A., Kimpton, A., McGrath, I., & Livesay, K. (2022). Confidence, skills and barriers to ostomy patient care by nursing staff in Saudi Arabia. *Nursing Forum*, 57(3), 403–411. <https://doi.org/10.1111/nuf.12701>
- Aria, M., & Cuccurullo, C. (2017). bibliometrix: An R-tool for comprehensive science mapping analysis. *Journal of Informetrics*, 11(4), 959–975. <https://doi.org/https://doi.org/10.1016/j.joi.2017.08.007>
- Ayik, C., Özden, D., & Cenan, D. (2020). Ostomy Complications, Risk Factors, and Applied Nursing Care: A Retrospective, Descriptive Study. *Wound Management & Prevention*, 66(9), 20–30.
- Belén Martín-Gil et. (2024). Changes in the quality of life of adults with an ostomy during the first year after surgery as part of the Best Practice Spotlight Organisation ® Programme. June 2023, 1–12. <https://doi.org/10.1111/iwj.14456>
- Boyles, A., & Hunt, S. (2016). Care and management of a stoma: maintaining peristomal skin health. *British Journal of Nursing* (Mark Allen Publishing), 25(17), S14–S21. <https://doi.org/10.12968/bjon.2016.25.17.S14>
- Bozkul, G., Senol Celik, S., & Nur Arslan, H. (2024). Nursing interventions for the self-efficacy of ostomy patients: A systematic review. *Journal of Tissue Viability*, 33(2), 165–173. <https://doi.org/https://doi.org/10.1016/j.jtv.2024.04.006>
- Brady, R. R. W., Sheard, D., Howard, K., Vestergaard, M., Boisen, E. B., Mather, R., Ainsworth, R., Hansen, H. D., & Ajslev, T. A. (2025). The Prevalence of Leakage, Peristomal Skin Complications and Impact on Quality of Life in the First Year Following Stoma Surgery. *Nursing Reports*, 15(3). <https://doi.org/10.3390/nursrep15030107>
- Charlaix, A. L., Ponthaud, C. De, & Gaujoux, S. (2025). How are stomas managed in low- and lower-middle income countries ? *British Journal of Surgery*, 112(Supplement 15), 62–64. <https://doi.org/10.1093/bjs/znaf218>
- Choudhary, M., & Kaur, H. (2020). Experiences of Living with Intestinal Ostomy : A Qualitative Meta - Synthesis. <https://doi.org/10.4103/IJPC.IJPC>
- Chris Juul Hedegaard & Rikke Zeeberg and & Anne Steen Hansen &, & T. A. A. (2020). Leakage and peristomal skin complications influences user comfort and confidence and are associated with reduced quality of life in people with a stoma. *WCET Journal - Chinese Edition*, 40(4). <https://doi.org/https://doi.org/10.33235/wcet.40.4.23-29>
- Cobo, M. J., López-Herrera, A. G., Herrera-Viedma, E., & Herrera, F. (2011). Science mapping software tools: Review, analysis, and cooperative study among tools. *Journal of the American Society for Information Science and Technology*, 62(7), 1382–1402. <https://doi.org/https://doi.org/10.1002/asi.21525>
- D'Ambrosio et al. (2022). Peristomal skin complications in ileostomy and colostomy patients: a systematic literature review. *European Journal of Public Health*, 32, 2022.
- Denti, F. C., Guerra, E., Caroppo, F., Abruzzese, P., Alessi, F., Barone, F., Bernardino, P., Bergamini, M., Bernardo, M. C., Bosio, G., Carp, P., Ceconello, M., Cerchier, A., Croci, F., Detti, R., Dimitrova, M. M., Di Pasquale, C., D'Ippolito, M. R., Ditta, S., ... Caruso, R. (2025). Outcomes of a Risk-Stratified Protocol for Preventing Peristomal Skin Complications in Patients with an Ostomy: A Cohort Study. *Nursing Reports*, 15(5). <https://doi.org/10.3390/nursrep15050179>
- Donthu, N., Kumar, S., Mukherjee, D., Pandey, N., & Lim, W. M. (2021). How to conduct a bibliometric analysis: An overview and guidelines. *Journal of Business Research*, 133, 285–296. <https://doi.org/https://doi.org/10.1016/j.jbusres.2021.04.070>

- Down, G., Ma, C. P. F. M., Martins, L., Jemec, G., & Bain, M. (2023). Original article Clinical preventive-based best practices to reduce the risk of peristomal skin complications – an international consensus report. *WCET® Journal*, 43(1), 11–19.
- Fries, N. R. L. De, & Mthombeni, J. F. (2023). Healthcare resource use and associated costs for patients with an ileostomy experiencing peristomal skin complications. November 2022, 2540–2550. <https://doi.org/10.1111/iwj.14118>
- Gray, M., Colwell, J. C., Doughty, D., Goldberg, M., Hoeflok, J., Manson, A., McNichol, L., & Rao, S. (2013). Peristomal moisture-associated skin damage in adults with fecal ostomies: a comprehensive review and consensus. *Journal of Wound, Ostomy, and Continence Nursing : Official Publication of The Wound, Ostomy and Continence Nurses Society*, 40(4), 389–399. <https://doi.org/10.1097/WON.0b013e3182944340>
- Guerra, E., Denti, F. C., Pasquale, C. Di, Caroppo, F., Angileri, L., Cioni, M., Parodi, A., Fortina, A. B., Ferrucci, S., & Burlando, M. (2023). Peristomal Skin Complications : Detailed Analysis of a Web-Based Survey and Predictive Risk Factors. *Healthcare*, 1–12.
- Gusenbauer, M., & Haddaway, N. R. (2020). Which academic search systems are suitable for systematic reviews or meta-analyses? Evaluating retrieval qualities of Google Scholar, PubMed, and 26 other resources. *Research Synthesis Methods*, 11(2), 181–217. <https://doi.org/10.1002/jrsm.1378>
- Heydari, A., Manzari, Z. S., & Pouresmail, Z. (2023). Nursing Intervention for Quality of Life in Patients with Ostomy: A Systematic Review. *Iranian Journal of Nursing and Midwifery Research*, 28(4), 371–383. [https://doi.org/10.4103/ijnmr.ijnmr\\_266\\_22](https://doi.org/10.4103/ijnmr.ijnmr_266_22)
- John, B., Kim, M., & Forgrave, D. (2019). Risk factors associated with peristomal skin complications : Integrative literature review. 9(7). <https://doi.org/10.5430/jnep.v9n7p82>
- Kimberly, L., Whiteley, I., McNichol, L., Salvadalena, G., & Gray, M. (2019). Peristomal Medical Adhesive-Related Skin Injury: Results of an International Consensus Meeting. *Journal of Wound, Ostomy and Continence Nursing*, 46(2), 125–136. <https://doi.org/10.1097/WON.0000000000000513>
- Liu, G., Chen, Y., Luo, J., Liu, A., & Tang, X. (2017). The Application of a Moldable Skin Barrier in the Self-Care of Elderly Ostomy Patients. *Gastroenterology Nursing*, 40(2), 117–120. <https://doi.org/10.1097/SGA.0000000000000143>
- Liu, H., Zhu, X., Yu, J., He, P., Shen, B., Tang, X., Xu, X., Wei, D., Chen, Y., & Li, X. (2021). The Quality of Life of Patients with Colorectal Cancer and a Stoma in China: A Quantitative Cross-sectional Study. *Advances in Skin and Wound Care*, 34(6), 302–309. <https://doi.org/10.1097/01.asw.0000744348.32773.b9>
- Ma, L.-L., Zhang, Y.-J., Yao, J.-X., Zhang, W.-Y., & Zhuang, H.-R. (2024). Influencing factors associated with peristomal skin complications after colorectal ostomy surgery: a systematic review and meta-analysis. *Wound Management & Prevention*, 70(3). <https://doi.org/10.25270/wmp.23114>
- Martins, L., Down, G., Andersen, B. D., Nielsen, L. F., Hansen, A. S., Herschend, N. O., & Størling, Z. M. (2022). The Ostomy Skin Tool 2.0: A new instrument for assessing peristomal skin changes. *British Journal of Nursing*, 31(8), 442–450. <https://doi.org/10.12968/bjon.2022.31.8.442>
- Maydick-Youngberg, D. (2017). A Descriptive study to explore the effect of peristomal skin complications on quality of life of adults with a permanent ostomy. *Ostomy Wound Management*, 63(5), 10–23. <https://www.scopus.com/inward/record.uri?eid=2-s2.0-85042662129&partnerID=40&md5=e6d862ec588fbbc4f71ecfbbcad738fe>
- Milne, C., Badaruddin, N. B., Kestsumpun, Y., Komatsu, M., Nishijima, A., Ong, C. E., Lina, Q., Madalinah, T. B. A. N., Xia, W., Wunnasaweg, A., Yang, L. F., & Ye, X. M. (2025). A Proactive Approach to Using Moldable Skin Barriers to Enhance Ostomy Care: A Multiple Case Series. *Journal of Wound, Ostomy and Continence Nursing*, 52(3), 244–251. <https://doi.org/10.1097/WON.0000000000001179>



- Mukherjee, D., Lim, W. M., Kumar, S., & Donthu, N. (2022). Guidelines for advancing theory and practice through bibliometric research. *Journal of Business Research*, 148, 101–115. <https://doi.org/https://doi.org/10.1016/j.jbusres.2022.04.042>
- Nybaek, H., Knudsen, D. B., Laursen, T. N., Karlsmark, T., & Jemec, G. B. E. (2010). Quality of life assessment among patients with peristomal skin disease. *European Journal of Gastroenterology & Hepatology*, 22(2), 139–143. <https://doi.org/10.1097/meg.0b013e32832ca054>
- Panattoni, N., Mariani, R., Spano, A., Leo, A. De, Iacorossi, L., Petrone, F., & Di Simone, E. (2023). Nurse specialist and ostomy patient: Competence and skills in the care pathway. A scoping review. *Journal of Clinical Nursing*, 32(17–18), 5959–5973. <https://doi.org/https://doi.org/10.1111/jocn.16722>
- Parini, D., Bondurri, A., Ferrara, F., Rizzo, G., Pata, F., & Veltri, M. (2023). Surgical management of ostomy complications : a MISSTO – WSES mapping review. *World Journal of Emergency Surgery*, 1–16. <https://doi.org/10.1186/s13017-023-00516-5>
- Persson, E., Berndtsson, I., Carlsson, E., Hallén, A.-M., & Lindholm, E. (2010). Stoma-related complications and stoma size - a 2-year follow up. *Colorectal Disease : The Official Journal of the Association of Coloproctology of Great Britain and Ireland*, 12(10), 971–976. <https://doi.org/10.1111/j.1463-1318.2009.01941.x>
- Persson, E. I., Forsmark, A., Scheffel, G., Sternhufvud, C., & Carlsson, E. (2025). Stoma Care Nurse Consultations Regarding Leakages and Peristomal Skin Complications During the First Year After Ostomy Creation: A Chart Review. *International Wound Journal*, 22(4), e70328. <https://doi.org/10.1111/iwj.70328>
- Ratliff, C. R. (2010). Early Peristomal Skin Complications Reported by WOC Nurses. *Journal of Wound Ostomy & Continence Nursing*, 37(5). [https://journals.lww.com/jwocnonline/fulltext/2010/09000/early\\_peristomal\\_skin\\_complications\\_reported\\_by.10.aspx](https://journals.lww.com/jwocnonline/fulltext/2010/09000/early_peristomal_skin_complications_reported_by.10.aspx)
- Ratliff, C. R. (2014). Factors related to ostomy leakage in the community setting. *Journal of Wound, Ostomy, and Continence Nursing : Official Publication of The Wound, Ostomy and Continence Nurses Society*, 41(3), 249–253. <https://doi.org/10.1097/WON.0000000000000017>
- Rolfen, T., Vestergaard, M., Hansen, M. F., Boisen, E. B., & Dambæk, M. R. (2024). Body Fit With a Pouching System With Concave Contour for People With an Outward Peristomal Body Profile: Effects on Leakage, Wear Time, and Quality of Life: A Randomized Controlled Cross-Over Trial. *Journal of Wound, Ostomy, and Continence Nursing : Official Publication of The Wound, Ostomy and Continence Nurses Society*, 51(4), 303–311. <https://doi.org/10.1097/WON.0000000000001088>
- Rolls, N., Yssing, C., Bøgelund, M., Håkan-bloch, J., & De, L. (2022). Utilities associated with stoma-related complications : peristomal skin complications and leakages. *Journal of Medical Economics*, 25(1), 1005–1014. <https://doi.org/10.1080/13696998.2022.2101776>
- Salvadalena, G., Colwell, J. C., Skountrianos, G., & Pittman, J. (2020). Lessons Learned about Peristomal Skin Complications: Secondary Analysis of the ADVOCATE Trial. *Journal of Wound, Ostomy and Continence Nursing*, 47(4), 357–363. <https://doi.org/10.1097/WON.0000000000000666>
- Serengga, I. M. D. B. A. (2025). Effectiveness of Continuous Nursing Care on Quality of Life and Management of Complications in Patients With Ostomy Surgery: A Systematic Review. 7(3), 449–464.
- Taneja, C., Netsch, D., Rolstad, B. S., Inglese, G., Eaves, D., & Oster, G. (2019). Risk and Economic Burden of Peristomal Skin Complications Following Ostomy Surgery. *Journal of Wound, Ostomy and Continence Nursing*, 46(2), 143–149. <https://doi.org/10.1097/WON.0000000000000509>
- Woo, K. Y., Beeckman, D., & Chakravarthy, D. (2017). Management of Moisture-Associated Skin Damage : A Scoping Review. 30(11), 494–501.

- Ying, X., Huang, L., Yu, F., & Xu, C. (2025). Application and Efficacy Evaluation of a Modified Ostomy Appliance in Managing Peristomal Irritant Contact Dermatitis : A Randomised Controlled Trial. 1–8. <https://doi.org/10.1111/iwj.70794>
- Zamarripa, C., Craig, A., Kelly, M. T., Mathews, C., & Folk, A. (2024a). Pouching System Leakage and Peristomal Skin Complications Following Ostomy Surgery in the Immediate Postoperative Period: A Retrospective Review. *Journal of Wound, Ostomy, and Continence Nursing : Official Publication of The Wound, Ostomy and Continence Nurses Society*, 51(6), 478–483. <https://doi.org/10.1097/WON.0000000000001124>
- Zamarripa, C., Craig, A., Kelly, M. T., Mathews, C., & Folk, A. (2024b). Pouching System Leakage and Peristomal Skin Complications Following Ostomy Surgery in the A Retrospective Review. 51(December), 478–483. <https://doi.org/10.1097/WON.0000000000001124>
- Zupic, Ivan, & Čater, Tomaž. (2014). Bibliometric Methods in Management and Organization. *Organizational Research Methods*, 18(3), 429–472. <https://doi.org/10.1177/1094428114562629>