EDITORIAL

REVISTA ENFERMAGEM ATUAL IN DERME

DIGITAL HEALTH IN OSTOMY CARE: TECHNOLOGICAL INNOVATION AND EVIDENCE GENERATION

SAÚDE DIGITAL NO CUIDADO À PESSOA COM ESTOMIA: INOVAÇÃO TECNOLÓGICA E PRODUÇÃO DE EVIDÊNCIAS

SALUD DIGITAL EN EL CUIDADO DE LA PERSONA CON OSTOMÍA: INNOVACIÓN TECNOLÓGICA Y PRODUCCIÓN DE EVIDENCIA

[1]**Luis Fernando Reis Macedo**
[2] **Igor Emanuel Soares Pinto**

[1]Mestre e Doutorando em Ciências na Escola Paulista de Enfermagem, Universidade Federal de São Paulo (UNIFESP), SP, Brazil. Orcid: https://orcid.org/0000-0002-3262-9503
[2]Doutor em Enfermagem, Professor Adjunto da Escola Superior de Enfermagem da Cruz Vermelha Portuguesa de Oliveira de Azeméis (ESSNorteCVP), Portugal; Investigador integrado no Centro de Investigação Interdisciplinar em Saúde da Universidade Católica Portuguesa, Portugal. Orcid: https://orcid.org/0000-0003-3739-2020

Corresponding Author
Igor Emanuel Soares Pinto
Rua Duarte Pacheco Pereira, 1, 1400-139 Lisboa, Portugal - E-mail: isp.igor@gmail.com

Submission: 08-04-2026
Approval: 08-04-2026

It is argued that the debate on digital health must move beyond technological enthusiasm, because the issue is not merely the modernization of health systems, but the quality and real impact of the care they are able to provide. Over the past decades, this discussion has become established as one of the central axes of the reorganization of global health systems. In the World Health Organization's (WHO) most recent formulation, the issue is not simply expanding the use of apps or platforms, but guiding a transformation capable of aligning human, organizational, technological, and financial resources in favor of more equitable, resilient, and people-centered systems. From this perspective, in 2025, the World Health Assembly extended the global digital health strategy through 2027, recognizing the centrality of this field to the next phase of international cooperation.[1,2]

In this transition, it is important to recognize that the expansion of digital health will only be socially legitimate if it is accompanied by concrete inclusion strategies. Digital health literacy cannot be treated as an ancillary attribute, but rather as a condition for innovation to translate into access, autonomy, and informed participation. In contexts marked by inequalities in education, connectivity, and social support, the digital environment risks reproducing preexisting barriers. For the person with an ostomy, this means that the clinical usefulness of platforms and monitoring systems will depend not only on their technological sophistication, but also on their accessibility, intelligibility, and suitability to the concrete needs of everyday life.[3]

In ostomy care, this discussion acquires particular clinical and ethical depth. Life with an ostomy requires everyday techniques, complication surveillance, psychosocial adaptation, reconstruction of body image, and longitudinal support, all of which often extend beyond hospital

REVISTA ENFERMAGEM ATUAL IN DERME

discharge. In this context, teleconsultations, telemonitoring, educational eHealth and mHealth interventions, and mobile applications with personalized guidance emerge as promising strategies to reduce discontinuities in care. More than communication tools, these solutions may function as extensions of clinical follow-up in the post-discharge period. When integrated with telenursing, they tend to strengthen self-confidence, adaptive capacity, and the person's sense of security in ostomy management.[3,4]

It is necessary to resist the idea that the incorporation of digital technologies, in and of itself, represents sufficient clinical progress in ostomy care. Although recent studies support favorable effects on self-care, quality of life, ostomy adjustment, self-efficacy, and complication reduction, these benefits are not distributed uniformly across the different outcomes assessed.[3,4] Thus, the field must distinguish more precisely which modalities are effective, for which patient profiles, and at what point in the clinical trajectory. Although technology may broaden access to care and support self-care tasks, it does not automatically eliminate suffering, social vulnerability, or structural and psychological barriers.[5]

It is argued that the incorporation of digital technologies into ostomy care can no longer remain supported predominantly by feasibility studies, satisfaction assessments, or local experiences with low comparability. The contemporary context requires pragmatic trials, multicenter studies, hybrid effectiveness-implementation designs, and evaluations capable of addressing clinically relevant nursing outcomes, such as stomal and peristomal complications, unplanned use of health services, maintenance of self-care after discharge, psychosocial aspects, and the impact on inequities in access. It also requires metrics that incorporate acceptability, digital health literacy, sustainability, and capacity for integration into care networks.[1-5] Nonetheless, gaps remain regarding the sustainability of effects in the medium and long term and the cost-effectiveness of these interventions under real-world practice conditions.[4]

The recent emergence of Artificial Intelligence (AI) broadens this debate. In the field of ostomy care, methodological studies have already explored the use of generative AI to develop educational materials, with favorable initial results regarding content comprehensibility and actionability; however, producing technically correct information is not equivalent to producing accessible communication.[5,6] The WHO's most recent guidance is also clear in recognizing that these tools are likely to gain ground in care delivery, reinforcing the urgency of governance mechanisms, traceability, and risk assessment. Therefore, AI may support education, triage, documentation, and decision support, but it should not obscure clinical judgment, informed consent, confidentiality, or professional responsibility for the care provided.[7] In addition, excessive reliance on algorithmic systems may foster automation bias, weaken reflective vigilance, and contribute to

REVISTA ENFERMAGEM ATUAL IN DERME

subtle forms of deskilling. For this reason, the value of AI in ostomy care does not lie in replacing professional judgment, but in its prudent use as a supportive resource for anticipation, monitoring, and context-sensitive decision-making.[6,7]

In this scenario, nursing not only participates in digital transformation, but is also likely to assume a structuring role as the clinical, ethical, and relational mediator of innovation. In practical terms, the nurse emerges as a guide for digital care, responsible for interpreting data flows, contextualizing technological alerts, supervising the interaction between person and system, and ensuring that technology enhances rather than impoverishes the quality of care. The International Council of Nurses' (ICN) 2025 review of telecare interventions in ostomy care highlights an eloquent aspect: in all included studies, the interventions were delivered by nurses. These professionals will be responsible for translating data into contextualized care, recognizing signs of deterioration, supporting self-care, mitigating digital exclusion, and ensuring that innovation preserves person-centeredness rather than merely operational efficiency.[2,3,6]

The implications for health policy are equally unequivocal. If digital health is to improve care for the person with an ostomy, it cannot be reduced to a scattered set of applications disconnected from the system; policies are needed to ensure interoperability, infrastructure, quality criteria, funding, data protection, professional training, and mechanisms for ongoing evaluation. The person's trust in the digital ecosystem will depend on clarity regarding the purpose of data use, the limits of automation, and the existence of effective safeguards against error, opacity, and misuse of information. Equally important is recognizing that digital inequality is not a residual variable, but rather a determinant of implementation.[1,2]

Accordingly, it is imperative that researchers, professionals, managers, and policy makers move beyond technological enthusiasm and assume, with greater rigor, the responsibility to produce, implement, and evaluate digital interventions grounded in robust evidence. For the person with an ostomy, digital innovation will only be meaningful if it is capable of sustaining autonomy, dignity, safety, and continuity of care beyond the hospital.[3-6] More than asking whether a given technology is innovative, what matters is establishing whether it is clinically relevant, socially just, and truly transformative in the lives of those living with an ostomy.

REFERENCES

1. World Health Organization. *Global strategy on digital health 2020–2027* [Internet]. Geneva: World Health Organization; 2025 [cited 2026 Feb 17]. Available from: World Health Organization publication page.

2. International Council of Nurses. *Digital health transformation and nursing practice: position statement* [Internet]. Geneva: International Council of Nurses; 2023 [cited 2026 Feb 17]. Available from: International Council of Nurses.
3. Soares-Pinto I, Braga AMP, Santos IMRMA, Ferreira NMRG, Silva SCRE, Alves PJ. eHealth promoting stoma self-care for people with an elimination ostomy: focus group study. *JMIR Hum Factors*. 2023;10:e39826. doi:10.2196/39826.
4. Qiao J, Zhao Y, Lu Y, Li Q, Dong HJ. Assessing the impact of educational eHealth and mHealth interventions on health outcomes in continuity of care for enterostomy patients: a meta-analysis. *Eur J Oncol Nurs*. 2024;72:102676. doi:10.1016/j.ejon.2024.102676.
5. Kim S, Jeong HN. Examining the impact of telehealth stoma care interventions on the ostomates: a systematic review and meta-analysis. *J Clin Nurs*. 2026;35(2):621-630. doi:10.1111/jocn.70037.
6. Yüceler Kaçmaz H, Kahraman H, Akutay S, Dağdelen D. Development and validation of an artificial intelligence-assisted patient education material for ostomy patients: a methodological study. *J Adv Nurs*. 2025;81(7):3859-3867. doi:10.1111/jan.16542.
7. World Health Organization. *Ethics and governance of artificial intelligence for health: guidance on large multi-modal models* [Internet]. Geneva: World Health Organization; 2025 [cited 2026 Feb 22]. Available from: World Health Organization publication page.

Funding and Acknowledgments:

The authors express their gratitude to the Paulista School of Nursing of the Federal University of São Paulo, the Higher School of Nursing of the Portuguese Red Cross of Oliveira de Azeméis, and the Interdisciplinary Health Research Center of the Portuguese Catholic University, for their institutional support in developing research focused on digital health and strengthening self-care for people with ostomies.

Data Availability Statement

No databases were generated in this study. The information presented is described in the body of the article.

Authorship Criteria:

The authors contributed substantially to the conception, planning, writing, critical review of the content, and final approval of the version to be published. Both meet the authorship criteria recommended by the ICMJE.

Conflict of Interest Statement

“Nothing to declare.”

Sientific Editor: Ítalo Arão Pereira Ribeiro. Orcid: https://orcid.org/0000-0003-0778-1447