

**SOFT TECHNOLOGIES AND QUALITY CARE BY NURSES IN PRIMARY HEALTH CARE:
AN INTEGRATIVE REVIEW****TECNOLOGIAS LEVES E O BOM ATENDIMENTO PRESTADO PELOS ENFERMEIROS DA
ATENÇÃO PRIMÁRIA À SAÚDE: UMA REVISÃO INTEGRATIVA****TECNOLOGÍAS BLANDAS Y BUENA ATENCIÓN PROPORCIONADA POR ENFERMERAS
DE ATENCIÓN PRIMARIA DE SALUD: UNA REVISIÓN INTEGRADORA**

Lucas Henrique Figueiredo Rocha¹, Claudia Schmidt Moura², Aliny Nunes da Bruz¹, Luana de Aguiar Alves¹, Mariany Soares de Souza¹, Ítalo Renan Vieira Silva¹, Isadora Maria Botelho Lessa², Vitória Andressa Oliveira de Arruda², Iany Eduarda Borges Rodrigues¹, Leandra Vitória da Rocha Teiche¹, Polliany Aparecida Prestes¹, Julia Alves de Miranda Pinto¹, Helena Isaura Fernandes Pereira¹, Rosane Maria Andrade Vasconcelos³, Rafael Teshima de Alencar⁴

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ABSTRACT

To analyze the knowledge produced in the literature regarding soft technologies and their contribution to quality care provided by nurses in Primary Health Care, highlighting practices and challenges. This is an integrative review conducted in six stages, including the formulation of the research question using the PICO strategy and the definition of inclusion and exclusion criteria. Articles published between 2020 and 2024 were used, available in the SciELO, LILACS and BDNF databases, selected using the Rayyan software and analyzed with the PRISMA flowchart. Data were interpreted in the light of existing scientific knowledge. The final sample consisted of nine articles. The findings emphasize the importance of welcoming, humanization, empathy and bonding in care, promoting treatment adherence and health improvement. However, challenges such as inadequate infrastructure and lack of training were identified, suggesting gaps to be addressed. Soft technologies significantly contribute to nursing care in Primary Health Care, standing out as a valuable tool for humanized practices. Nevertheless, additional efforts are required to overcome limitations and improve their implementations.

KEYWORDS: Reception. Nurse. Soft Technologies. Humanization. Primary Health Care.**RESUMO**

Este artigo tem por objetivo analisar o conhecimento produzido na literatura sobre as tecnologias leves e sua contribuição para o bom atendimento pelos enfermeiros da Atenção Primária à Saúde.

¹ Graduando(a) em Enfermagem pela Universidade do Estado de Mato Grosso, Cáceres/MT.

² Graduanda em Medicina pela Universidade do Estado de Mato Grosso, Cáceres/MT.

³ Enfermeira Doutora em Ciências, Docente no curso de enfermagem pela Universidade do Estado de Mato Grosso, Cáceres/MT.

⁴ Enfermeiro Mestrando em Ciências aplicadas a atenção hospitalar pelo Hospital Júlio Müller/ Universidade Federal do Mato Grosso, Cuiabá/MT.



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Trata-se de uma revisão integrativa realizada em seis etapas, incluindo a formulação da questão norteadora por meio da estratégia PICO e a definição de critérios de inclusão e exclusão. Foram utilizados artigos publicados entre 2020 e 2024, disponíveis nas bases de dados SciELO, LILACS e BDNF, selecionados por meio do software Rayyan e analisados com o fluxograma PRISMA. Os dados foram interpretados à luz do conhecimento científico existente. A amostra foi composta por nove artigos. Os achados enfatizam a importância do acolhimento, humanização, empatia e vínculo no cuidado, promovendo adesão ao tratamento e melhora na saúde. Contudo, desafios como infraestrutura inadequada e falta de capacitação foram identificados, sugerindo lacunas a serem preenchidas. As tecnologias leves contribuem significativamente para o cuidado de enfermagem na Atenção Primária à Saúde, destacando-se como ferramenta valiosa para práticas humanizadas. Entretanto, esforços adicionais são necessários para superar limitações e aprimorar sua implementação.

PALAVRAS-CHAVE: Acolhimento. Enfermeiro. Tecnologias leves. Humanização. Atenção Primária à Saúde.

RESUMEN

Este artículo tiene como objetivo analizar el conocimiento producido en la literatura sobre tecnologías blandas y su contribución al buen cuidado por parte de enfermeros en Atención Primaria de Salud. Se trata de una revisión integradora realizada en seis etapas, que incluye la formulación de la pregunta orientadora a través de la estrategia PICO y la definición de criterios de inclusión y exclusión. Se utilizaron artículos publicados entre 2020 y 2024, disponibles en las bases de datos SciELO, LILACS y BDNF, seleccionados mediante el software Rayyan y analizados con el diagrama de flujo PRISMA. Los datos se interpretaron a la luz del conocimiento científico existente. La muestra estuvo compuesta por nueve artículos. Los hallazgos enfatizan la importancia de la aceptación, la humanización, la empatía y el vínculo en la atención, promoviendo la adherencia al tratamiento y mejorando la salud. Sin embargo, se identificaron desafíos como infraestructura inadecuada y falta de capacitación, lo que sugiere que hay brechas que deben llenarse. Las tecnologías blandas contribuyen significativamente al cuidado de enfermería en la Atención Primaria de Salud, destacándose como una valiosa herramienta para prácticas humanizadas. Sin embargo, se necesitan esfuerzos adicionales para superar las limitaciones y mejorar su implementación.

PALABRAS CLAVE: Recepción. Enfermero. Tecnologías de la luz. Humanización. Atención Primaria de Salud.

INTRODUCTION

Technologies are an important part of assistance systems. According to the World Health Organization (WHO), these tools are considered an advancement that aligns with human needs and continuously adapts comprehensively across various fields of knowledge¹.



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When it comes to the term “technology,” the first thought that comes to mind is digital advancements, tools, and equipment, mainly materials for work-related use. This also includes the principles of healthcare ².

According to Merhy³, health technologies are like toolboxes, encompassing both tangible and intangible knowledge and its developments. When applied to the healthcare work process, these tools are classified into three categories: light and low complexity, such as welcoming and interpersonal relationships; light-hard and medium complexity, including care theories and structured materials like epidemiology; and hard and high complexity, such as the use of equipment, regulations, and organizational structures⁴.

The health techniques and technologies employed in nursing practice serve as instruments that integrate the knowledge of the field. Therefore, it is essential for nurses to seek the construction of their own knowledge, which should be related to quality of life and the way services are provided to users. Furthermore, nursing prioritizes care as the central aspect of its practice, which can be understood as a complex construct with multiple dimensions that encompass actions such as welcoming, active listening, humanized care, and empathy⁵.

Therefore, the use of these technologies in processes relevant to nurses contributes to the delivery of care, which supports meeting the needs of users of the Unified Health System (SUS) and strengthens the bond established with the professionals providing care⁶.

It is emphasized that this bond is the practical triumph of the nurse's work, determined by a foundation built on care practices, active listening, affection, and dedication to the users of Primary Health Care (PHC). In this way, user satisfaction serves as an indicator in the construction of an empathetic relationship, primarily established by the professional providing care⁷.

This construction takes place through the first contact with the user during the reception process. This is the main tool to be offered to patients, ensuring that their rights are preserved and that they receive humane and high-quality care. Thus, the nurse must seek methods and techniques, or in the context of this article, technologies, to improve their actions regarding the act of welcoming, paying attention, listening, solving problems, and establishing actions for prevention, promotion, and health recovery⁸.

Given this, the role of the nurse is essential to the healthcare team due to their fundamental actions in direct patient care, the execution of biomedical procedures, and the



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maintenance of the work environment, contributing to the efficient functioning and quality of care in Primary Health Care (PHC).

Under this context, this study aims to analyze, in the literature, the relationship between the use of soft technologies and the quality of care provided by nurses in Primary Health Care.

METHOD

This is an integrative review that contributes to building a comprehensive analysis of the current literature by allowing discussions on research methods and results in order to guide care practices based on scientific knowledge, as well as to reflect on the conduct of future studies⁹.

The development includes six stages: (1) Identification of the theme and selection of the research question, (2) establishment of criteria for inclusion and exclusion of studies, (3) categorization of studies, (4) evaluation of the studies included in the integrative review, (5) interpretation of the results, and (6) presentation of the review⁹.

In the first stage, the formulation of the research question was defined using the PICO strategy. This strategy aims to guide the structured construction of the research question, with the term PICO serving as an acronym for Population (P), Intervention (I), Comparison (C), and Outcomes (O) (results)¹⁰. Through the PICO strategy, the following question was defined: "What knowledge has been produced in the literature regarding light technologies and good care provided by Primary Health Care nurses?" The table below represents the formulation of the research question using the mentioned PICO strategy.

Frame 1. PICO Strategy for Formulating the Research Question. Cáceres, Mato Grosso, Brazil, 2024.

Acronym	Definition	Description
P	Population, patient, or problem	Nurses
I	Intervention or indicator	Use of lightweight technologies
C	Comparison or control	Comparison of the Use of Technologies in Healthcare
O	Outcomes or results	Promotion of good service during performance.

Source: authors, 2024.

This Integrative Literature Review article was registered in the Open Science Framework (OSF) under the registration number 10.17605/OSF.IO/87RVB. This is a registry for review protocols, ensuring that future researchers do not develop identical studies to this article, thus preventing cases of review duplication¹¹.



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For the second stage, criteria for the inclusion and exclusion of studies were defined to ensure the representativeness and relevance of the sample. The inclusion criteria involved full-text articles freely available in the electronic databases SciELO (Scientific Electronic Library Online), LILACS (Latin American and Caribbean Literature in Health Sciences), and BDNF (Nursing Database), in their original format, in Portuguese, and published between 2020 and 2024. The searches were conducted between October and December of 2024.

The following were excluded: books, theses, dissertations, and reviews of any kind. Additionally, the descriptors “Acolhimento” (Reception), “Enfermeiro” (Nurse), and “Tecnologias leves” (Light Technologies) were selected according to DeCS (Descriptors in Health Sciences). The Boolean operators “AND” and “OR” were applied to cross-reference descriptors for obtaining results.

The search strategies were applied as follows: in the LILACS and BDNF databases, the search strategy used the descriptors (Acolhimento) AND (Enfermeiro) OR (“Tecnologias leves”), with filters applied for Language – “Portuguese” and Publication year range – “2020 to 2024.” Já na base de dados SciElo seguiu com: (Acolhimento) AND (Enfermeiro) OR (“Tecnologias leves”); em seguida foram aplicados os filtros: Ano de publicação – “2020 a 2024”; Coleções – “Brasil”; SciElo Áreas Temáticas – “Ciências da Saúde”; e WoS Áreas Temáticas – “Enfermagem”

In the third stage, data were extracted from the studies, including the methodology, participants, and relevant results for the research question. For this, the Rayyan software was used to screen titles and abstracts found in database searches¹².

This contributed to the organization of the studies found based on the inclusion and exclusion criteria. Each article was assigned a numerical code to assist in describing its characteristics. Subsequently, the PRISMA¹³ flowchart (Figure 1) was used to outline the phases of search, identification, and selection of studies, and the results are presented in Figure 1.

It was refined by completing the fourth phase of the research with a critical and detailed evaluation of the selected studies by two independent reviewers. This includes an analysis of methodological validity and the identification of biases. The evidence and possible factors influencing the care provided by Primary Health Care nurses regarding the use of light technologies were considered¹⁴.

Step number five compiles the results interpreted in light of existing knowledge; these data can be found in Table 2. The discussion on light technologies and the quality of care provided

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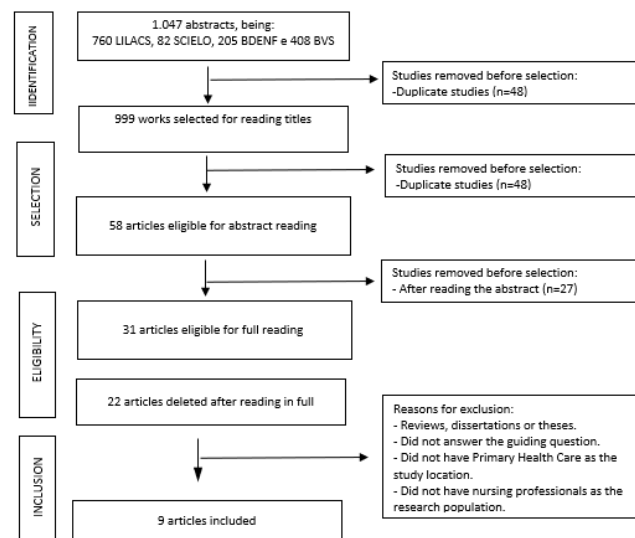
by Primary Health Care nurses was compared with the available literature. Gaps in knowledge were identified, suggesting areas for future research.

The final synthesis of the results was presented clearly and organized, allowing for an understanding of the main conclusions and implications of the review. The collected information highlighted the use of light technologies in care production, as well as opportunities for improving healthcare services provided by Primary Health Care nurses through their use.

RESULTS

Presented in Figure 1, the PRISMA¹³ flowchart illustrates the search processes in the databases, as well as the selection and inclusion of articles, initially totaling 1,047 references distributed across the following databases: BDENF: 205; LILACS: 760; SciElo: 82. Accordingly, Table 2 presents the nine articles selected to compose this integrative review, with all results being interpreted and synthesized through a comparison of the data evidenced in the analysis of the articles.

Figure 1. Flowchart of study selection, Cáceres, Mato Grosso, Brazil, 2024



Source: authors, 2024.

The selected articles from the three databases were: 4 articles (44.4%) from SciElo, 3 articles (33.3%) from LILACS, and 2 articles (22.2%) from BDENF. The year with the highest number of publications used was 2024, with 3 articles (33.3%), followed by the year 2022, also with 3 articles (33.3%), and the years 2020, 2021, and 2023, each with 1 article (11.1%).



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The studies identified and selected in this research, along with their results, journals, year of publication, article title, authors' names, study design, and level of evidence¹⁵, as well as the databases from which they were retrieved, are described in Table 2. The characterization of the articles found was presented in a table created by the authors (Table 2).

Table 2. Synthesis of articles according to the code/database, journal/year of publication, authors, title, design/level of evidence, and results. Cáceres, Mato Grosso, Brazil, 2024.

DATABASE	JOURNAL/YEAR OF PUBLICATION	AUTHORS	TITLE	DESIGN/LEVEL OF EVIDENCE (OCEBM)	RESULTS
01 – SciElo	Revista Enfermería: Cuidados humanizados, 2024	RIBEIRO, T. P.; MARINHO, A. S. C.; SILVA, P. S.	Análises das práticas de cuidado produzidas pelos enfermeiros da atenção primária no âmbito familiar	Qualitative study with thematic analysis, corresponding to level 5 of evidence.	The results highlight the central role of nurses in Primary Care, with an emphasis on health promotion, health education, humanization and strengthening of ties with families.
02 – LILACS	Revista Nursing, 2024	Rodrigues, KS; Cruz, ANP; Helena, IF; Barros, BKY; Rangel, ARFM; Costa, RL; Alencar, RT; Vasconcelos, RMA.	As tecnologias leves: Percepção dos profissionais de enfermagem e dos usuários do centro de oncologia	Qualitative exploratory study, level 5 of evidence.	Soft technologies at the oncology center in Cáceres/MT promote welcoming, bonding and access, positively influencing quality of life, adherence to treatment and patients' trust in the nursing team. Despite being recognized, their application faces challenges such as inadequate infrastructure and lack of familiarity with the term.
03 – LILACS	Revista de Enfermagem do Centro-Oeste Mineiro, 2024	Rosa, AP; Trigueiro, TH; Hornung, H; Wall, ML; Vaz, TH.	Rituais de cuidado de Enfermagem com mulheres e bebês diante das perdas gestacionais	Estudo qualitativo exploratório, nível 5 de evidência.	Os cuidados com mulheres em perdas gestacionais incluem acolhimento, vínculo, escuta ativa, orientações detalhadas e rituais com o bebê, criando

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					memórias afetivas. A prática humanizada é essencial, embora haja pouca discussão e protocolos formais sobre o tema.
04 – SciElo	Revista Escola Anna Nery, 2023	Sacramento, RC; Vendrescolo, C; Silva, CB; Metelski, FK; Ttrindade, LL; Adamy, EK.	Dimensões assistenciais do trabalho do enfermeiro na atenção primária	Estudo qualitativo, transversal, nível 4 de evidência.	Enfermeiros da Atenção Primária priorizam consultas e acolhimento, mas abordagens educativas são subutilizadas. Há necessidade de ampliar ações em grupo e integrar dimensões educacionais às práticas assistenciais. O modelo de atenção ainda reflete o enfoque biomédico, com desafios em equilibrar gestão e cuidado clínico.
05 – BDEF	Actas de Saúde Coletiva, 2022	Lachtim, SPF; Freitas, GL; Lazarini, WS; Marinho, GL; Horta, ALM; Duarte, ED; Lana, FCF.	Vínculo e acolhimento na Atenção Primária à Saúde: potencialidades e desafios para o cuidado	Descriptive, qualitative study, level 4 of evidence	O vínculo e o acolhimento na Atenção Primária à Saúde favorecem projetos terapêuticos integrados, reforçando a confiança e a valorização da enfermagem. Apesar disso, os desafios sociais comprometem a continuidade do cuidado e uso de ferramentas como a escuta qualificada.
06 – SciElo	Revista Cogitare Enfermagem, 2022	Sampaio, RA; Rodrigues, AM; Nunes, FC; Naghettini, AV.	Desafios no acolhimento com classificação de risco sob a ótica dos enfermeiros	Analytical qualitative research, level 5 of evidence	Challenges in high demand, informational, service and organizational issues that impact the reception process with risk classification.

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					Improvements in these aspects can favor humanization and efficiency in care in emergency units
07 – LILACS	Revista Científica da FAMINAS, 2022	Araújo, ACF; Alencar, TOS.	Processo de Trabalho de Enfermeiras na Atenção Primária à Saúde de Hipertensos e Diabéticos	Exploratory qualitative study, level 5 of evidence	The main action carried out by nurses is the nursing consultation, in addition to educational activities, reception, prescription renewal, shared consultations, collective consultation, discussion of therapeutic cases and home visits.
08 – SciELO	Revista de Enfermagem UERJ, 2021	Caixeta, ER; Coimbra, MAR; Gomes, NS; Santana, LC; Delfino, FAP; Ferreira, LA.	Percepção dos enfermeiros quanto ao acolhimento às pessoas que realizam o teste de HIV.	Descriptive exploratory study with a qualitative approach, level 4 of evidence	Nurses highlight challenges in welcoming patients undergoing rapid HIV testing, including fear and prejudice, inadequate structure and lack of training.
09 – BDEF	Revista de Enfermagem da UFSM (REUFSM), 2020	Motiello, M; Koerich, C; Lanzoni, GMM; Erdmann, AL; Higashi, GDC.	Atuação do enfermeiro na consolidação do cuidado longitudinal à pessoa com doença arterial coronariana.	Exploratory qualitative study, level 5 of evidence	Nurses in PHC provide reception, referral management and consultations to ensure longitudinal care for patients with CAD. Limiting factors include lack of communication between levels of care and inadequate resources

Source: authors, 2024.

The selected studies emphasize the importance of welcoming and humanizing practices, as well as active listening, empathy, professional positioning, and appropriate patient management. These characteristics demonstrate and corroborate all aspects relevant to the soft technologies proposed by Merry³, with a focus on nursing care, especially in Primary Health Care and in specific contexts, such as oncology and maternal health. Common positive points include



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the valorization of the nurse-patient bond, improved adherence to treatment, and health promotion.

On the other hand, recurring challenges include inadequate infrastructure, lack of training in the face of possible adverse situations and organizational difficulties and although humanized care is recognized as a fundamental practice, its implementation faces significant practical obstacles.

DISCUSSION

From the analysis of the study data on the articles chosen in the integrative review, three categories were listed, namely: Soft technologies in nursing care; barriers in the implementation of care tools; and impacts on clinical practice in the context of Primary Health Care.

Soft technologies in nursing care

Technologies based on welcoming, bonding and qualified listening are essential to improving quality of life, adherence to treatment and patients' trust in the nursing team. Humanization, expressed through affection, empathy and effective communication, was identified as a central element in strengthening professional relationships¹⁶.

The care practices carried out by nurses in primary care highlight the value of bonding as a central element for health promotion. Actions such as active listening and humanization contribute to a broader understanding of family needs and promote positive results in the context of Primary Care¹⁷.

Soft technologies, focused on interpersonal relationships, are crucial to promoting an empathetic and welcoming environment. Rosa¹⁸ highlights that bonds are built through respectful attitudes and validation of suffering, including simple gestures such as listening without judgment, hugging, and respecting patients' requests. Care also extends to offering clear guidance on procedures, reducing anxiety and favoring emotional coping¹⁸.

Nursing reception and consultations are highlighted as fundamental practices in Primary Health Care (PHC) and strengthen the autonomy and problem-solving ability of nurses. The organization of the work process, mediated by the Systematization of Nursing Care (SAE), allows nursing professionals to coordinate technical and relational actions efficiently, integrating educational and care dimensions that directly impact the quality of services provided¹⁹.



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Bonding and welcoming, considered soft technologies, emerge as essential tools for the implementation of comprehensive care in PHC. It is noteworthy that the construction of relationships of affection and trust strengthens comprehensive therapeutic projects. Certain approaches may include the use of patients' narratives to personalize care and explore more deeply the sociocultural contexts of the communities served²⁰.

Several challenges limit the effective implementation of Risk Classification Reception (ACCR). Among the most notable are the overcrowding of units and the high demand for non-urgent cases. The lack of information on the part of the population about how ACCR works generates dissatisfaction and resistance to the prioritization model. In addition, organizational issues, such as the lack of clear protocols, associated with the stressful work environment, hinder the delivery of humanized and effective care²¹.

Barriers to implementing care tools

The application of soft technologies faces barriers such as insufficient infrastructure, lack of knowledge about care flows, and team overload. In addition, the concept of “soft technologies” is still not widely used, making its systematic implementation difficult. These limitations compromise reception and access, challenging professionals to overcome such difficulties to provide humanized care¹⁶.

Difficulties related to the restructuring of health units, the training of professionals and the resistance of some nurses to participate in innovative initiatives are also barriers faced by nurses in providing good care. In addition, administrative demands and the lack of a more multidisciplinary approach limit the scope of care practices, reducing the possible positive impact of soft technologies on care¹⁷.

In Primary Health Care, there are challenges to consolidating educational practices due to the predominance of the biomedical model and the overload of functions assigned to nurses. The lack of formal recognition of Advanced Practice Nursing and the precariousness of specific training compromise the full development of more comprehensive care strategies¹⁹.

The high demand and lack of training compromise the effectiveness of the use of soft technologies, since there is no systematic evaluation to measure the impact of their use. Using qualitative and quantitative indicators can strengthen implementation and justify structural and educational investments²⁰.

Impacts on clinical practice in the context of Primary Health Care



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Lucas Henrique Figueiredo Rocha, Claudia Schmidt Moura, Aliny Nunes da Bruz, Luana de Aguiar Alves, Mariany Soares de Souza, Ítalo Renan Vieira Silva, Isadora Maria Botelho Lessa, Vitória Andressa Oliveira de Arruda, Jany Eduarda Borges Rodrigues, Leandra Vitória da Rocha Teiche, Polliany Aparecida Prestes, Julia Alves de Miranda Pinto, Helena Isaura Fernandes Pereira, Rosane Maria Andrade Vasconcelos, Rafael Teshima de Alencar

The results show positive impacts on the implementation of soft technologies, such as greater user satisfaction and confidence in the service. Feelings of safety and acceptance reinforce the assistance with the aim of ensuring more effective results, even in contexts of structural limitations¹⁶.

Humanized care and a holistic approach allow nurses to adapt interventions to the specific needs of families, promoting health education and disease prevention^{17,18}.

The care and educational practices performed by nurses in PHC have a direct impact on the resolution of services and health promotion. Nursing consultations are consolidated as a strategic tool for coordinating health care and education, while strengthening the autonomy of professionals. Integrating educational approaches into daily clinical practice can optimize individual and collective results¹⁹.

A little-explored dimension is the use of bonding as a catalyst for change in community organization, involving local leaders to expand the scope of educational and preventive actions. The continuity of these practices can be seen as a promoter of collective health and a transformer of realities, especially in contexts of high social vulnerability^{20,21}.

Reception transcends individual practice and is configured as a strategic public health intervention. When carried out in a humanized manner and based on qualified listening, it contributes to the reduction of structural and psychosocial barriers that hinder the nurse-user relationship²².

The role of nurses in PHC enhances case management and comprehensive care, contributing to the reduction of complications and hospitalizations. Strategies such as health education, nursing consultation and conscious referral strengthen the care network and patient autonomy. Continuity of care is favored when nurses assume a central role in coordinating and planning actions²³.

Limitations of the study

One limitation identified in this study is the lack of recent scientific publications, especially in the last five years, that address how soft technologies support the quality of care provided by nurses in Primary Health Care (PHC). This scarcity highlights the need for further research on the role of these professionals in the care offered in health services.

Contributions to the field of nursing and health



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This study broadens the understanding of the use of soft technologies by nursing professionals in PHC. The results aim to drive improvements in health services, highlighting the relevance of these tools for humanized care. In contexts marked by insecurity and anxiety, nurses who use care technologies in reception can strengthen adherence to treatment and the bond with users, representing a significant difference and a valuable opportunity to transform care practice.

CONCLUSION

This study highlighted the connection between the use of soft technologies and the quality of care provided by nurses in Primary Health Care (PHC). These tools are essential for promoting reception, problem-solving and health promotion actions in the current scenario.

Practices that use soft technologies, manifested in interactions such as talking, listening and comforting, stand out in the reception, an essential element for humanized care. This process fosters the bond between the patient and the nurse, providing support from the arrival to the conclusion of the care in health services.

However, the challenges faced by nurses, such as high demands and structural problems, intensify the complexity of maintaining quality care. In this context, individual and collective collaboration of these professionals is essential to ensure more humanized and effective care.

Finally, the creation of standardized protocols in health institutions is essential. These guidelines should encourage the use of soft technologies as an essential tool in care, expanding health production and strengthening PHC.

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