ESTIMA
Brazilian Journal of Enterostomal Therapy

REVIEW ARTICLE
https://doi.org/10.30886/estima.v19.1122_IN

TECHNOLOGIES FOR HEALTH EDUCATION IN THE CARE OF PATIENTS WITH URINARY INCONTINENCE: AN INTEGRATIVE REVIEW

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ABSTRACT

Objective: analyze the technologies available in the literature used for health education in the care of people with urinary incontinence. **Methods:** integrative review, with database searches: *Índice Bibliográfico Espanhol de Ciências da Saúde* (IBECS), *Base de Dados em Enfermagem* (BDENF) via *Biblioteca Virtual em Saúde* (BVS), Medical Literature Analysis and Retrieval System Online via Pubmed (MEDLINE/PubMed) from the National Library of Medicine, Cumulative Index to Nursing and Allied Health Literature (CINAHL), Scopus, Web of Science and Embase. The collection was carried out in February 2021, with the main descriptors: Urinary Incontinence, Educational Technology and Health Education. **Results:** 91 articles were selected, after analyzing the inclusion and exclusion criteria, there were only 5 productions that were selected, presenting as a strategy the technologies: multimedia course, videos, mobile application and book/booklet. The articles were published between 1997 and 2020. The dimensions considered were: development of health technologies for the treatment of urinary incontinence and knowledge, adherence and the effect of using health technologies for the treatment of urinary incontinence. **Conclusion:** the technologies used were diversified, with the adherence and the effect being directly proportional, and it depends on how the individual understands urinary incontinence and the impact it brings on each person's life.

DESCRIPTORS: Urinary incontinence. Technology. Health education. Education of the population. Biomedical technology. Stomatherapy.

TECNOLOGIAS PARA EDUCAÇÃO EM SAÚDE NO CUIDADO AO PACIENTE COM INCONTINÊNCIA URINÁRIA: REVISÃO INTEGRATIVA

RESUMO

Objetivo: analisar as tecnologias disponíveis na literatura utilizadas para a educação em saúde no cuidado às pessoas com incontinência urinária. **Métodos:** revisão integrativa, com buscas nas bases: Índice Bibliográfico Espanhol de Ciências da Saúde (IBECS), Base de Dados em Enfermagem (BDENF) via Biblioteca Virtual em Saúde (BVS), *Medical Literature Analysis and Retrieval System Online* via Pubmed (MEDLINE/PubMed) da *National Library of Medicine, Cumulative Index to Nursing and Allied Health Literature* (CINAHL), Scopus, *Web of Science* e Embase. A coleta foi realizada em fevereiro de 2021, tendo como principais descritores: Incontinência urinária, Tecnologia educacional e Educação em saúde. **Resultados:** foram selecionados 91 artigos, após a análise dos critérios de inclusão e exclusão restaram 5 produções que foram selecionadas, apresentando como estratégia as tecnologias: curso de multimídia, vídeos, aplicativo móvel e livro/livreto. Os artigos foram publicados entre

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Section Editor: Gisela Maria Assis
Received: Aug. 29, 2021 | Accepted: Nov. 04, 2021
How to cite: Braga FCSAG; Costa AP; Neves NVP; Silva GRF; Silva ARV; Jorge HMF. Technologies for health education in the care of patients with urinary incontinence: an integrative review. ESTIMA, Braz. J. Enterostomal Ther., 2021, 19: eXX21. https://doi.org/10.30886/estima.v19.1122_IN

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1997 e 2020. As dimensões consideradas foram: desenvolvimento de tecnologias em saúde para o tratamento da incontinência urinária e conhecimento, adesão e efeito do uso de tecnologias em saúde para o tratamento da incontinência urinária. **Conclusão:** as tecnologias utilizadas foram diversificadas, sendo a adesão e o efeito diretamente proporcionais, e depende de como o indivíduo compreende a incontinência urinária e o impacto que ela traz na vida de cada um.

DESCRITORES: Incontinência urinária. Tecnologia. Educação em saúde. Educação da população. Tecnologia biomédica. Estomaterapia.

TECNOLOGÍAS PARA LA EDUCACIÓN SANITARIA EN LA ATENCIÓN DE PACIENTE CON INCONTINENCIA URINARIA: UNA REVISIÓN INTEGRADORA

RESUMEN

Objetivo: analizar las tecnologías disponibles en la literatura que se utilizan para la educación sanitaria en la atención a las personas con incontinencia urinaria. **Métodos:** revisión integradora, con búsquedas en las bases: Índice Bibliográfico Español de Ciencias de la Salud (IBECS), Base de Datos en Enfermería (BDENF) en la Biblioteca Virtual de la Salud (BVS), *Medical Literature Analysis and Retrieval System Online* vía Pubmed (MEDLINE/PubMed) de la *National Library of Medicine, Cumulative Index to Nursing and Allied Health Literature* (CINAHL), Scopus, *Web of Science* y Embase. La recopilación se realizó en febrero de 2021, teniendo como principales descriptores: Incontinencia urinaria, Tecnología educativa y Educación sanitaria. **Resultados:** se seleccionaron 91 artículos, luego de analizar los criterios de inclusión y exclusión quedaron 5 producciones que fueron seleccionadas, presentando como estrategia las tecnologías: curso de multimedios, videos, aplicación móvil y libro/libreto. Los artículos fueron publicados entre 1997 y 2020. Las dimensiones consideradas fueron: desarrollo de tecnologías sanitarias para el tratamiento de la incontinencia urinaria y el conocimiento, adhesión y efecto del uso de tecnologías sanitarias para el tratamiento de la incontinencia urinaria. **Conclusión:** las tecnologías utilizadas fueron diversas, siendo la adhesión y el efecto directamente proporcionales, dependiendo de cómo el individuo comprende la incontinencia urinaria y el impacto que esta causa en la vida de cada uno.

DESCRIPTORES: Incontinencia urinaria. Tecnología. Educación sanitaria. Educación de la población. Tecnología biomédica. Estomaterapia.

INTRODUCTION

Urinary incontinence (UI) has as its basic definition the involuntary loss of urine. In 1998, it became part of the International Classification of Diseases/World Health Organization (ICD/WHO), no longer considered just a symptom and becoming a disease[1].

UI does not cause death, but it has a profound negative impact on the well-being, quality of life and aspects of daily life of people affected, including personal, work and leisure activities. It is associated with a deep feeling of humiliation and stigma, affects various age groups and the main conditioning factors that interfere with quality of life (QL) are the severity and type of incontinence[2,3].

According to the Brazilian Society of Urology *Sociedade Brasileira de Urologia (SBU)*, this condition affects about 400 million people worldwide, and in Brazil there is an average of 10 million people with incontinence. Among general population studies, the prevalence of UI ranged between 25% and 45% in adult women, and in adult men there were publications with variations between 1 and 39%, with the proportion in women being at least twice as high when compared to men[2].

A study on nursing care for people with UI highlighted the importance of the professional's role at various times of performance, in order to characterize UI as a basic issue of nursing care. In the meantime, nurses can work in different areas

of health knowledge, and among these areas there is stomatherapy, in which specialists are qualified to provide assistance to people who have stomas, wounds, anal and urinary incontinence[4].

People with a higher level of education have more knowledge of health risks and care, as well as recognize where to seek guidance, preventing further damage. Therefore, the role of nurses through health education is of fundamental importance to clarify and collaborate in the individual's understanding of what it means to be incontinent, the main causes, always clarifying doubts and myths[5].

With advances in forms of communication, the development and inclusion of new modalities of educational technologies to promote care were observed, contributing to the prevention of UI, in addition to facilitating adherence to a care plan[6].

In Brazil, health technologies are understood as knowledge and actions related to products, materials, equipment, procedures, organizational, educational, information and support systems, and care programs and protocols, through which attention and care with health are provided to the population[7].

With regard to the health education process, nurses can rely on actions or information resources to facilitate communication and understanding in the community. Technologies in health and nursing present evident advances for care, aiming at the direct improvement of the provision of care to society. Thus, these can be useful, among other purposes, to facilitate the understanding of certain illnesses and more quickly provide alternatives for patients.

Given the context, it is understood the importance of health education and the existence of different strategies for the acquisition of knowledge and consequent collaboration to change behavior and improve quality of life.

Aiming to identify and know the strategies used to deal with UI through educational technologies, the question was asked: Which technologies available in the literature are used for health education in the care of people with UI? Thus, the objective was to analyze the technologies available in the literature used for health education in the care of people with UI.

METHODS

This is an integrative literature review (ILR) in order to compile studies that address information on educational methods aimed at UI.

The survey took place in February 2021, following the six steps directed at ILR: elaboration of the survey question; search of primary studies in database; data extraction; analysis of included studies with interpretation of results and presentation of the review[8].

The research question was organized according to the PICo strategy (P - population; I - intervention/interest; Co - context), as it is an integrative review[8]. Thus, the following structure was considered: P – people with UI; I – educational technologies in health; Co – health education. Thus, the following question was elaborated: What technologies are used for health education in the care of people with UI?

The following inclusion criteria were adopted for the studies: original articles regardless of the published language, without a temporal filter. As an exclusion criterion, it was observed if the articles answered the research question and duplicate articles were counted only once. Documents such as letters to the editor, animal studies, annals of scientific events, theses, dissertations and literature reviews were not included.

Then the databases were chosen: *Literatura Latino-Americana e do Caribe em Ciências da Saúde (LILACS), Índice Bibliográfico Espanhol de Ciências da Saúde (IBECS), Base de Dados em Enfermagem (BDENF) via Biblioteca Virtual em Saúde (BVS)* Medical Literature Analysis and Retrieval System Online via Pubmed (MEDLINE/PubMed), National Library of Medicine, Cumulative Index to Nursing and Allied Health Literature (CINAHL), Scopus (Elsevier), Web of Science and Embase (Elsevier).

To search for articles in the databases, the descriptors of the *Banco de Descritores em Ciências da Saúde (DeCS)*, Medical Subject Headings (MeSH) and CINAHL titles, as well as keywords and synonyms in English and Portuguese. The Boolean operators "OR" and "AND" were used in data collection.

The descriptors used in the research, as well as the search strategies are shown in Table 1.

Table 1. Controlled and uncontrolled descriptors used to build the search strategy in the selected databases. Teresina (PI), Brasil – 2021.

MeSH		
P	CD	Urinary, Incontinence; Urinary Incontinence, Urge; Urinary Incontinence, Stress
	UCD	Incontinence, Urinary; Urinary Reflex Incontinence; Incontinence, Urinary Reflex; Urinary Urge Incontinence; Urge Incontinence; Incontinence, Urge; Urinary Stress Incontinence; Incontinence, Urinary Stress; Stress Incontinence, Urinary
I	CD	Educational Technology; Information Technology
	UCD	Technology, Educational; Educational Technologies; Technologies, Educational Instructional Technology; Technology, Instructional; Instructional Technologies Technologies, Instructional; Information Technologies; Technology, Information
Co	CD	Health Education
	UCD	Education, Health; Community Health Education; Education, Community Health Health Education, Community
Search expression MEDLINE via PubMed 27 articles		((((((((((((Urinary, Incontinence[MeSH Terms]) OR (Urinary Incontinence, Urge[MeSH Terms])) OR (Urinary Incontinence, Stress[MeSH Terms])) OR (Incontinence, Urinary)) OR (Urinary Reflex Incontinence)) OR (Incontinence, Urinary Reflex)) OR (Urinary Urge Incontinence)) OR (Urge Incontinence)) OR (Incontinence, Urge)) OR (Urinary Stress Incontinence)) OR (Incontinence, Urinary Stress)) OR (Stress Incontinence, Urinary)) AND ((((((((((Educational Technology[MeSH Terms]) OR (Information Technology[MeSH Terms])) OR (Technology, Educational)) OR (Educational Technologies)) OR (Technologies, Educational)) OR (Instructional Technology)) OR (Technology, Instructional)) OR (Instructional Technologies)) OR (Technologies, Instructional)) OR (Information Technologies)) OR (Technology, Information))) AND (((((Health Education[MeSH Terms]) OR (Education, Health)) OR (Community Health Education)) OR (Education, Community Health)) OR (Health Education, Community))
Search expression Web of Science 2 articles		((((((((((("Urinary,Incontinence" OR "Urinary Incontinence,Urge") OR "Urinary Incontinence, Stress") OR Incontinence, Urinary) OR Urinary Reflex Incontinence) OR Incontinence, Urinary Reflex) OR Urinary Urge Incontinence) OR Urge Incontinence) OR Incontinence, Urge) OR Urinary Stress Incontinence) OR Incontinence, Urinary Stress) OR Stress Incontinence, Urinary) AND ((((((((((("Educational Technology" OR "Information Technology") OR Technology, Educational) OR Educational Technologies) OR Technologies, Educational) OR Instructional Technology) OR Technology, Instructional) OR Instructional Technologies) OR Technologies, Instructional) OR Information Technologies) OR Technology, Information)) AND (((((((("Health Education" OR Education, Health) OR Community Health Education) OR Education, Community Health) OR Health Education, Community))
Search expression Scopus 1 article		(TITLE-ABS-KEY (“Urinary,Incontinence”) OR TITLE-ABS-KEY (“Urinary Incontinence,Urge”) OR TITLE-ABS-KEY (“Urinary Incontinence, Stress”) OR TITLE-ABS-KEY (“incontinence, urinary”) OR TITLE-ABS-KEY (“urinary reflex incontinence”) OR TITLE-ABS-KEY (“incontinence, urinary reflex”) OR TITLE-ABS-KEY (“urinary urge incontinence”) OR TITLE-ABS-KEY (“urge incontinence”) OR TITLE-ABS-KEY (“incontinence, urge”) OR TITLE-ABS-KEY (“urinary stress incontinence”) OR TITLE-ABS-KEY (“incontinence, urinary stress”) OR TITLE-ABS-KEY (“stress incontinence, urinary”)) AND (TITLE-ABS-KEY (“Educational Technology”) OR TITLE-ABS-KEY (“Information Technology”) OR TITLE-ABS-KEY (“technology, educational”) OR TITLE-ABS-KEY (“educational technologies”) OR TITLE-ABS-KEY (“technologies, educational”) OR TITLE-ABS-KEY (“instructional technology”) OR TITLE-ABS-KEY (“technology, instructional”) OR TITLE-ABS-KEY (“instructional technologies”) OR TITLE-ABS-KEY (“technologies, instructional”) OR TITLE-ABS-KEY (“information technologies”) OR TITLE-ABS-KEY (“technology, information”)) AND (TITLE-ABS-KEY (“Health Education”) OR TITLE-ABS-KEY (“education, health”) OR TITLE-ABS-KEY (“community health education”) OR TITLE-ABS-KEY (“education, community health”) OR TITLE-ABS-KEY (“health education, community”))

continue...

Table 1. Continuation...

MeSH		
EMBASE/ ELSEVIER 60 articles		('urinary, incontinence' OR 'urinary incontinence, urge' OR 'urinary incontinence, stress' OR (incontinence, AND urinary) OR (urinary AND reflex AND incontinence) OR (incontinence, AND urinary AND reflex) OR (urinary AND urge AND incontinence) OR (urge AND incontinence) OR (incontinence, AND urge) OR (urinary AND stress AND incontinence) OR (incontinence, AND urinary AND stress) OR (stress AND incontinence, AND urinary)) AND ('educational technology' AND 'information technology' OR (technology, AND educational) OR (technologies, AND educational) OR (instructional AND technology) OR (technology, AND instructional) OR (instructional AND technologies) OR (instructional; AND information AND technologies) OR (technology, AND information)) AND ('health education' OR (education, AND health) OR (community AND health AND education) OR (education, AND community AND health) OR (health AND education, AND community))
Titles CINAHL		
P	CD	Urinary Incontinence; Urge Urinary Incontinence; Stress Urinary Incontinence
	UCD	Incontinence, Urinary
I	CD	Educational Technology; Information Technology
	UCD	Instructional Technology; Technology, Educational; Technology, Information
Co	CD	Health Education
	UCD	Community Health Education; Education, Health
Search expression CINAHL 1 article		MH ("Urinary Incontinence" OR "Urge Urinary Incontinence" OR "Stress Urinary Incontinence" OR Incontinence, Urinary) AND MH ("Educational Technology" OR "Information Technology" OR Instructional Technology OR Technology, Educational OR Technology, Information) AND MH ("Health Education" OR Community Health Education OR Education, Health)
DeCS (IBECS, LILACS or BDENF)		
P	CD	Incontinência Urinária; Incontinência Urinária de Urgência; Incontinência Urinária por Estresse
	UCD	Incontinência de Urgência; Incontinência Urinária de Esforço
I	CD	Tecnologia Educacional; Tecnologia da Informação
	UCD	Tecnologia Instrucional; TIC em Saúde; TIC na Saúde
Co	CD	Educação em Saúde
	UCD	Educar para a Saúde; Educação para a Saúde; Educação para a Saúde Comunitária
Search expression IBECS, LILACS e BDENF via BVS		(("Incontinência Urinária") OR ("Incontinência Urinária de Urgência") OR (Incontinência Urinária por Estresse) OR (Incontinência de Urgência) OR (Incontinência Urinária de Esforço)) AND (("Tecnologia Educacional") OR ("Tecnologia da Informação") OR (Tecnologia Instrucional) OR (TIC em Saúde) OR (TIC na Saúde)) AND (("Educação em Saúde") OR (Educar para a Saúde) OR (Educação para a Saúde) OR (Educação para a Saúde Comunitária))

CD = Controlled Descriptors; UCD = Uncontrolled descriptors.

Data were systematically extracted and recorded by two researchers, independently, who read and reviewed the articles. In case of inconsistency, a third researcher read it and resolved the doubt. To extract the research data, an instrument developed by the Joanna Briggs Institute (JBI) was used, called Qualitative Data Extraction Instrument, which contains the following information: title, authors, year of publication, journal, method, data analysis used, context geographic and cultural, participants, interventions, main results and conclusions[9]. For publication it was adapted and standardized with the descriptions of the Authors / Year / Country; Drawing / Sample; Goal; Educational technology; Outcome and Level of Evidence.

PTo analyze the level of evidence in the studies, the following recommendations from the Oxford Center for Evidence-based Medicine were used: 1A – systematic review of randomized controlled clinical trials; 1B – randomized controlled clinical trial with narrow confidence interval; 1C – "all or nothing" therapeutic results; 2A – systematic review of cohort studies; 2B – cohort study (including lower quality randomized clinical trial); 2C – observation of therapeutic results or ecological studies; 3A – systematic review of case-control studies; 3B – case-control study; 4 - case reports (including lower quality cohort or case-control); 5 - expert opinion[10].

After the critical analysis of the final sample, the qualitative synthesis was performed descriptively, subdividing into categories.

RESULTS

In this study, 91 articles were retrieved, with the reading of the titles and abstract, 65 were not included because they were not related to the topic. Of the 26 included, 9 appeared in more than one database, keeping 1 of each article, with 6 being excluded, totaling 20 articles; of these, 6 were excluded due to difficult access, the abstract or the full article not being found, leaving 14 for full reading. After applying the inclusion and exclusion criteria, 9 articles were excluded for not being related to the objective of the study, resulting in a final sample of 5 articles. The sample selection of studies is detailed in Fig. 1.

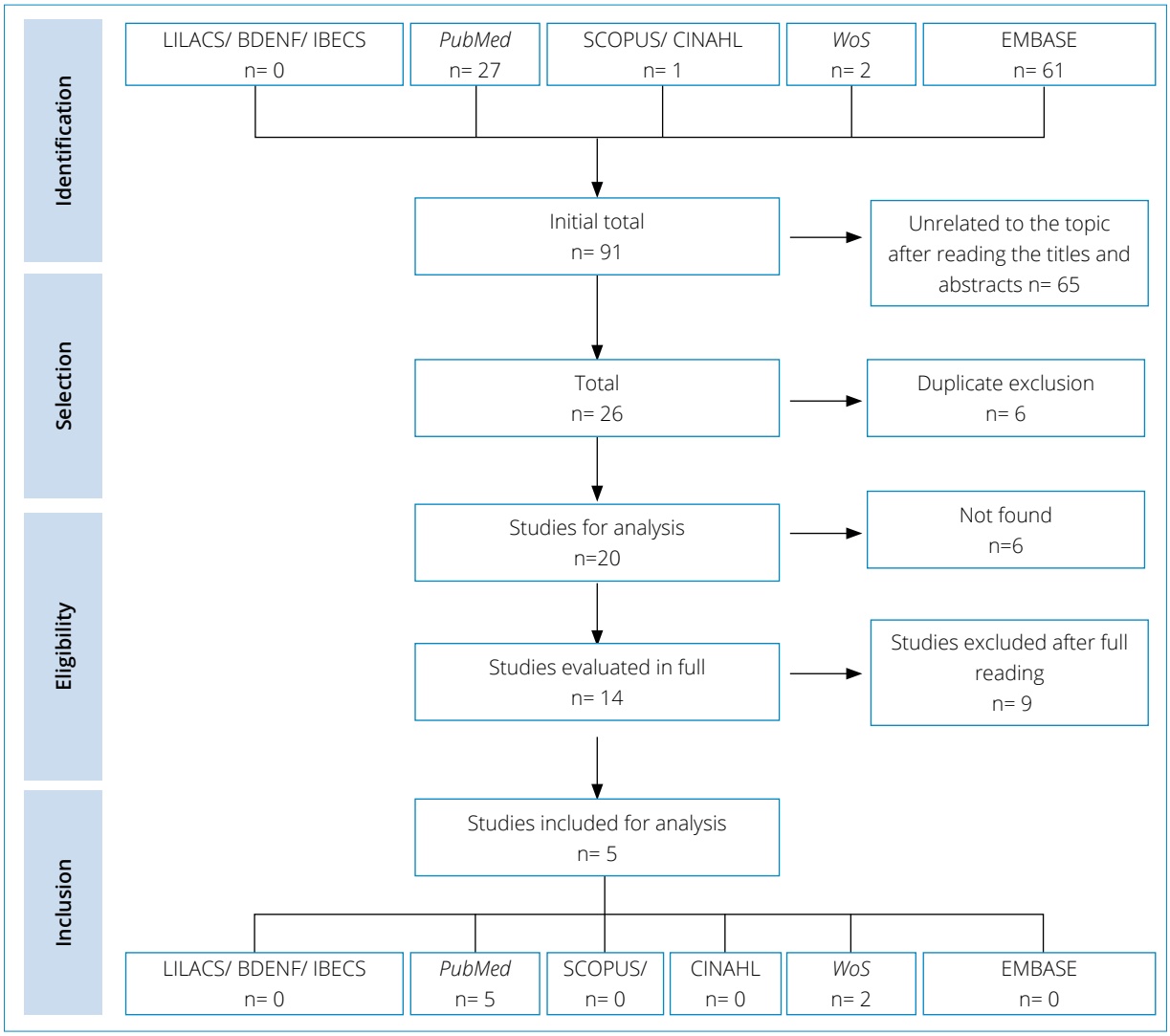

Figure 1. Flowchart of identification, selection and inclusion of articles for the development of the research. Teresina (PI), Brasil – 2021.

The selected articles aimed to create or measure an educational technology to be used in people with some type of UI and/or their caregivers, with four intervention studies and one validation study. There is a scarcity of publications on the effect of educational technologies aimed at UI.

Among the technologies that appeared as a strategy were obtained: a multimedia course, two videos, an application and a book/booklet. The studies were published between 1997 and 2020, being one American, one Brazilian, one from the Middle East, one from Sweden and one from Holland, all published in English. As for the level of evidence, 2B studies predominated10.

With regard to the target audience, two surveys targeted the general public, two for women, one specifically for postpartum women and one for the elderly. And all had favorable outcomes for the effect of the strategies used and for the awareness, prevention and/or conservative treatment of UI. The information is compiled in Table 2.

Table 2. Summary of primary studies on educational technologies in the care of patients with urinary incontinence included in the research. Teresina (PI), Brasil – 2021.

Authors/Year/ Country	Drawing/ Sample	Objective	Educational technology	Outcome	Level of Evidence
Niewijk e Weijtsb[11]/ 1997/ Netherlands	Intervention study/134 participants	Effect of a multimedia course for people with UI.	multimedia course	A mass media approach offers gains in secondary prevention for UI, at least in the short term.	2B
Franzen et al[12]/ 2008/ Sweden	Intervention Study/1738 participants	Study and evaluate the effect of a UI information campaign for the general public.	40 pages book	Efficient method for disseminating knowledge about the UI.	54,5
Seshan; Muliira[13]/ 2015/ India	Intervention Study/598 women	Assess women's knowledge about UI and the effectiveness of a video watched with a Kegel Exercises Teaching Program.	Videos	Effective for improving knowledge about UI in large groups of women with or without incontinence.	2B
Saboia et al[14]/ 2019/ Brazil	Methodological study/44 participants	Describe the development of the Continence App to promote adherence to pelvic floor muscle training and prevention of UI in postpartum women.	mobile app	App validation for use in clinical practice as an educational technology to promote adherence to pelvic floor muscle training and postpartum UI prevention.	2B
Davis, et al[15] /2020/ USA	Quasi-experimental project/207 participants	Explore the feasibility of technology, intervention and skills development to support informal caregivers of older adults with UI; Assess the acceptability and usefulness of the intervention and its impact on the outcomes of informal caregivers and recipients of care.	Videos	Implementing intervention technologies for UI is feasible, effective and beneficial; important for improving access to evidence-based interventions and for clinical experts.	2B

IU = Incontinência urinária.

The review identified different structures of the studied object, classified into two categories: Development of health technologies for the treatment of UI; Knowledge, adherence and effect of using health technologies for the treatment of UI.

Development of health technologies for the treatment of urinary incontinence

With the selected studies, it was possible to show that in the study carried out in the Netherlands, the multimedia strategy was used through book, television and radio, seeking to reach a greater number of people, whether continent or not, however, to assess the effect of the tools, it was possible to target audience people with UI. Respondents who returned the questionnaire after 3 months counted a sample of 134 participants. These received tasks such as recording their habits and urinary losses, training exercises for the lower pelvic floor muscles, improving posture, breathing and relaxation, as well as guidance on behavior changes[11].

As for the study carried out in Sweden, we chose to work with a book in the development of educational actions on UI, evaluating its effect on the general population aged over 18 years. The technology was well received by the target audience, who should return the questionnaire 1-2 months after receiving the book. Of the 3,658 instruments distributed, a sample of 1,738 respondents was obtained, with the highest number of responses in the 65 to 79 age group. The material has 40 pages with information on a systematic review on the topic, etiology of UI, diagnostic procedures and available treatments[12]. It can be seen that actions and strategies using the printed model are still very effective, given the ease of reaching a significant number of people.

Two studies used videoclass technology, one of the studies was conducted in India with 598 continent and incontinent women. A pre- and post-intervention questionnaire was applied to both groups, comparing knowledge about UI between the groups and evaluating knowledge about the topic before and after the intervention. The video class presents the definition of UI, clinical manifestations, complications, risk and prevention factors, assessment, diagnosis, self-care, forms of treatments and how to practice pelvic floor muscle exercises at home[13].

The other study that used video lessons using a tablet as an intervention strategy was carried out in the United States of America (USA) with a sample of 207 participants, with caregivers of incontinent elderly as target audience. The feasibility of developing and implementing interventions for UI for informal caregivers through portable technologies was found[15]. It is reinforced that the technologies can be used both for people who have incontinence and for family members / caregivers of individuals with this condition.

And one study used the mobile app as a method to promote adherence to pelvic floor muscle training and UI prevention, targeting postpartum women as a target population. The study validated the instrument with an expert and target audience, obtaining a minimum of 94.3% of positive responses[14].

Knowledge, adherence and effect of using health technologies for the treatment of urinary incontinence

The results of the studies directed towards the adherence and effect of the technologies and satisfactory results were obtained in all the studies, regardless of the chosen strategy, favoring the learning and improvement of the clinical picture related to UI.

The study dealing with the use of multimedia showed satisfactory results, showing that about 50% of the participants indicated an improvement in their condition, with a decrease in the severity of urinary loss and an improvement in quality of life, and demonstrated gains in secondary prevention for UI, at least in short term[11], since in the long term it has not been evaluated.

The use of the book/leaflet as a strategy has been shown to be effective in disseminating knowledge on the subject, encouraging self-management and can provide benefits to meet growing demands and optimize health resources. It is important to emphasize that the technology was well received by the general public and by a specific group and were

considered useful and efficient in the dissemination of knowledge and to facilitate self-management, however it was shown that knowledge, by itself, does not guarantee the behavioral change that favor the prevention and treatment of UI[12].

The technology in the video class format employed in women with and without UI has resulted in improved knowledge and awareness about UI, and can reach large and heterogeneous groups, including people with poor health care conditions. The study also demonstrated that most women are unaware of or have inadequate knowledge about UI and its interventions and that the approach significantly increased women's short-term knowledge about the topic[13].

The video class aimed at family/informal caregivers, regarding the technology used, demonstrates the feasibility of implementing technologies in the intervention for UI. Caregivers rated the intervention as effective, with improvements in care recipient urine leakage, access to a beneficial UI specialist, and would recommend it to a friend. Although the study suggests improvements with the use of more rigorous design and a larger sample to establish efficacy, the results indicate that the use of technology can also be an important option for improving access to health insurances and clinical experts[15].

As for the use of mobile apps, the study obtained a significant number of positive responses in the items evaluated, being considered an educational technology for the promotion and adherence to pelvic floor muscle training and prevention of UI in postpartum women, which was its target audience[14], however, no studies have been performed to assess the effect.

DISCUSSION

Development of health technologies for the treatment of urinary incontinence

Health technologies are characterized as any interventions that can be applied to promote health, prevent, diagnose or treat diseases, for rehabilitation, long-term care or even that are intended to organize the provision of health care and have been widely used as educational strategies to assist the development of activities[16].

Considering that UI is an alteration that presents a favorable prognosis with the use of behavioral measures, the use of technologies and self-management techniques is considered an essential component for the coverage of care for incontinent people[14], favoring learning and behavior change.

When analyzing the studies, even with a small number of publications, it can be seen that the five articles represented in this study used one or more health technologies, in a diversified way, for specific populations in the care of people with UI[11-15]. It is observed that the technologies, even targeted, are likely to be used by the general public.

The multimedia course format favors the approach of the chosen audience, this strategy simultaneously uses different means of communication in the quest to encompass the diversity of the group and capture their attention[11]. This approach expands the options and can favor adherence, and at least knowledge on the topic, which can be treated very positively, since for the problem to be understood, the UI needs to be understood as something not physiological.

The study with the use of videos, as well as books/booklets also reinforce the importance of using diversified resources and solutions to be used to guide and educate the population, especially in an environment with few resources and limited number of health professionals, collaborating with access to individual health care[13].

There are several methods used to promote health education. A study on the production of educational content corroborates the studies presented when it states that one of the biggest challenges to producing educational content does not depend on the format used, but on the definition of the use of language and communication channels and their association[16].

Currently, several methodologies have been designed to support the treatment of UI, in particular mobile applications, and it is believed that they can increase adherence to treatment and counseling, and may, among the benefits, reduce costs[17]. Digital technology and the internet are a reality in our days and have become increasingly accessible to all niches of the population, favoring the use of applications, making this strategy a viable and feasible option.

Thus, it is opportune to confirm the importance of using technologies and that they can be diversified to provide opportunities for the population to expand their knowledge with access to information and interventions that help in conducting care for UI.

Knowledge, adherence and effect of using health technologies for the treatment of urinary incontinence

Health technologies are considered an efficient method for the dissemination of knowledge, prevention and conservative treatment of UI. A study explains that its effectiveness and adherence vary from 18% to 95%, being one of the main problems in the treatment of UI[18]. There is a high variation regarding adherence and consequent effectiveness of the treatment, and this is due to multifactorial, multidimensional and individual issues.

This reality corroborates a study on treatment adherence, which states the existence of several factors that influence treatment adherence and may be related to the patient, the disease, health beliefs, lifestyle and cultural habits, treatment, quality of life , the institution and the relationship with the health staff[19].

Thus, the use of a certain methodology is not a guarantee of efficiency and adherence, since it depends on the particular interest, impact and representation that incontinence has on the person's life and the effect directly depends on the level of awareness for the adherence of existing guidelines in the material.

All studies showed a positive impact on the use of educational materials for the prevention and treatment of UI, however it was not possible to measure which was the most effective, not even in those with the same technology, since the target audience was different, among other aspects. . For this it would be necessary to carry out experimental and comparative studies, and no studies with this proposal were found.

However, studies have shown that the use of health technologies, in the form of educational technologies, facilitates public access to the material, helps to hold the attention of participants, expands the acquisition of knowledge and promotes treatment adherence, bringing positive effects on the participants[6,11-14]. It also reinforces the importance of interactivity to hold the public 's attention, which increases their understanding, even in people with low education[11].

As a limitation of the study, the difficulty of locating articles in the databases can be highlighted, specifically on technologies used to promote health in people with UI, as well as having access to some of the articles in full.

CONCLUSION

The technologies used were diversified, with four intervention studies and one methodological, with a low level of evidence. Thus, it is imperative to carry out more robust research with greater scientific impact, such as randomized clinical trials, aiming to produce strong scientific evidence to support clinical practice.

The analysis of the studies showed that the educational technologies used for the prevention and treatment of UI contribute to the decision-making process, self-management of participants in relation to care related to UI, as well as to caregivers. Adherence and effect are directly proportional and depend on how the individual understands UI and the impact it brings on each person's life.

Research can improve knowledge of educational technologies aimed at UI and favor the increment of future research with the use of different technologies in the health education process in the context of UI.

In relation to this theme and bringing it to the scope of nursing, there is an expansion of studies related to the development and application of technologies aimed at teaching-learning, however they can still be considered incipient and require investments for a greater and more diversified production.

It is important to emphasize that just the development of technologies is not enough, training and dissemination are also necessary for their use and applicability, in order to modify the experienced reality.

AUTHORS' CONTRIBUTION

Conceptualization: Braga FCSAG, Costa AP and Neves NVP; **Methodology:** Braga FCSAG, Costa AP and Neves NVP; **Research:** Braga FCSAG, Costa AP and Neves NVP; **Writing – First version:** Braga FCSAG, Costa AP and Neves NVP; **Writing – Reviewing & Editing:** Braga FCSAG; **Acquisition of Funding:** Braga FCSAG, Costa AP, Neves NVP,

Silva GRF, Silva ARV and Jorge HMF. **Resources:** Braga FCSAG, Costa AP, Neves NVP, Silva GRF, Silva ARV and Jorge HMF. **Supervision:** Silva GRF, Silva ARV and Jorge HMF.

DATA AVAILABILITY STATEMENT

All dataset were generated or analyzed in the current study.

FUNDING

Not applicable.

REFERENCES

1. Brasil DMM, Nicolau AIO, Bilhar APM, Karbage SAL, Lucena SV, Carmo TF et al. Urinary incontinence and female sexual function: an integrative review of validated questionnaires. Acta Paul Enferm. 2018;31(5):558-63. http://doi.org/10.1590/1982-0194201800077

2. Abrams P, Andersson KE, Apostolidis A, Birder L, Bliss D, Brubaker L et al. 6th International Consultation on Incontinence. Recommendations of the International Scientific Committee: EVALUATION AND TREATMENT OF URINARY INCONTINENCE, PELVIC ORGAN PROLAPSE AND FAECAL INCONTINENCE. Neurourol Urodyn. 2018;37(7):2271-2. http://doi.org/10.1002/nau.23551

3. Mourão LF, Luz MHBA, Marques ADB, Benício CDAV, Nunes BMVT, Pereira AFM. Characterization and Risk Factors of Urinary Incontinence in Women Cared in a Gynecological Clinic. ESTIMA, Braz. J. Enterostomal Ther. 2017;15(2):82-91. http://doi.org/10.5327/Z1806-3144201700020004

4. Valença MP, Albuquerque AFLL, Rocha GMS, Aguiar APD. Nursing Care in Urinary Incontinence: a Study of Integrative Review. ESTIMA, Braz. J. Enterostomal Ther. 2016;14(1):43-9. http://doi.org/10.5327/Z1806-3144201600010007

5. Oliveira TDA. Prevalence of urinary incontinence complaints in users of a primary care service in the city of Fortaleza (CE) [dissertação]. Fortaleza (CE): Faculdade de Farmácia, Odontologia e Enfermagem, Universidade Federal do Ceará; 2017.

6. Bezerra KC, Vasconcelos Neto JA, Bezerra LRPS, Karbage SAL, Frota IPR, Vasconcelos CTM et al. Health promotion to patients with pelvic floor dysfunction: an integrative review. Open J Obstet Gynecol. 2015;5(1):155-62. http://doi.org/10.4236/ojog.2015.53021

7. Ministério da Saúde (BR). Secretaria de Ciência, Tecnologia e Insumos Estratégicos. Departamento de Ciência e Tecnologia. Política Nacional de Gestão de Tecnologias em Saúde; 2010. Available at: http://bvsms.saude.gov.br/bvs/publicacoes/politica_nacional_gestao_tecnologias_saude.pdf

8. Mendes KDS, Silveira RCCP, Galvão CM. Use of the bibliographic reference manager in the selection of primary studies in integrative reviews. Texto contexto-enferm. 2019;28:e20170204. http://doi.org/10.1590/1980-265x-tce-2017-0204

9. Tufanaru C. Systematic reviews of effectiveness. In: Aromataris E, Munn Z (Editors). Joanna Briggs Institute Reviewer's Manual. The Joanna Briggs Institute; 2017. Cap 3. Available at: https://reviewersmanual.joannabriggs.org

10. Oxford Centre for Evidence-based Medicine. 2009 [acesso em 20 jun 2020]. Available at: http://conitec.gov.br/images/Artigos_Publicacoes/Oxford-Centre-for-Evidence-Based-Medicine.pdf

11. Niewijk AH, Weijts WBM. Effects of a multi-media course on urinary incontinence. Patient Educ Couns. 197;30(1):95-103. http://doi.org/10.1016/s0738-3991(96)00961-5

12. Franzén K, Johansson J-E, Andersson G, Nilsson K. Urinary incontinence: Evaluation of an information campaign directed towards the general public. Scand J Urol Nephrol. 2008;42(6):534-8. http://doi.org/10.1080/00365590802229962

13. Seshan V, Muliira JK. Effect of a Video-Assisted Teaching Program for Kegel's Exercises on Women's Knowledge About Urinary Incontinence. J Wound Ostomy Continence Nurs. 2015;42(5):531-8. http://doi.org/10.1097/WON.0000000000000127

14. Saboia DM, Vasconcelos CTM, Oriá MOB, Bezerra KC, Vasconcelos Neto JA, Lopes MHBM. Continence App: Construction and validation of a mobile application for postnatal urinary incontinence prevention. Eur J Obstet Gynecol Reprod Biol. 2019;240:330-5. http://doi.org/10.1016/j.ejogrb.2019.07.026

15. Davis NJ, Clark PC, Johnson II TM, Wyman JF. Feasibility of Tele-Prompt: A tablet-based prompted voiding intervention to support informal caregivers of older adults with urinary incontinence. Geriatr Nurs. 2020;41(4):411-20. http://doi.org/10.1016/j.gerinurse.2020.01.002

16. Filatro A, Cairo S. Produção de conteúdos educacionais . São Paulo: Saraiva; 2015.

17. Santos ZMSA, Frota MA, Martins ABT. Tecnologias em saúde: da abordagem teórica a construção e aplicação no cenário do cuidado. Fortaleza: EdUECE [Internet]; 2016. Available at: http://www.uece.br/eduece/dmdocuments/Ebook%20-%20Tecnologia%20em%20Saude%20-%20EBOOK.pdf

18. Loohuis AMM, Wessels NJ, Jellema P, Vermeulen KM, Hove MCS, Gemert-Pijnen JEWC et al. The impact of a mobile application-based treatment for urinary incontinence in adult women: Design of a mixed-methods randomized controlled trial in a primary care setting. Neurourol Urodyn. 2018;37(7):2167-76. http://doi.org/10.1002/nau.23507

19. Gusmão JL, Mion Jr. D. Adesão ao tratamento – conceitos. Rev Bras Hipertens. 2006; [acesso em 21 out 2020]; 13(1):23-25. Available at: http://departamentos.cardiol.br/dha/revista/13-1/06-adesao-ao-tratamento.pdf