

Health Educational Interventions on BrCa Prevention in University Students: Literature Review

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Abstract

Breast Cancer (BrCa) is an uncontrolled and persistent cellular proliferation that arises in the lining cells of the ducts or lobes of the breast glandular tissue, and occurs mostly in women. The early prevention of BrCa in young populations, of both sexes, through educational health interventions, should be a priority, as it is a low-cost method that allows broad access. The university environment is an ideal place to provide this type of training. The present work shows the educational interventions in BrCa with a preventive nature carried out with university students. To this end, an integrative review of the articles published in the period 2018 to 2023 was carried out, in English, Spanish and Portuguese, and including both the female and male gender, in the following databases: PubMed, JENE, Scielo, EBSCO and in the Google academic search engine. The key words were used: breast cancer, educational interventions and universities; selecting a total of 10 items. Health education is shown as an important tool that is increasingly strengthened, as a method to transmit and solidify knowledge of promotion and prevention; however, it is necessary to strengthen interventions, clarifying their theoretical-methodological foundations and promoting development. of practical skills, through active methods. The findings confirm the importance of these interventions and outline the gaps in them, as paths to follow in order to prevent this pathology that is among the main causes of death, especially in women.

Keywords: educational interventions; breast cancer; university students

Introduction

BrCa is a cellular proliferation that arises in an uncontrolled and persistent manner in the lining cells of the ducts or lobes of the breast glandular tissue [1], it is the neoplasm that most frequently affects women in general. It is added that women have suffered from this pathology at an early age and have been diagnosed later in developing and underdeveloped countries [2]. Health educational interventions are effective and low-cost strategies that may be interesting for the prevention of BrCa from an early age.

The university environment is an ideal place to provide this type of training, as has been found in this review.

The main trends found show the development of educational interventions on BrCa, which are fundamentally based on general knowledge about the

pathology, self-care, as well as the risk factors associated with it, especially those who have a modifiable character, such as: consumption of alcoholic beverages, inadequate nutrition, poor or no physical activity, smoking, and body weight. Agreeing that people who are overweight, and at the same time, are tobacco and alcohol consumers, lead a sedentary lifestyle or with low physical activity, have a greater predisposition for the development of BrCa. [3,4].

Another topic recurrently discussed in this literature review was breast self-examination. This is a procedure that is approached as a simple and widespread method for early diagnosis, whose purpose is to detect the greatest number of new cases in early studies, which allows the possibility

of starting less invasive treatments, increasing survival rates, and improves quality of life [4].

According to the study by Santibáñez Ramírez M, et al., it is highlighted that university students indicate that they have acquired knowledge about the BrCa clinical guideline; however, they face difficulties in identifying risk and protective factors and specific information related to the treatment. Therefore, it is imperative to strengthen education on the prevention of this disease within health study programs and promote health promotion. [5].

The American Cancer Society, according to Matos et al., maintains that there have been many studies that show deficiencies related to breast self-examination, either due to its non-performance, incorrect practice, or lack of knowledge associated with it. [6].

According to the article by Biswas S, et al., there is a serious lack of knowledge about BrCa among the high school and university students who were surveyed. This lack extends to the main risk factors, but, fundamentally, to the knowledge and practice of breast self-examination, reaching very low levels.

These levels are represented by the responses collected by the students where they express that they do not know the techniques, frequencies and the precise moment to perform it, as well as the positions and structures that are examined in breast self-examination, they also do not know what is looked for in the breasts with the palpation technique [7].

Another study shows that, although the majority of participants were aware of BrCa, knowledge about risk factors and warning signs and symptoms was relatively scarce. Knowledge about performing breast self-examination was especially scarce. Highlighting the importance of increasing awareness about BrCa, especially in university contexts [8]. According to the research of Irfan R, et al., the majority of university students had knowledge and awareness about BrCa, its risk factors, diagnostic parameters and possible treatment options, but they did not have knowledge about the self-examination procedures of breasts [2]. Ose-Afryie S, et al., in their study, moderate knowledge was evident among students about the modalities for detecting BrCa and the risk

factors associated with carcinoma; however, a gap was identified between this knowledge and the effective application of timely disease detection practices. This discrepancy is influenced by optimism in the perception of the risk of BrCa and religious influence [9]. It is imperative to strengthen knowledge through educational interventions, highlighting the need to intensify awareness and education campaigns at the University to close this gap.

In this regard, it is important to highlight that Figueroa et al. consider that educational interventions are carried out not only in order to obtain information, but that their purpose is to intensify the need for breast self-examination as a method of health promotion and as a primary prevention method for breast cancer, guarantee this practice as one of the primary ones of primary health care [10]. These are some evidences that lead us to ask ourselves: What are the main trends in the approach to health educational interventions carried out in university contexts, associated with BrCa, that emerge in current scientific productions? with the purpose of identifying in scientific publications, the trends in the development of educational interventions that, on BrCa, have been carried out in university contexts.

Method

The search focuses on scientific articles indexed in the databases PubMed (6 articles), JENE (1 article), Scielo (1 article), EBSCO (0 zero articles) and in the Google academic search engine (2 articles).

The inclusion criteria were taken that the articles were published in English, Spanish and Portuguese, that they responded to quantitative studies, and that they were complete texts, published in the period from 2018 to 2023. The following were used as keywords for the search: breast cancer, educational and university interventions; all focused on primary health care, with a preventive nature, including female and male university students.

During the period of 2022 and part of 2023, the scientific literature was exhaustively searched for articles that described educational interventions in BrCa, in university students, finding 793 articles; leaving 10 articles to analyze (See figure 1. Flowchart).

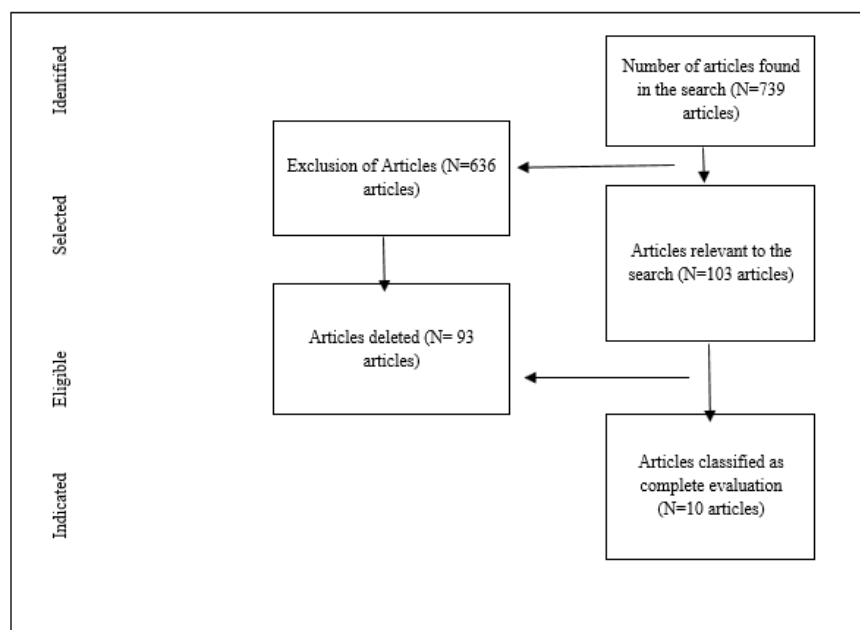


Figure 1: Flowchart. Educational Interventions in BrCa in University Students

Results

In the present literature review, in the initial search, 739 articles were found distributed in 5 databases: PubMed, JENE, Scielo, EBSCO and in the Google academic search engine, of which 636 were discarded because they were not related to the point. Of interest to the research, when deepening the search, of the remaining 103 articles, 93 were purified, they were discarded for multiple reasons: they showed incomplete or confusing data with their population, they did not define the type of study and interventions carried out. When compared with the defined inclusion criteria, 10 articles remained that met the objectives and parameters of the review; six articles from PubMed, one from JENE, one from Scielo, in

EBSCO until moment zero and two in the Google academic search engine. Of the 10 articles selected in the search, these correspond to interventions carried out on students, mainly in the health area, including mostly medical students.

In the articles found, quasi-experimental research predominates, Interventions of knowledge, attitudes and practices measurable with pre-test and o-test are used. It is found that the interventions are mostly prevention, in terms of awareness and knowledge about self-exploration, interventions aimed at only practice were found 2, interventions only directed at knowledge were 6, mixed interventions or interventions directed at practices and knowledge are described [2]

Articles reviewed on educational interventions in BrCa in university students

No	Reference	Database	Qualification	Aim	Type of study	Sampling	Study population	Number of sessions	Duration of sessions	Type of sessions
1	Abo S, Ibrahim M, Alejerami Y (2021).	PubMed	Breast Cancer Knowledge and Practice of Breast Self-Examination among Female University Students, Gaza.	To assess the level of knowledge and practice of BSE among female students of the Faculty of Applied Medical Sciences (AMS), Al-Azhar University, Gaza, Palestine.	Quasi-Experimental	Does not refer.	86 students	It does not refer to the number of sessions.	It does not mention the duration of the sessions	Educational Sessions. Practice with the breast self-examination model to control dressing-type breast tumor [11]
2	Wondmu K, Tessema M, Degu G, Mihiret G, Sinshaw M (2022).	PubMed	Effect of breast cancer education based on the health belief model on knowledge, health belief, and breast self-examination among female students of Debre Markos University, Northwest Ethiopia, in 2021.	To evaluate the effect of breast cancer education based on the health belief model on breast knowledge, health beliefs, and self-examination among female students at Debre Markos University, Ethiopia, in 2021.	Quasi-Experimental	Simple random	210 participants	It does not refer to the number of sessions.	1 hour per session	Educational sessions. Self-exploration practice. [12].

3	Rehman H, Jawaid H, Tahir A, Imtiaz M, Zulfiqar T, Aziz T (2022).	PubMed	Breast cancer knowledge among health professionals: A pre-post-knowledge-based intervention study	To determine the importance of educational sessions to improve healthcare professionals' knowledge of breast cancer, particularly screening modalities that may benefit patients.	Quasi-Experimental	Not available	126 final year medical students.	Two sessions: An awareness session. A BrCa educational session.	Does not refer to session time	Awareness and educational sessions [13].
4	Ranganath R, Muthusami J, Simon M, Mandal T, Kukkamulla M (2020).	PubMed	Female medical and nursing students' knowledge, attitudes, and skills regarding breast self-examination in Oman: a comparison between pre- and post-training.	To assess the levels of knowledge and awareness about breast cancer and breast self-examination among medical and nursing students in Oman and compare their knowledge, attitudes and skills after a training programme.	Quasi-Experimental, two groups.	Paired sample	90 medical students and 80 nursing students.	Two educational sessions and one practical session.	1 hour educational sessions. 45 min practical session.	Educational and practical. BrCa awareness workshop. Informative workshop and activities [14].
5	Mäurer M, Drozd S, Ehrenpfordt J, Schwedas M, Friedlein M, Hille N, et al (2023).	PubMed	Development, implementation, and results of a simulation-based hands-on brachytherapy workshop for medical students.	To evaluate whether simulation-based practical medical education to teach competence in performing breast irradiation for early breast cancer is useful in medical students.	Quasi-Experimental.	Not available	70 medical students.	A practical theoretical session about brachytherapy [15].	theoretical 30 min. 60 min practice.	Theoretical-practical.
6	Kissal A, Kartal B (2019).	PubMed	Effects of Health Belief Model-Based Education on Health Beliefs and Breast Self-	To investigate the effect of an educational program based on the health belief model (HBM) on	Quasi-Experimental.	Not available	48 nursing students.	3 sessions at start. With follow-up at 6 months and at 1 year.	1 hour 45 min per session.	Educational. Breast Cancer Education Program [16].

			Examination in Nursing Students.	nursing students' health beliefs and their breast self-examination (BSE) practices.						
7	Sarker R, Islam M, Moonajilin M, Rahman M, Gesesew H, Ward P (2022) .	JENE	Effectiveness of educational intervention on breast cancer knowledge and breast self-examination among female university students in Bangladesh: a pre-post quasi-experimental study.	To evaluate the effect of an educational intervention program on the knowledge of breast cancer and the practice of breast self-examination among young students at a university in Bangladesh.	Quasi-Experimental	Not available	400 university students from 18 to 26 years old.	It does not refer to the number of sessions.	45-60 minutes per session.	Educational. Educational information about BrCa and breast self-examination (BSE) [17].
8	Díaz S, Wiesner C, Perry F, Poveda C, Carvajal A, Bermúdez J, et al. (2019).	SHeaven	Education in Colombia for the early detection of breast cancer.	Describe the process carried out by the National Cancer Institute of Colombia, to train health professionals (general practitioners, gynecologists, family doctors and nurses) in the early detection of breast cancer, through in-person and virtual courses.	Not available.	Not available	137 medical students.	Two courses which include three phases. The theoretical phase. The second phase included practice. The third phase included the approach with real patients.	It does not mention the time of each phase.	Educational and Practical. Early detection of breast cancer [18].
9	Figueroa M, Vega G, Hernández R (2020).	Academic google	Teaching strategies for self-care of breast health in young university students	Describe which of the three didactic teaching strategies has the greatest positive impact on knowledge and prevention practices for breast cancer	Quasi-Experimental	Non-probabilistic for convenience	760 students.	Three sessions where each group had only one of the following sessions: 1. A session with the alternative strategy	1. The session with alternative strategy had a 4-hour workshop. 2. The session with peer tutoring had a 2-hour workshop.	Educational and practical. Comparison between the three didactic teaching strategies all aimed at BrCa [19].

				in university students.				2.A session with peer tutoring 3.A session with the traditional strategy	3. The sessions with traditional strategy had a 2-hour workshop.	
10	Almomani M, Rababa M, Alzoubi F, Alnuaimi K, Alnatour A, Ali R (2020).	Academic google.	Effects of a health education intervention on knowledge and attitudes toward chronic noncommunicable diseases among university students in Jordan.	To evaluate the effect of a health promotion course on knowledge and attitudes towards chronic non-communicable diseases (NCDs) among undergraduate students at a Jordanian university. About BrCa improves knowledge, attitudes and practices.	Quasi-Experimental.	Not available	178 students completed the course.	A session on health promotion [20].	3 hours.	Educational.

Regarding the knowledge that the studies most address, risk factors, general knowledge and breast self-examination stand out; The techniques mainly focus on breast self-examination and one stands out for being aimed at timely detection through clinical intervention totally aimed at doctors [11-20].

Regarding the location situation, it was found that 5 articles were found on the continent of Africa, distributed between the center and north of it, three are directed to southern Asia, two on the American continent and one located in the center of Europe. All of these published in a period 2018-2023.

It can be seen that the populations covered by the articles almost entirely (9 articles) are aimed at students only; and a minority (1 article) is aimed at health professionals, including students in their final years of undergraduate studies. One of the articles includes only women while 9 admits women and men, the remaining article does not refer to the sex of the participants. Of interest is the theoretical basis in the belief model which, although stated in two of the articles reviewed, is a valuable attempt to guide the references of the interventions. This, in turn, shows a gap in the approach to interventions that is identified as a possible line of development.

Discussion

In the studies found, many topics of awareness, general education about BrCa and self-care behaviors are taken up, highlighting the work of health education as a prevention tool [11,12,14,17,19,20].

Hernández J et al., in this sense, highlights as an interesting alternative the integration of health education with the use of ICTs (Information and communication technologies), as an alternative to overcome socio-demographic barriers and extend its impact to a population. broader, in which young people occupy an important place, given the use that these resources usually make today. With this, the benefits of promotion and prevention are expanded, contributing to improving the user's health and the way of transmitting that education [21].

The interventions that were developed were mainly linked to the students' general and self-care knowledge regarding the problem, knowledge of risk factors for BrCa [11, 13], and the practice of breast self-examination [13, 17, 18]. Practical interventions such as the use of breast models 1 for interaction in the first instance and the use of medical simulations 5 were also included.

Among the articles reviewed by Abo S. et al., during their research they come to the conclusion that university students have good knowledge about risk factors [11], contrary to what Almomani M et al. mentions, who mentions that It is the point where the student lacks the most knowledge [20], it is worth mentioning that the two investigations were carried out within the territory of North Africa.

Delgado N, et al., agree with Almomani et al., referring to the fact that university students have difficulties recognizing risk factors associated with BrCa. It is observed, in this sense, that the risk factors for the acquisition of BrCa that were least known by the students were: drinking alcohol, being over 45 years old, menarche before the age of 12 and menopause after the age of 55 in women. However, they mention that these comparative differences in the level of knowledge about risk factors

for the preventive approach to BrCa in university students may depend on the health education provided in universities [22].

In the research of Wondmu K and Abo S et al., they came to the deduction that university students do not perform breast self-examination, because despite mentioning that they have good knowledge on the subject of BrCa, more than half They report not having a culture of self-exploration [11,12]. The above is also demonstrated by Mehiret G. et. al., who comments in their research that a third of students perform breast self-examination and that knowledge is closely related to the continuous practice of this, refer to the fact that the more knowledge students have on the subject, the more willing they are to perform breast self-examination. show for addressing timely detection practices, since around half of the respondents agree that they do not perform self-examination mainly due to lack of knowledge [23].

Mäurer M et al., refers to the use of simulators to learn to timely detect BrCa, therefore they demonstrate that the use of models dedicated solely to breast assessment are necessary for the student's practice, as evidence of this, in their research they mention that their knowledge based on practice increase significantly with the use of specific material for practices [15]. Kissal A and Kartal B, support the use of educational material to improve knowledge and practices of breast self-examination, as far as their research is concerned, they demonstrate that the group of students who were intervened with educational videos improved their prevention habits. compared to those who did not visualize it [16]. Xu Q et. all., in their research show that watching short videos can significantly increase viewers' knowledge of health topics related to BrCa. Using an interpreter in a doctor's uniform instead of casual clothing can significantly improve the efficiency of knowledge acquisition. People who adopt health topics from this type of videos tend to communicate the information with greater satisfaction to third parties [23-25].

Conclusions

In the review carried out, we can conclude that the main trends identified in the development of educational interventions on breast cancer that have been carried out in university contexts, in the last five years, are fundamentally outlined in the expansion of knowledge and, to a lesser extent, those that enhance the development of practical skills. This aspect is shown as a possibility to deepen in future studies.

Universities can be, in this sense, favorable contexts to promote prevention actions through the development of educational interventions. However, universities in the health area have been prioritized in the studies, so the extension to other university contexts is a point of reflection that must be valued for the development of interventions for these purposes. At the same time, it is interesting and recommended, based on the results shown, the use of practical, participatory and active strategies to develop not only knowledge, but also skills that favor prevention actions.

Working with risk factors, their identification, and the development of strategies for their eradication is a difficulty that is shown in the results of the studies investigated.

Another important aspect derived from the review leads us to pay special attention to the theoretical foundations that support the interventions, from education, as well as the methodological strategies that, as a consequence, are derived from these choices.

Finally, due to the importance of educational interventions in BrCa, as preventive strategies that contribute to raising health indices, their increasing development is necessary, which also implies not only their application at a certain moment, but their monitoring over time, to truly evaluate its impact.

Interest conflict

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