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The Impact of Educational Nursing Program on Quality of Sexual Life, Body Image, and Self-esteem among Women with Breast Cancer

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ABSTRACT

Background: Despite recent significant advances in the early diagnosis and treatment of breast cancer, it remains a severe threat to physical, psychological and social health of women and the femininity. Objectives: To investigate the impact of educational nursing programs on the quality of sexual life, body image, and self-esteem among women with breast cancer. **Methods:** A quasi-experimental research design (one group only) was utilized in this study. The study was conducted at the oncology outpatient clinic at General Teaching Hospital Organization (El-Galaa Hospital). A purposive sample of forty women with breast cancer were chosen. Four tools were used: 1) structured interviewing questionnaire, 2) the Hopwood Body Image Scale, 3) the Rosenberg Self-esteem Scale, and 4) the Modified WHO Quality of Sexual Life Scale. **Results:** A positive and statistically significant correlation between the quality of sexual life, body image, and self-esteem pre and post the implementation of the educational program. Conclusion: The study findings concluded that the educational program intervention positively influenced the quality of sexual life, body image, and self-esteem in women with breast cancer. **Recommendation:** Counseling intervention program for women with breast cancer to improve coping mechanisms, body image, self-esteem, and sexual life quality was suggested.

Keywords: Breast Cancer; Body Image; Self-esteem; Quality of Sexual Life

INTRODUCTION

Breast Cancer (B.C.) is a prevalent malignancy in human and is the most frequently diagnosed cancer in women. Its rising incidence has become a significant public health issue today. Research on breast cancer holds crucial practical implications for women's health and well-being (Lin *et al*., 2023). In 2020, female breast cancer overtook lung cancer as the most common cancer globally, with approximately 2.3 million new cases, making up 11.7% of all cancer cases. It is the fifth leading cause of cancer-related deaths worldwide, with 685,000 fatalities (Sung *et al*., 2021). This biennial update from the American Cancer Society presents statistics on breast cancer among women, utilizing high-quality data on incidence and mortality from the National Cancer Institute and the Centers for Disease Control and Prevention. Between 2012 and 2021, breast cancer incidence increased by 1% annually, primarily driven by cases in the localized stage and hormone receptor-positive disease (Giaquinto *et al*., 2024).

Breast cancer originates in the epithelial lining of the ducts (85%) or lobules (15%) of the glandular tissue. The malignant growth is initially confined to the duct or lobule (in situ), often without symptoms and with a low

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risk of metastasis. Early detection significantly improves the success of breast cancer treatment (Brajković *et al.*, 2024). The treatment typically involves a combination of surgical removal, radiation therapy, and medication. Historically, all breast cancers were treated surgically with a mastectomy. However, most breast cancers today can be treated with a less extensive procedure called a "lumpectomy" or partial mastectomy, where only the tumour is removed. In such cases, radiation therapy to the breast is generally required to reduce the risk of recurrence (Al-Sharman *et al*., 2024).

Breast cancer in women: poor body image and sense of self-worth are linked. In breast cancer survivors, a negative body image includes feelings of dissatisfaction with the appearance, a sense of losing femininity and physical integrity, aversion to seeing themselves naked in mirrors, feelings of unattractiveness to men, feelings of insecurity about looks and dissatisfaction with surgical wounds (Yehia, *et al*., 2022).

Sexuality represents one of the main aspects of the relationship between wife and husband. It also significantly affects how the mastectomy modifies one's quality of life (QoL). Sexuality, which includes sex, gender, sexual and gender identity, sexual orientation, emotional attachment/love, and reproduction, is an essential feature of being human. Sexuality encompasses more than just the ability to participate in sexual activities or conceive children; in addition, it encompasses ideas, expectations, aspirations, convictions, dispositions, principles, roles, and connections. Therefore, BC diagnosis and treatment can lead to psychological and sexual issues (King *et al*., 2020).

Women require guidance both before and after a mastectomy, including support in accepting the treatment procedures and adjusting to new circumstances. Consequently, nurses should address and support women in psychological, family, social, and sexual aspects following the surgery. It is crucial to consider the impact of the surgical procedure on women's psychological well-being, especially given the high prevalence of BC and surgical removal of the breast (Savani *et al*., 2023).

Self-esteem refers to a person's overall feeling of self-worth and value. It's the way a person views and accepts themselves, regardless of the challenges they may face. Self-esteem is influenced by various factors, such as confidence in one's abilities, feeling safe and secure, a sense of belonging, and a sense of competence. Women who undergo mastectomy due to breast cancer often experience significant changes in their roles and responsibilities at home and in their professional lives. This can lead to relationship issues, including relationship breakdowns and changes in intimacy. They may also struggle with feelings of dependency, which can negatively impact their self-esteem and marital status. The physical changes resulting from the surgery, such as changes in appearance, can lead to a loss of self-perception and self-esteem, as they may feel unattractive and lack confidence in their appearance. This can, in turn, affect their sense of sexuality and their ability to be open and intimate with their partner (Yehia, *et al*., 2022).

Interventions that address the women's psychological and informational needs, encourage emotional expression, and improve coping mechanisms are essential for a first-rate educational program. Therapeutic communication is one type of educational intervention that has been successfully used to cure depression, lower stress levels, improve quality of life, and assist women with cancer during diagnosis and recovery. Interventions are designed and implemented to help women achieve specific goals based on the developmental and cultural needs. Continuous assessment is also required to ensure she receives timely and effective nursing care (Li *et al.*, 2024).

Significance of the Study

Breast cancer is a global health issue that affects women of all ages, from puberty onwards, in every country worldwide. However, the incidence of breast cancer tends to increase with age, particularly in later life. In Egypt, breast cancer is the most prevalent type of cancer among women, making up approximately 38.8% of all female cancer cases. According to estimates, there were nearly 22,700 cases of breast cancer in 2020, and this number is expected to rise to around 46,000 by 2050. Additionally, ranking it as the second leading cause of cancer mortality, after liver cancer. The increasing incidence of breast cancer and associated detrimental effects, including the challenges associated with treatment affecting not only physical health but also psychological, social, and emotional aspects of women's lives, underscore the importance of this study. It aims to examine the quality of sexual life in affected women and develop an effective nursing educational program.

This program would focus on enhancing sexual well-being, improving self-esteem, and helping women first address body image issues before learning to manage the relationships, especially with husbands.

Aim of the Study

To investigate the impact of educational nursing program on quality of sexual life, body image, and self-esteem among women with breast cancer.

Research Hypotheses

H1 Women with breast cancer who will participate in an educational program will have higher post-test score regarding the quality of sexual life.

H2 Women with breast cancer who participate in an educational program will have post-test significant improvement in their body image score than pretest.

H3 Women with breast cancer who participate in an educational program will have higher post-test significant improvement in self-esteem score than pretest.

METHODOLOGY

Study Design

A quasi-experimental design with a one-group (pretest and post-test) was used to achieve the aim of this study. For this process written approval to conduct the study was granted by the director of El-Galaa Hospital and the head nurse of the Medical Out-Patient Clinics. In addition, each breast cancer survivor participating in the study provided written informed consent. Prior to consenting, participants were thoroughly informed about the study's objectives and reassured about the confidentiality of their data and the safety of the procedures. Participants were also made aware of their right to withdraw from the study at any time without facing any penalties.

Study Setting

The research was carried out at the oncology outpatient clinic of a government hospital (El-Galaa Hospital) which is affiliated with the General Teaching Hospital Organisation & institutions. The hospital offers comprehensive inpatient and outpatient services. The oncology outpatient clinics are located on the second floor of the outpatient department. One room is designated for examining women, while the other is used for follow-up care, including patients receiving hormonal therapy, chemotherapy, and radiotherapy. Outpatient clinics are accessible four days per week, two days for diagnosis and two days for follow-up.

Sample

A purposive sample of 40 breast cancer women was selected and chosen based on specific inclusion and exclusion criteria.

Inclusion Criteria

Willingness to participate in the research

Fertile women between the ages of 18 and 40.

At least six months following breast cancer diagnosis.

Married with regular sexual relations.

Exclusion Criteria

Women who undergo additional distortion-causing surgeries.

Severe mental illness.

Missing two instructional program sessions.

Tools of Data Collection

Four tools were used for data collection.

Tool 1: A Structured Interviewing Questionnaire

The researcher created this tool in Arabic and reviewed by an expert. It consists of two parts. First part included data related to demographic characteristics as women age, level of education, occupation etc. The Second part included data related to medical history such as duration of diagnosis, stage of breast cancer, types of treatment etc.

Tools 2: Body Image Scale (BIS)

The researcher used a modified scale, originally developed by Koleck in 2002, to assess women's perceptions of their bodies and how breast cancer affects their body image. The scale consists of 16 items, with 10 original items and 6 additional items added by the researcher. The items are scored on a Likert-type scale. The higher scores indicate poorer body image. The scale categorises body image as follows: scores of 54 or higher indicate poor body image, scores of 49-53 indicate average body image, and scores of 38-48 indicate good body image.

Tool 3: Self-Esteem Scale

This scale was created in 1965 by Rosenberg and updated in 2009 by Hatcher to measure women with breast cancer sense of self. There are ten items in all, 5 having negative features and five having good ones. Reactions are recorded using a Likert-type scale. A Likert-type scale with a range of 1 (not at all) to 4 (strongly agree) is used to record responses. The maximum score was (40) and minimum (10).

Tool 4: Quality of Sexual Life Scale

This scale consists of twenty-seven questions broken down into 4 categories: environment, interpersonal connections, psychology, and physical health. Likert-type scales were used to record the responses. The responses are made on a Likert -type scale. Response was as: (5) strongly satisfied, (4) satisfied, (3) sometimes satisfied, (2) dissatisfied and (1) strongly dissatisfied. The lowest score was 27, and the highest was 135.

Pilot Study

A pilot study was conducted on 10% (4) of the participants to evaluate the usability and clarity of the study tools before initiating the fieldwork and estimate the time required to complete each tool. The pilot data revealed that each breast cancer participant needed fifteen to twenty minutes to complete the study tools, with no changes needed. So, the participants in the pilot study were included in the main study sample.

Validity of the Tools

Five experts, comprising two psychiatrists, a professor of medical oncology, and two professors of obstetrics and gynaecological nursing, reviewed the tool's content to ensure that it was easy to use, comprehensive, relevant, and applicable.

Reliability of the Tools

The tool's Arabic version was tested on forty post-breast cancer women to determine its reliability. The researcher conducted a test-retest-reliability coefficient on patients with a fourteen-day time interval in the same circumstances. Its value for the 16 items was (0.93) which indicated that the Arabic version of the Body Image Scale demonstrated excellent scale reliability and its value for 10 items (Self-Esteem Scale) was (r = 0.9). The reliability of the tool (Quality of Sexual Life) was assessed through measuring their internal consistency by determining the Cronbach alpha coefficient.

Procedure

The data was collected over twenty-four weeks, starting August 2023 and ending January 2024. Four phases were involved in the study's execution as follows:

Preparation Phase

After obtaining the required clearances, the researcher started the preparatory phase. Before the intended program's implementation, each participant was interviewed individually for fifteen to twenty minutes at the oncology outpatient clinic. The phase took one month to complete.

Planning Phase

Through teaching effective coping mechanisms and problem-solving techniques, subjects can deal mentally and emotionally with the daily stressors brought on by the removal of their breast. The sample was divided into four subgroups, each with ten women. Each subgroup attended ten sessions, two weekly sessions for five weeks, each lasting between sixty and ninety minutes.

Implementation Phase

The researcher developed the program's objectives and content in ten-, sixty-, and ninety-minute sessions, employing various teaching techniques and aids.

The general objective of the program is to enhance BC women's awareness and skills regarding body image, self-esteem, and quality of sexual life.

Specific Objectives

Upon completing the educational nursing program, every woman with breast cancer can learn about breast cancer, practice problem-solving techniques, enhance their body image, boost their self-confidence, and improve their quality of sexual life.

The Sessions were as Follow

Introductory section outlining the program's goals and overview of breast cancer, including the stages of therapy and practical advice on honing problem-solving and decision-making abilities.

Identify the concept of body image-associated signs and symptoms of breast cancer, the practical part about transforming negative thoughts into good ones.

Discuss the necessary methods to cope with peer pressure, improve social interaction, and the practical part about promoting self-esteem.

Discuss methods of improving body image and practical positive self-talk.

Implement essential steps and guidelines needed for enhancing positive self-concept.

Apply the importance of social interaction and pragmatism to enhance body image.

Define sexual health. Identify methods to improve sexual life, helpful in acquiring proficient communication abilities with both one and others.

Identify negative emotions. Apply methods to control and manage negative feelings associated with breast cancer.

Appreciate the value of relaxation techniques in craving prevention and pragmatic regarding meditation and relaxation methods.

Acquire the necessary instructions for getting productive work, helpful information regarding stress reduction methods, and a post-assessment exam.

Evaluation Phase

Following the implementation of the session at the end of the 10th session, researchers used the same three instruments to reevaluate the women with breast cancer.

Statistical Analysis

After the data was collected, it was tabulated and examined using the appropriate statistical tests (version

20 SPSS). The data were displayed as frequencies and percentages using descriptive statistics in the form of frequencies and percentages. Chi-square tests were used to compare frequencies and correlation between study variables.

Ethical Consideration

The researchers obtained ethical clearance from the Research Ethics Board of Badr University in Cairo, Egypt-Institutional Ethical Committee with reference number BUC-IACUC-231217-48 on 17th December 2023.

RESULTS

The sociodemographic characteristics of the study sample showed that more than half of the respondents were between the ages of 41 and 50, and only 15% were between the ages of 18 and 30, with a mean age of 39.1± 4.9 years old more than two-thirds of the women with breast cancer. in the study were childless. Less than half of the study sample complete their secondary education and were working.

Table 1: Distribution of the Study Sample According to Clinical Characteristics (n=40)

Variables	No. 40	%
Time Spent Diagnosing		
Six months to less than a year	12	30
From 12 to 18 months	20	50
18 to 24 months	8	20
Mean ±SD =16.2±2.7		
Breast Cancer Stage		
First Stage	2	5
Second Stage	32	80
Third Stage	6	15
Managements		
Chemotherapy	18	45
Radiation therapy	6	15
Hormonal treatment	16	40
Removal of the Breast		
Radical breast removal	0	0
Adapted radical breast removal	18	45
Complete breast removal	22	55

Table 1 reveals that more than three-fourths (80%) of the women in the study had breast cancer that was in its second stage. Additionally, less than half of them is receiving chemotherapy, and Over 50% of the participants had a complete mastectomy.

Table 2: Distribution of the Study Sample According to Levels of Body Image Concerns before and after theProgram (n=40)

Levels of Breast Cancer Body Image Concerns Before and After the Program	Educational Nursing Program		*t*-test	*P* value
	Before	After		
	Mean + SD			
Poor concerns of body image	33.31±0.1	17.87±0.34	22.4	<0.001**
Average concerns of body image	28.60±11.27	38.60±11.27	25.8	<0.001**
Good concerns of body image	34.25±4.77	44.25±4.77	29.8	<0.001**

** *Highly statistically significant*

Table 2 indicates that all body-image scores among the examined individuals have improved statistically significantly following the educational nursing intervention.

Table 3: Levels of Self-Esteem of Subjects Pre and after the Implementation Program (n=40)

Level of Breast Cancer Women Self-Esteem	Educational Program				X^2	*P* value (N=40)
	Before		After			
	No.	%	No.	%		
Poor self-esteem	18	45	3	7.5	22.5	<0.001**
Average self-esteem	10	25	12	30	27.4	<0.001**
Good self-esteem	12	30	25	62.5	26.2	<0.001**

** *Highly statistically significant*

Table 3 demonstrated that there is a highly statistically significantly difference in self-esteem levels among women with breast cancer before and after the program implementation, with a marked increase in self-esteem following the program ($p < 0.001$**).

Table 4: Comparison of the Sample Overall Mean Scores in Areas of Sexual Well-Being before and after Implementing the Program (n=40)

Areas of Sexual Well-Being	Educational Nursing Program		*t*-test	*P* value (N=40)
	Before	After		
	Mean + SD	Mean + SD		
Physical health	31.4±6.2	36.23±6.9	23.5	0.001**
Mental health	27.15 ±6.32	38.26 ±7.2	25.8	0.001**
Interpersonal relationship	28.43±4.92	32.17±6.54	21.7	0.001**
Surrounding environment	27.81±4.76	31.54±6.23	23.3	0.001**

** *Highly statistically significant*

Table 4 demonstrates that the quality of sexual life domains differs significantly ($p<0.001$) between women with B.C. before and after the end of the program. The psychological domain had the highest mean among the women under study, with the physical, environmental, and social connection domains following closely behind.

Table 5: Relation between the Pre-and Post-Program Body Image of Women with Breast Cancer and Their Demographic Characteristics (n=40)

Degrees of sexual well-being	Educational Program		*t*-test	*P* value (N=40)
	Before the Program	Following The Program		
	Mean ± SD			
Poor quality of sexual life	40.8±0.9	19.99±0.9	15.8	<0.001**
Average quality of sexual life	28.63 ±2.45	17.33 ±4.2	12.9	<0.001**
Good quality of sexual life	15.34±4.22	31.67±7.15	17.4	<0.001**

** *Highly statistically significant*

Table 5 shows that the quality of the study sample sexual lives greatly improved after the program was implemented, with a high statistical difference in the two periods.

Table 6: Relations between the Individuals' Body Image and Self-esteem, before and after the Program (n=40)

Items	Overall Sexual Well-Being			*P*- value (N=40)
	Pre-program	*P*- value	Post-program	
Overall self-esteem	*r* =0.154	0.05	*r* =0. 362	0.001
Overall perception of one's body	*r* =0.190	0.05	*r* =0.247	0.001

Table 6 shows that the quality of the subjects' self-esteem, and their body image perception before and after program implementation are positively correlated and statistically significant (p<0.001).

DISCUSSION

The result of this study will be discussed in the frame of reference of the following hypotheses: H1 Women with breast cancer who will follow an educational program will have a higher post-test score regarding sexual life. H2 Women with breast cancer who follow an educational program will have a higher post-test significant improvement in body image score than pretest. H3 Women with breast cancer who follow an educational program will have higher post-test significant improvement in their self-esteem score than pretest. The study results support these hypotheses.

The current study findings on sociodemographic characteristics showed that the researched women's mean age was 39.1±4.9 years, with 60% of the respondents between the ages of 41 and 50 and 15% between the ages of 18 and 30. These findings suggest that most women have reached the end of their reproductive years. Hamd *et al*. (2019) observed that the age between forty and less than fifty years old is the most prevalent for mastectomy in Egypt.

More than two-thirds did not have children. The study sample who had given birth and had breastfeeding experience had fewer menstrual cycles, thus having a reduction of hormonal production that causes cancer. That could be the reason why having children typically lowers one's lifelong risk of BC. On the other hand, Maleki *et al*. (2021) found that almost two-thirds of the breast cancer study participants had one or two children.

The results revealed that most subjects under investigation had completed secondary school, one-third were literate and slightly less than one-quarter had completed higher education. The study's findings indicate that almost two-thirds of the participants had educational backgrounds, making it easy to accept and participate in the educational nursing intervention program. These results are consistent with those of Faghani & Ghaffari (2016), who discovered that fewer than 50% of the study sample in the BC study had a diploma, and under one quarter had advanced education. Of the study samples with breast cancer, more than three-quarters had jobs. This is consistent with the findings of Mohamed *et al*. (2017), who found that over one-third of post-mastectomies were housewives, and almost two-thirds were employed. On the other hand, Maleki *et al*. (2021) found that, two-thirds of the examined breast cancer women were housewives.

The study indicates that a year after receiving a breast cancer diagnosis, the study sample began to think about their sexual behaviour, self-worth, and body image. These results align with the study done by Faghani and Ghaffari (2016). On the other hand, Hamed *et al.* (2019) reported that women started to think about their sexual behaviour, self-worth, and body image from 1 to 5 years following a breast cancer diagnosis.

Regarding the surgical procedure, the findings showed that over half of the women underwent a total mastectomy, with over three-quarters of them having a positive family history and less than half undergoing chemotherapy. The current findings are in the same line with the findings of Maleki *et al*. (2021), who found that most women underwent a total mastectomy, were in the early stage (II), and had a family history of breast cancer.

Furthermore, depression, hopelessness, and anxiety are psychological symptoms experienced by nearly two-thirds of breast cancer patients. Less than one-third of the research participants who had breast cancer did not experience any psychological problems. The results of this study are in line with those of Hamed *et al.* (2019), who discovered that suicidal thoughts, social disengagement, negative self-esteem, feelings of guilt, worthlessness, and hopelessness can all be signs of depression.

The results of the study also showed that almost of breast cancer women experienced sexual complaints, such as vaginal dryness, pain during intercourse, and lack of desire for sexual activity. The diagnosis and treatment of BC, including hormonal treatment, radiation, and chemotherapy, may have contributed to these problems. This outcome concurs with Chang *et al*. (2019), who state that sexual dysfunction is frequently seen in breast cancer women, and symptoms include decreased breast sensitivity, decreased sexual pleasure, dyspareunia, libido loss, and dryness and shrinkage of the vagina.

The current study's premise is that providing women with breast cancer with an "Educational Nursing Program" will improve their quality of sexual life, sense of self, and perception of their bodies. According to the study's findings, the tables and figures presented notable variations between the subjects' test scores before and after the program. This result validates the study's hypothesis.

To enhance the body image of breast cancer women, researchers used body image scale to compare bodily perception before and after implementation. There was a significant change in every aspect of the self-image subscale before and after the implementation of the educational nursing program. This outcome was consistent with the findings of Hamed *et al*. (2019), who discovered that the psychoeducational program considerably improved the post-mastectomy women's body image issues by lowering the mean score of their concerns.

The findings of the current study are contradictory with Andreis, 2018 who discovered that there was no discernible impact on body image following the educational program for individuals with mastectomies. The study also revealed that although there were significant differences in body image among the subjects within the first year after the operation, these differences eventually disappeared.

The current study's findings showed a highly statistically significant difference in the study sample levels of self-esteem pre and post utilising the educational program. This result demonstrates that the training was successful in boosting participants' self-esteem after having a mastectomy. Similarly, Richard *et al*. (2019) reported that following group education sessions, women's self-esteem increased due to the combination of textbooks, lectures, and printed educational resources.

These results also demonstrated that the percentage of study participants' wives who are reluctant to ask their husbands for sex and who feel ashamed to ask for life advice reduced following the implementation of the nursing education program. This result is consistent with that of Faghani and Ghaffari (2016), who found that the program improved the quality of sexual life for breast cancer women. However, Stabile et al. (2017) found no correlation between the educational program and the physical symptoms related to sexual life experienced by women diagnosed with BC, including discomfort during sexual activity, dryness, vaginal adhesions, lack of sex desire, and absence of orgasm.

According to the study, women who have breast cancer often rely on inaccurate information about sexual health from others, are unaware of the level of sexual health after BC and learn from each other while conversing and chatting while they wait. This result is consistent with Yan *et al*. (2020) claim that erroneous sexual attitudes regarding cancer could be corrected through effective patient-doctor communication regarding sexuality.

Limitations of the Study

Several of the participants withdrew from the study at the beginning of the implementation phase due to discomfort discussing the quality of their sexual lives. The researchers replaced the withdrawn participants with others to maintain the sample size. This limitation highlights the potential sensitivity of the topic, which may have influenced participant retention. Further studies could consider incorporating strategies to address these concerns to minimize dropout rates and ensure a more complete understanding of the impact of breast cancer on sexual well-being.

CONCLUSION

Findings of the current study concluded that after an educational nursing program was implemented, women with breast cancer experienced a notable enhancement in sexual life quality, self-esteem, and body image. In addition, there was a strong statistically significant correlation between the quality of sexual health, self-esteem, and body image scores between the women with breast cancer being studied, so the current study's findings are consistent with the research hypothesis.

Future studies with long-term follow-up assessments to evaluate the sustained impact of educational nursing programs on quality of life, body image, and self-esteem among women with breast cancer will enhance the understanding. Studies should include comparison groups to evaluate the effectiveness of educational nursing programs compared to standard care., conduct large-scale research among breast cancer women to explore ways to enhance sexual lives, body image, and self-esteem and replicate the study with a

substantial sample across different settings to generalise the results.

Recommendation

A health education program must be developed to train healthcare providers to help women with breast cancer feel better about bodies, self-esteem and quality of their sexual life, create a counseling intervention focused on coping strategies for those affected by breast cancer. future studies should consider a larger and more diverse participant pool. A larger sample would enhance the statistical power and generalizability of the findings, offering more reliable insights into the impact of educational programs on a broader population.

Conflict of Interest

The authors declare that they have no competing interests.

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