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Knowledge, attitudes, beliefs and practices regarding breast self-examination among female students at Rusangu University in Monze, Zambia

Michel Vaillant Mutabazi[1]*, Sophonie Ndahayo[2]

1 Rusangu University, Monze, Zambia
2 Department of Public Health - Texila American University, Zambia

***Corresponding author:** Michel Vaillant Mutabazi

mmvaillant18@gmail.com

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Abstract

The objective of this study was to assess the level of knowledge, attitudes, beliefs and practices regarding Breast Self-Examination (BSE) among female students at Rusangu University main campus in Zambia. The sample consisted of 180 female students. Data was collected using a self-administered questionnaire. Descriptive and inferential statistics were derived using SPSS V20.0 and Microsoft Excel 2016. Results showed that participants, who had heard about BSE 137 (76.1%), had a satisfactory level of knowledge and the main sources of information were mass media, friends/relatives, nurses and doctors. A general negative attitude (mean response=0.77 on scale of 2; standard deviation=0.80) towards BSE was reported, however the respondent's beliefs were positive (cumulative mean of 68% corresponding with Bloom's variable cut-off points=1.35 on a scale of 2). Of the 180 respondents 100 (55.6%) reported to have practiced BSE, among whom good practices (cumulative mean=95.5%) were portrayed. Moderate correlations between knowledge and practices (r=0.495) were found, whereas a low degree of correlation between attitudes and practices (r=0.024), as well as beliefs and practices (r=0.112) were found. In conclusion, more regular and intensified BSE awareness programs among university students are essential to improve knowledge and practices. Further research needs to be done on how to use contemporary methods to disseminate BSE information, in order to improve knowledge, attitudes, beliefs and practices regarding BSE especially among university students.

Keywords: Breast cancer; breast self-examination; female university students; knowledge; attitude; beliefs and practices

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Introduction

Breast cancer is a malignant tumour that starts in the cells of the breast and is characterized by uncontrolled growth of abnormal cells in the milk producing glands of the breast or in the ducts that deliver milk to the nipples [1] Breast cancer is a pandemic that is affecting both the developing and developed countries [2] and it is reported to be common in 154 of the 185 countries included in Global Cancer Incidence, Mortality and Prevalence database [3]. Breast cancer is most commonly diagnosed among women and accounts for about 24.2% of new cancer cases, meaning that approximately one in four of all new cancer cases diagnosed in women [3].

World Health Organisation (WHO) promotes breast cancer control within the context of comprehensive national cancer control programs that involve prevention, early detection, diagnosis and treatment as well as rehabilitation and palliative care (WHO, 2007). One such early detection method is BSE, which has been seen to empower women, enabling them to take responsibility for their own health. BSE is recommended for raising awareness among women at risk rather than as a screening method [4]. Early detection methods in order to improve breast cancer outcome and survival remain the cornerstone of breast cancer control [5]. In addition, considering results [6] that physicians, care managers, and patients showed undisputed agreement regarding the positive impact on patient health and self-management, and attributed the outcomes to the strong partnership between the care manager and the patient and the collaboration between the physician and the care manager, it would be advisable to apply the disease and care management model in the prevention and control of breast cancer.

Problem Statement

Breast cancer is a potentially preventable cause of death globally, with an alarming exponentially increasing incidence especially in developing countries [7]. In addition, cancer and its ravaging effects have been more frequent and noticeable in low- and middle-income populations [8]. Of great concern to

the researchers, in Zambia the case detection and prevalence of breast cancer continues to hike with incidence having increased from 21 to 37(76%) between the years 2016 and 2017 respectively [9]. Similarly, during the Rusangu University 2018 Breast Cancer Awareness Day, 55 clients were clinically examined, of which 5(9.1%) clients were found to have lumps that required further investigation. For this reason, they were referred to facilities with necessary diagnostic equipment. Furthermore, [10] reported that of the four leading non-communicable diseases in Zambia, cancer has had significant (60% of all new cases in 2018) morbidity and mortality, especially cancers that affect women namely cervical and breast cancers. The above results prompted the researchers to find out the knowledge, attitudes, beliefs and practices regarding breast self-examination among female students at Rusangu University main campus.

Methodology

The study was conducted at Rusangu University, Main Campus, located in Monze District, in the Southern Province of Zambia. It is located about 204.1 km from Lusaka the capital city of Zambia. Rusangu University is one of the accredited tertiary institutions of learning in Zambia, offering courses in Business, Education, Religion, Theology, Science and Technology, Social Sciences, and Health Sciences. As a growing institution, greater heights are being pursued in terms of research, health awareness and community outreach projects. The selection of the setting was based on the identified need that was appreciated during the RU breast cancer awareness day 2018.

This was a descriptive cross-sectional study. The study population comprised of more than 500 female students. This populace encompasses individuals pursuing various academic disciplines, coming from various provinces of Zambia, and a few others from other African countries. The study only included female students who were above 18 years of age and consented to participate in the study. All potential participants who did not meet the inclusion criterion were not considered.

A stratified random sampling method was adopted for identification and selection of participants, in order to avoid the bias of collecting data from individuals of the same discipline. Participants were placed in strata based on the discipline they were pursuing at the institution. The sample was randomly selected in each stratum to allow for equal chance of selection.

A sample of 222 was calculated using Yamane's formula, at 95% confidence interval and a 0.05% margin of error. Data was collected using a self-administered questionnaire. It was composed of questions in English structured to assess participants regarding breast self-examination as follows; Section A: Demographics, Section B: Knowledge, Section C: Attitudes, Section D: Beliefs, Section E: Practices. It had several questions under each section.

A pilot study was conducted at Kabwe School of Nursing and Midwifery. This exercise provided a general overview of the actual study. It assisted in testing feasibility, reliability and validity of the instrument and it gave insight into the objectivity of the tool providing room for amendment.

Data analysis was conducted using IBM Statistical Package for the Social Sciences (SPSS) version 20.0 as well as Microsoft Excel 2016, and both descriptive and inferential analyses were employed.

Ethical clearance was obtained from Rusangu University's School of Health Sciences and Administrative Board. Sufficient information was given about the right to decline participation or to skip some questions they are unwilling to answer. Written consent was also obtained from the persons who took part in the research and it was outlined to them that they had the right to withdraw from the study any time. Anonymity and participant confidentiality were maintained by not requiring personal identifying information.

Results

All respondents in this study were females (n=180). Of the 180 respondents (**Figure 1**), majority 169 (93.9%) of the respondents were in the age group 18-25 years, 8 (4.4%) were of the age group 26-35 years, 1 (0.6%) and 2 (1.1%) were of the age groups 36-45 and 46-55 respectively. Furthermore, results (**Figure 2)** showed that 101 (56.1%) of the respondents were pursuing studies in the school of Health Sciences and that 27 (15%), 24 (13.3%), 15 (8.3%), 11 (6.1%) and 2 (1.1%) were studying in the schools of Education, Humanities and Social Sciences, Science and Technology, Business, and Theology and Religious Studies respectively.

Table 1 is a descriptive computation of the summation of the mean values of each question that was considered for determination of the level of knowledge. The collective mean was found to be 1.47 (73.5%) which indicates a satisfactory level of knowledge about breast self-examination among those who heard about it.

Table 2 revealed that of those who were 18-25years of age 42 (24.9%) had not heard of BSE whereas 127 (75.1%) had heard of it. Of those who were 26-35years of age 1 (12.5%) had not heard of BSE while 7 (87.5%) had heard of it. Interestingly of those in the age groups 36-45 and 46-55 all had heard of BSE; 1 (100%) and 2 (100%) respectively.

Figure 3 shows that of the total population, among those in first year, 5 (31.3%) had not heard of BSE and 11 (68.7%) had heard of BSE. Similarly, of those in second year 9 (36%), 16(64%) had not heard and others had heard of BSE respectively. Among the third years 18 (22.8%), 61 (77.2%) had not heard and others had heard of BSE respectively. It was also appreciated that among the fourth years 11 (22%), 39 (78%) had not heard and others had heard of BSE respectively. Finally, among the fifth-year students all 10 (100%) had heard about BSE.

In this study attitude was taken to be the way one thinks and feels about BSE, especially as it relates to the way they behave and react to given predicaments. Precisely 16 questions from the attitude section were analyzed to describe the respondents' attitude toward BSE (**Table 3**). The mean of the respondents' answers to each question was computed. A summative mean of the responses to the 16 questions, which were considered for the description of attitudes, was 0.77 (38.5%), indicating a negative attitude towards BSE.

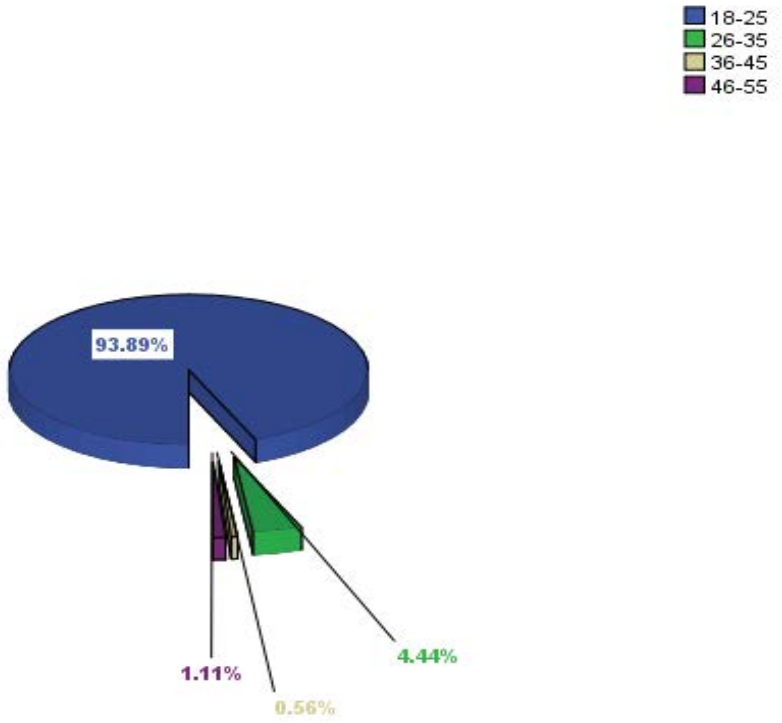

Figure 1 Respondents' Age in Years (N=180).

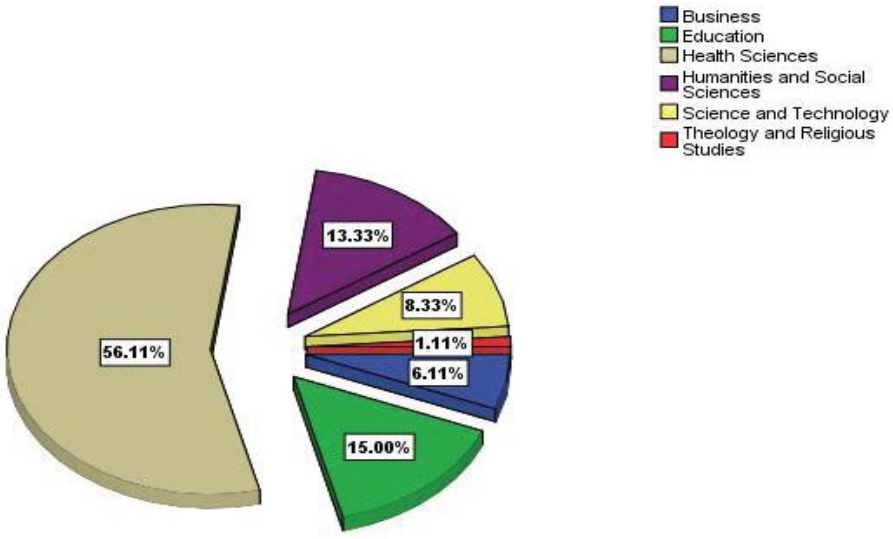

Figure 2 Respondents' School of Study (N=180).

Table 1 Respondents' level of knowledge (N=180).

Knowledge Descriptive	
Mean	1.473333
Mode	#N/A
Standard Deviation	0.283239
Sample Variance	0.080224
Sum	17.68
Count	12

Table 2 Respondents age and awareness about BSE (N=180).

Cross-tabulation Count			
Age in Years	Have you heard of breast self-examination?		Total
	No	Yes	
18-25	42	127	169
26-35	1	7	8
36-45	0	1	1
46-55	0	2	2
Total	43	137	180

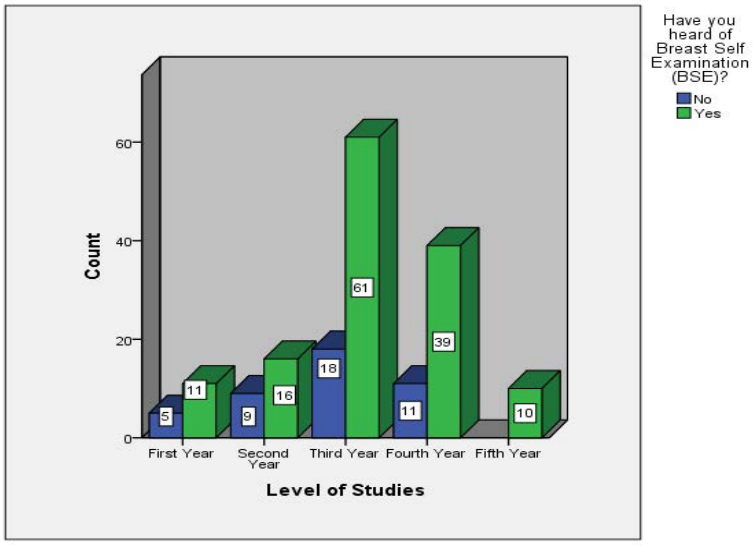

Figure 3 Respondents' level of study and awareness about BSE (N=180).

Table 3 Respondents' attitudes (N=180).

Descriptive Status								
	N	Range	Minimum	Maximum	Sum	Mean	Std. Deviation	Variance
I'm interested in Breast Self-Examination(BSE)	180	2	0	2	344	1.91	0.413	1.71
BSE is important in early detection of breast cancer	180	2	0	2	344	1.91	0.413	1.71
Doing BSE makes/ may make me feel unpleasant	180	2	0	2	46	0.26	0.67	0.448
Doing BSE is/may be embarrassing for me	180	2	0	2	20	0.11	0.459	0.211
Doing BSE is/would be time wasting	180	2	0	2	8	0.04	0.296	0.087
I am afraid of doing BSE because I might detect breast cancer	180	2	0	2	54	0.3	0.716	0.513
If there is a lump during BSE, I would prefer to get treatment from a medical facility	180	2	0	2	344	1.91	0.413	1.71
BSE publicity or campaigns motivate/would motivate me to perform BSE	180	2	0	2	328	1.82	0.571	0.326
I don't have to do BSE because I'm healthy and I have no symptoms of breast abnormality	180	2	0	2	30	0.17	0.554	0.307
I don't have to do BSE because I can never have breast cancer	180	2	0	2	14	0.08	0.388	0.15
My breasts are too large for me to complete BSE	180	2	0	2	6	0.03	0.257	0.066
It is hard to remember to do BSE	180	2	0	2	140	0.78	0.978	0.956
I have other problems more important than doing BSE	180	2	0	2	14	0.08	0.388	0.15
I don't have enough privacy to do breast exam	180	2	0	2	36	0.2	0.602	0.362
I desire training on BSE	180	2	0	2	314	1.74	0.67	0.448
BSE should only be practiced by females	180	2	0	2	185	1.03	0.862	0.742
Valid N (list-wise)	180							

For the purpose of this survey participants' beliefs were taken to be the convictions of the truth of some statement regarding BSE and breast cancer. **Table 4** shows that a cumulative mean of 1.36 (68%) is obtained by computing a summation of the means of the 8 questions that were considered for the description of respondents' beliefs. This indicates that the summative respondents' beliefs were positive.

Results **(Table 5)** showed that a cumulative mean for the practices questions was 1.91 (95.5%), indicating good practices among those who reported that they practice breast self-examination. Of the 80 (44.4%) respondents who reported never having performed breast self-examination, various reasons where given for not practicing it such as; lack of knowledge 65 (48.9%), thinking that it is not necessary 8(6%), forgetting to do it 49 (36.8%) and other reasons 11 (8.3%) that relate to the afore mentioned such as thinking they can never have breast cancer or there is no way of preventing one's self from breast cancer **(Figure 4)**.

Discussion

The results of this study showed that majority of the participants

Table 4 Respondents' Beliefs Descriptive (N=180).

Descriptive Status							
	N	Minimum	Maximum	Sum	Mean	Std. Deviation	Variance
BSE is not in agreement with my religious beliefs	180	0	2	324	1.8	0.602	0.362
BSE is a sexually immoral practice	180	0	2	344	1.91	0.413	0.171
My breast should be touched only by my partner/partner to be, not by myself	180	0	2	348	1.93	0.36	0.13
Prolonged practice of BSE causes breast cancer	180	0	2	274	1.52	0.523	0.273
There is nothing one can do to reduce their risk of developing breast cancer	180	0	2	278	1.54	0.572	0.328
BSE is a screening method that replaces mammography (X-ray examination of the breasts)	180	0	2	161	0.89	0.673	0.452
BSE is a preventive measure for breast cancer	180	0	2	110	0.61	0.765	0.585
BSE ban detect any size of lump	180	0	2	120	0.67	0.652	0.425
Valid N (list-wise)	180						

Table 5 Respondents' practices of BSE (N=180).

Practices Descriptive	
Mean	1.911
Standard Deviation	0.281443
Sample Variance	0.07921
Sum	19.11
Count	10

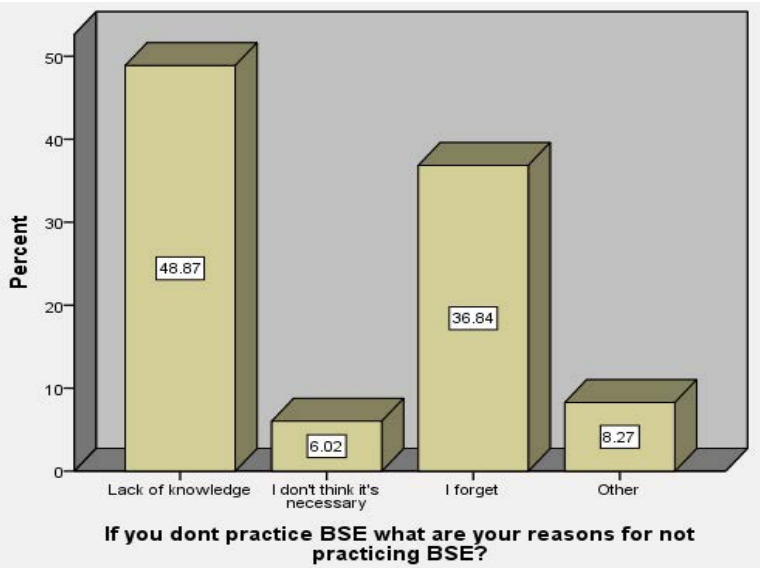

Figure 4 Reasons for not practicing breast self-examination (N=180).

169 (93.9%) were of the age group 18-25 years. The results were similar to those reported in other studies [11-14]. Unlike most studies on this topic conducted among university students, this survey managed to gather information from students of various disciplines, and it discovered that a majority 101 (56.1%) of the participants were from the school of health sciences supposed to know about health issues such as the fact that management of a chronic disease requires that patients take a more active role in the day-to-day decisions about the management of their illness [6]; followed by the schools of education 27 (15%), humanities and social sciences 24 (13.3%), science and technology 15 (8.3%), business 11 (6.1%) and theology and religious studies 2 (1.1%). The proportions of the faculties of the participants seem to correlate with the presumed number of students that pursue various disciplines as such may be representative of the entire population studied.

With regards to the year of study, results showed that 16 (8.9%) were in their first year, 25 (13.9%) second year, 79 (43.9%) third year, 50 (27.8%) fourth year and 10 (5.6%) fifth year. From these results, one can deduce that more than three-quarters of the participants were senior students, as such be expected to have more knowledge on issues that pertain to their body's health such including BSE.

When asked whether they had any relative who suffered from breast cancer, 10 (5.6%) replied that they did have a family history while 170 (94.4%) replied that they did not. The reported family history of breast cancer was lower than 9.2% that was reported by [15], which shows that cancer cases may not necessarily follow family history.

The findings of this research bring to light that, of the 180 participants, 137 (76.1%) were aware about BSE. These findings are similar to those of [13,16,17]; in which 85.1% (n=221), 88.0% and 190 (66.7%) of participants had heard of BSE respectively. However, one other study shows that as low as (41.6%) of participants had heard of BSE [11]. Upon analysis of the knowledge item questions, this study found that the knowledge levels of the 137 (76.1%) who were aware about BSE were at 73.5%, indicating a satisfactory level of knowledge. These findings are a contrast to similar ones in which majority (69%) of the participants had poor levels of knowledge [18,19].

A cross tabulation between awareness about BSE and interest in practicing it, revealed that there is a small correlation (P=0.069) between the two variables according to Pearson's r correlation coefficient. A comparative analysis of respondents' age in years and whether they have heard about BSE revealed that the percentage of those in each age group that had heard of BSE increased with age. This may be attributed to the fact that with increasing age one becomes exposed to more information sources and receives health services such as family planning and antenatal care wherein they are likely to be introduced to BSE. It may be also that with age women seek to better understand their bodies and hence become exposed to information such as that on BSE.

In one analysis, with consideration of each participants' marital status, participants were questioned about whether they had heard of BSE, of which it was found that, of those who were single, only 123 (71.7%) had heard of BSE, whereas among the married participants all of them 8 (100%) had heard of BSE. This is the case probably because married women are often exposed to the major health services (family planning and antenatal clinics) where reproductive health topics such as BSE are discussed.

In view of ones school of study and whether they have heard of BSE, the following is the ascending order of participants from respective schools who had heard about BSE: theology and religious studies 1 (50%), business 7 (63.6%), science and technology 10 (66.7%), education 19 (70.4%), humanities and social sciences 19 (79.2%), health sciences (80.2%). This confirms the iteration of [13] who reported that health discipline students were more likely to know and practice BSE, most likely because it may be a component of their curriculum. Evidently at least half of the females in each discipline have at best heard of BSE, which is an advantage as far as BSE awareness is concerned.

In respect to one's year of study and them having heard of BSE the findings show that there are greater proportions of those who have heard of BSE among participants in their third 61 (77.2%), fourth 39 (78%) and fifth 10 (100%) years. More third years than any other year of study reported to have heard of BSE. It was interesting to note that even among first years and second years, more than half of the participants in these years of study had heard of BSE. It appears that from third year upwards the percentage of participants who have heard of BSE increases, indicating a possibility of more exposure to BSE information as one progresses with their education.

Similarly, in assessing whether there was an association between having heard of BSE and practicing it, the obtained Pearson's r correlation coefficient revealed a strong correlation (r=0.495) between the two variables. Similarly, [11] found a significant association between one's level of knowledge and practice of BSE (P=0.000). A moderately significant correlation (r=0.590) between one knowing how to perform a BSE and them practicing it was also obtained in this study. On this note, [15] in one survey reports that lack of knowledge on how to do BSE was the most discouraging factor to practicing. [20] Noted a need for intensified breast cancer awareness programs in order to increase knowledge levels and to improve disease outcomes.

Participants were then asked 16 questions that were aimed at assessing their attitude. It was found that their attitudes were at an average of 38.5%, indicating a negative attitude towards BSE. These results are a plain contrast of what was obtained by [11] in which the participants had a positive attitude. However, in line with this study, [21] reported in one research that despite participants having knowledge regarding BSE, they did not show positive attitude toward BSE. A further enquiry on the interest in practicing BSE and its actual practice exposed that there is a small correlation between the two.

Beliefs were assessed by use of 8 questions, and a mean of 68% was obtained. This indicated that on average the respondents'

beliefs were positive. These results tallied with [22] who found that the majority of participants (90%) held that BSE was not against their beliefs. Similarly, [23] found out that positive health beliefs were a significant stimulant for the performance of BSE. This study assessed the relation between BSE being contrary to one's religious beliefs and them having ever practiced it, and a small correlation was appreciated. However, no association was found between one perceiving BSE as immoral and them practicing it. A survey conducted in India revealed that the most common reason for not doing BSE was belief that BSE was not necessary [24].

When asked if they have ever practiced BSE, 100 (55.6%) reported that they had practiced it [15]. Reported in one paper of 89 (22.7%) practicing BSE, of which only 3.3% were practicing monthly. It was found that among the participants who had practiced BSE, good practices existed as evidenced by a mean of 95.5% in regards to the practices questions. On the other hand, when those who had never practiced it were asked the reasons behind, answers included lack of knowledge 65 (48.9%), thinking it is not necessary 8 (6%), forgetting to do it 49 (36.8%) and other reasons 11 (8.3%) such as thinking they can never have BC or there is no way of preventing oneself from BC were obtained. Similarly, [25] found out that lack of awareness of BSE and poor attitudes towards BSE were barriers to its practice. Poor practices indicate a need for peer education as it has been shown to significantly improve practices [26].

Nursing Implications

Further research needs to be done on contemporary methods to employ in disseminating BSE information to youth. All nurses and nursing students should have accurate knowledge of BSE, inculcate positive attitudes and beliefs regarding BSE in their clients, and also foster good BSE practices. Furthermore, nurses should develop and utilize tele-nursing platforms through which to disseminate accurate information on subjects such as BSE.

Limitations

There was a scarcity of related literature; this limited the study in its comparisons. The data was collected by self-report, of which the participants may not have accurately recalled, since BSE performance regularity is a measurement based on what the participant remembers. Beliefs and practice of the individuals change over time.

Conclusion

Results of this study revealed a satisfactory level of knowledge among those who had heard of BSE, negative attitudes, positive beliefs and good practices among those who had practiced BSE. Frequent, comprehensive BSE awareness campaigns are needed to create and improve awareness and practice among female university students.

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