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Research Article

APPLICATION OF THE HEALTH BELIEF MODEL GUIDES FOR PROMOTION OF BREAST SELF-EXAMINATION AMONG FEMALE STUDENTS IN HIGHER SECONDARY SCHOOL -OMDURMAN LOCALITY-KHARTOUM STATE-SUDAN

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ABSTRACT

The Health Belief Model has been one of the most widely used conceptual frameworks in health behaviour. The HBM has been used both to explain change and maintenance of health -related behaviours and as a guiding framework for health behaviour intervention. A school-based prospective interventional study (pre – post) was conducted. So as to apply the Health Belief Model Guides for the health education intervention to promote breast self-examination among female students'. The target population is the female students in higher secondary schools, six schools were selected randomly. A sample of 320 female students from intervention schools and 320 female students from comparison schools was included. Data was collected using a questionnaire, and analyzed using SPSS and the relationship between the variable was checked using X²-Test at the level of significance (0.005). The overall knowledge of breast cancer among the female students increased from 31.9% to 99.7% after the intervention. The statistic showed significant results in both intervention and comparison schools (p=0.005). The knowledge among female students regarding the susceptibility to breast cancer was 39.2% before intervention which increases to 95.4% after the intervention among female students. The statistic showed significant results (p=0.005). The statistic showed the significant result (p=0.005). There was no significant relation in the comparison schools. 64.3% of female students had no appropriate place to practice breast self-examination. This increased to reach (75.1%) after the intervention, which is a significant positive change in their knowledge (P=0.005). The study recommended the Intensive health education program needs to be implemented to raise female students awareness about breast cancer and breast self-examination in comparison schools.

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INTRODUCTION

For decades, the HBM has been one of the most widely used conceptual frameworks in health behavior. The HBM has been used both to explain change and maintenance of health -related behaviors and as guiding framework, for health behavior intervention The HBM is considered the most widely used models for predicting BSE behavior (Champion, 2010). The key concepts of HBM include perceived susceptibility, perceived severity, perceived benefits, perceived barriers, cues to action, and self-efficacy added by Bandura in 1977. Breast self-examination (BSE) provides a relatively simple, low-cost method of early detection that can be performed more

frequently than mammography or clinical breast examination. And it has been reported to be effective in detecting the early symptoms of breast cancer, in turn, greatly reduces mortality from breast cancer (Jerry, 2011). Breast cancer is the most common cancer for women. About one in every nine women will develop breast cancer in her lifetime, 99% of all breast cancers are diagnosed in women, 1% affect men (Christian, 2010). One in every eight women in the United States develops breast cancer (Miller, *et.al.*2012). Over 200,000 new cases of invasive breast cancer are diagnosed each year, Nearly 40,000 women will die of breast cancer in 2011. There are over 2.5 million breast cancer survivors in the United States (Glanz, *et.al.* 2012). Breast cancer is one of the leading causes of death among women in Sudan; also it represents highest exposure

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percentage between other kinds of cancer. Five in 1000 women in Sudan will develop breast cancer during their lifetime. The health belief model was used as an expectancy-value model in dealing with breast cancer (Sudan Ministry of Health, 2010). This study carried to apply the Health Belief Model Guides for health education intervention to promote breast self-examination among female students.

MATERIAL AND METHODS

Study Design

This school based prospective interventional study (pre – post) was conducted among female students – higher secondary school – Omdurman locality, among period 2014-2015. **Study**

Area

This study was carried out in Khartoum State–Omdurman locality. The area of the study is bordered by River Nile in the East, Ombada locality in the West, Karary locality in the North, and the White Nile State in the South with area (740) Km². And the Population is (550,292). The number of women in the reproductive age is (132,620), there are 73 health centers and 24 hospitals (Omdurman locality, 2014).

Sample size

Sample size was determined using the following formula: $n = (Z)^2 * P * q / d^2$; z: Value of standard normal variable corresponding to (95%) level of significance = 1.96, p: prevalence rate of breast cancer was (0.005) (Ministry of Health- Khartoum State, 2014), q: non-infected people = 1-P = 0.995, d: marginal error = 0.007. Then the calculation lead to a sample size of (320) female student and was divided over (6) school.

Selection of school sample

Using the lottery method, Omdurman locality was divided into two administrative units, Baladiat Omdurman (study schools) 2. Abu seed and rural (comparison schools). By using lottery method (3) governmental female schools and (3) private female schools were selected randomly from an aggregation of (58) school in Omdurman locality. The sample was distributed proportionally according to weight over (3) intervention schools and (3) comparison schools, Three hundred twenty (320) students were included from the control and the intervention group to a have a total sample of 640 students from both intervention and control groups.

Methods of Data Collection

A pre-prepared and tested questionnaire was used before and after the intervention to collect data regarding breast cancer and breast self-examination from both intervention and comparison schools. The questionnaire includes social, demographic data, knowledge about Susceptibility, Seriousness, benefits and barriers of breast self-examination

Data Analysis

Data was analyzed by the computer using Statistical Package for Social Science program (SPSS). Also, the chi-square test was used to test associations between different variables.

RESULTS

Table 1 Demographic data for female students, Omdurman locality

Demographic data		Intervention schools		Comparison schools	
		N	%	N	%
Age	11-15	266	83.1	174	54.4
	16- more	54	16.9	146	45.6
Marital status	Married	318	99.4	318	99.4
	Single	2	0.6	2	0.6
Family type	Nuclear	168	52.5	189	59.1
	Extended	152	47.5	131	40.9
Residential area	Rural	6	1.9	196	61.2
	Urban	314	98.1	124	38.8
Menarcho age	9-12	119	37.2	104	32.5
	13-16	201	62.8	216	67.5

The study revealed that (83.1%), (54.4%) of female students in the intervention schools and comparison schools, were in the age group between 11 to 15 respectively, (99.4%) of female students in the intervention and comparison schools were single and (37.2%), (32.5%) of female students in the intervention and comparison schools, were in the menarcho age group between 9 to 12 years old respectively.

Table 2 The correlations between knowledge about breast cancer and subscale scores of CHBMS

Sub-Scales	Intervention schools		Comparison Schools		P-vale
	Pre%	post%	Pre%	Post%	
Susceptibility	39.2	95.4	56.6	68.3	P value= 0.005 P value=0.1**
Seriousness	49	95.7	75.5	75.8	P value = 0.005* P value = 0.1**
*BSEbenefits	74.1	98.1	78.9	83.6	P value = 0.005 P value = 0.8
BSE barriers	64.3	75.1	12.5	10	P value = 0.005 P value = 0.8
BSE Self- efficacy	51.9	99.4	18.9	16.4	P value = 0.005 P value = 0.5

*P-value for intervention school**P-value for Comparison Schools

Table (2) showed that: 39.2% of female students mentioned all the suspected factors that may increase the probability of acquiring breast cancer. This increased to 95.4% after the intervention, which is a highly significant positive change in their knowledge (P=0.005), while there was no significant change among the comparison groups (P=0.1). Also showed that: 49% of female students mentioned all option about serious and increased to 95.7% after the intervention, which is highly significant positive change in their knowledge (P=0.005) while There was no significant change in the comparison schools (P=0.1), result showed that: 74.1 of female students mentioned all the correct suspected benefits of breast self-examination, this increased to 98.1% after the intervention, which is highly significant positive change in their opinion (P=0.005) while there was no significant change in the comparison schools (P=0.8). Table result also showed that: 64.3% of female students had no appropriate place to practice breast self-examination, this increased to reach (75.1%) after the intervention, which is a significant positive change in their knowledge (P=0.005) while there was no significant change in the comparison schools (P=0.8). Also, the results indicated that 51.9% of female students practicing breast self-examination

before the intervention, they increased to reach (99.4%) after the intervention, which is a highly significant positive change in their practice ($P=0.005$). There was no significant change in the comparison schools ($P=0.5$).

Table 3 Knowledge about Symptom, Perception and Frequency among female student

Variables	Intervention schools		Comparison Schools		P-vale
	Pre%	post%	Pre%	Post%	
Knowledge about Symptoms	50	96.9	58.5	57.1	P value = 0.005* P value = 0.3**
Perception	93.1	96.9	89.6	99.5	P value = 0.005 P value = 0.005
Frequency	78.6	98.4	62.5	20	P value = 0.005 P value = 0.9

Before the intervention half of the female students in the intervention schools knew the symptoms of breast cancer, these percentage was increased to (96.9%) after the intervention, this was found to be significant ($P= 0.005$), But there was no significant change in the comparison schools ($P= 0.3$), 93.1% of female students mentioned that breast cancer is a dangerous disease before the intervention that increased to 96.9% after the intervention, which shows significant positive change in their knowledge there was also significant positive change among the comparison groups ($P=0.005$), also table showed that:78.6% of female students practicing breast self-examination once a month which is better one, this increased to 98.4% after the intervention, which is highly significant positive change in their practice ($P=0.005$) while there was no significant change in the comparison school ($P=0.9$).

DISCUSSION

The study showed that the majority of female students in the intervention schools (83.1%), and (54.4%) in the comparison schools were in the age group between 11 to 15 years old. At this age, the female students may be less likely to practice BSE. This finding with (Prateek, *et.al.* 2013). Most of the female students in the intervention and comparison schools (99.4%) were single, single women may be less interesting to practice BSE compared with married women. A study which applied HBM carried by (Prateek, *et.al.* 2013) revealed that. Most of the female students in the intervention and comparison schools, (37.2%), (32.5%) were in the menarche age group between 9 to 12 years old. At this age group, the ability of female students to acquire breast cancer may be more than other age groups; this complied with what was stated by (Glanz, Karen, *et.al.* 2012).The knowledge among the female students regarding their susceptibility to breast cancer was (39.2%) before intervention which increased to (95.4%) after intervention among the female students in intervention school, this was found to be significant (P -value =0.005). There was no significant relative change in the comparison schools (P value =0.1). This situation reflected the efficiency of intervention, this complied with a study applied HBM carried by (Prateek, *et.al.* 2013).The opinion among the female students about the seriousness of breast cancer was: before the intervention approximately half of the female students (49%) in the intervention schools feel a scariness, changing a lifestyle and threat of life. Such opinion increased to include most of the female students (95.7%) after the intervention, indicating a significant change ($P=0.005$) while no significant changes were

noted in the comparison schools (P value =0.1), the result revealed from (Robert's, 2003) supported the result in this study. Most of the female students78.6% practice BSE once a month before the intervention and 98.4% after the intervention, this was found to be highly significant (P -value =0.005). There was no significant change in the comparison schools (P value=0.9). This complied with a study applied HBM, carried by (Paul N, Kate B2010). More than half of female students 64.3% have no appropriate place to practice a BSE as one of the barriers to an intervention that increased to 75.1% after the intervention in the intervention schools. This was found to be significant (P value=0.005). There was no significant relative change in the comparison schools (P value=0.8). This complied with that was **stated by** (Pac, *et.al.* 2011). Approximately half of the female students (51.9%) practiced breast self-examination before the intervention that increased to (99.4%) after the intervention in the intervention schools. That explain the role of health education intervention to increase the awareness of female students about BSE. This was found to be a highly significant (P -value =0.005). There was no significant change in the comparison schools (P value =0.5). This situation reflected the efficiency of intervention. This complied with that stated by (Prateek, *et.al.* 2013). before the intervention half of the female students in the intervention schools (50%) knew the symptoms of breast cancer, this percentage was increased to (96.9%) after the intervention. This was found to be significant (P -value =0.005). There was no significant change in the comparison schools (P value =0.3). This situation reflected the efficiency of intervention. This complied with a study applied by (Prateek, *et.al.* 2013). The study revealed that: majority of female students before the intervention 93.1% perceived breast cancer as a dangerous disease, this increased to 96.9% after the intervention, this was found the significant positive change in their knowledge ($p=0.005$). Also in the comparison schools was a significant positive change (P -value =0.005), this similar to the result of (Dander, 2006). Most of the female students 78.6% practice BSE once a month before the intervention and 98.4% after the intervention, this was found to be highly significant (P -value =0.005). There was no significant change in the comparison schools (P value= 0.9). This complied with (Paul, 2010).

Recommendation

Using the HBM Guide for health education intervention to promote and encourage BSE among female students.

An intensive health education program needs to be implemented to raise female student's awareness about breast self-examination in comparison schools.

References

- Administration of Health and Social Affairs, Omdurman Locality, (2014). Information records. Khartoum. Sudan.
- Champion, V. L. (2011). Use of HBM in determining the frequency of breast self-examination. Research in nursing and health. Indian University School of Nursing. India (8) Pages 373-379.
- Christian, H.J. (2010). Breast cancer in men. National cancer society. New daily India. Pages 58-60.
- Dander, M.B. (2006). The knowledge and attitudes of breast self-examination and mammography in a group of

- women in a rural area in western Turkey. Cela Bayar University. Manias, Turkey. 1(10) Pages 471-643.
- Federal Ministry of Health, (2010). Documentation and information. Non-communicable disease department. Khartoum, Sudan.
- Glanz, Karen, Bishop, Donald, B. (2010). The role of behavioral science theory in development and Implementation of public health interventions. Annual review of public health. Boston, USA. (31) Pages 399-418.
- Jerry, M. (2011). An Introduction to the Symptoms & Signs of Surgical Disease, 3rd end. Arnold. International Cancer Society. India July. 2(7) Pages115-124.
- Koster, U., Rogan, J., and Gibson, M. (2012). Perception of threat, benefits and barriers in breast self-examination amongst young systematic women. *American cancer society*. Pages 245-287.
- Miller, S., Suzanne, M., Shoda, A., and Karen, M. (2012). Applying cognitive – social theory to health- protective behavior: breast self-examination in cancer screening. American psychological association. *American cancer society*. 1(119) Pages 70-94.
- Prateek, S. S., and John, M. (2013). Self-breast examination: A tool for early diagnosis of breast cancer. Community medicine department. Shri Sathya Sai Medical College and Research Institute. Kancheepuram. India. 22 (9) Pages1371-1375.
- Pac, W.C., Cheng, K.W., Yen, L. L., and Prev, M. (2011).A study on women’s practice of breast self-examination in Taiwan. *American cancer society*. 22(3) Pages 316-24.
- Paul, N., and Kate, B. (2010). application of the health belief model to the prediction of breast self-examination in a national sample of women with a family history of breast cancer. Institute of Medical Genetics . College of Medicine. The university of Wales. UK. Pages 1-22.
- Robert, A.S., Vilma, C., and Otis, W.B. (2009). Breast Cancer screening in the United States: A review of current American Cancer Society Guidelines and issues in cancer screening. *American Cancer Society*. 59(1) Pages 27-41.

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