

## Perspicacity of medical students towards breast self-examination

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### ABSTRACT

**Background:** Breast self-examination it is not seen as a pertinent cancer screening tool, yet, it plays an important part in the breast health awareness program. **Aim:** To determine the awareness level of final-year female medical students towards breast self-assessment. **Methods:** A cross-sectional study included final-year female medical students of two consecutive academic years (2019 and 2020) (College of medicine, University of Hail). **Result:** An 83 college students, their additional knowledge regarding breast cancer was from media (69.9%). A 15.7% has a family history of breast cancer, this not affect their breast self-examination practice (P=0.37). A 61.4% were practicing. The justifications in the remainder for not practice either it is unhelpful or it may increase turmoil. An 86.7% believed it is useful means for early recognition of breast cancer. The age of 20 years is the appropriate age to start practice, monthly and one week after menstruation were recognized by 57.8%, 87.9% and 86.7% respectively. Nearly, 69% knew its accurate technique. **Conclusion:** Students had inadequate knowledge and practice regarding breast self-examination, accordingly, its inclusion in the medical school curricula is recommended.

**Keywords:** Attitude; Breast cancer; Breast self-assessment; Female medical students; Knowledge; Practice.

## 1. INTRODUCTION

Globally the cancer is a significant public health issue, among females the breast cancer is the most common type cancer, constituting for about 25% of all female cancers worldwide (Ho et al., 2020). Similarly, in Kingdom of Saudi Arabia (KSA), breast cancer documented in 25.1% of recently detected female cancers (Dalia et al., 2015). Actually, the incidence of breast cancer in Asia is increasing faster than in the West (Ho et al., 2020). Likewise, in KSA, its incidence was remarkably raised in the last decade with the highest mortality in younger age group (Aljohani et al., 2016; Madkhali et al., 2017). Early detection of breast cancer provides more effective management strategies, thus might afford a greater long-term survival (Ahmadian et al., 2016; Dalia et al., 2015). Many approaches for early recognition of breast cancer are



available; one of them is the breast self-examination (BSE) (Ahmed et al., 2018). Studies advocated the performance of BSE as a screening modality in monthly interval, for early detection of breast cancer in females aged equal or more than 20 (Idris et al., 2013; Nemenqani et al., 2014; Rizalar et al., 2017).

Aiming to let them familiar with the appearance and texture of their breasts (Nemenqani et al., 2014), and, to assess them by increasing their ability to notice any alteration in their breasts and discover small palpable tumours as early as possible (Ahmadian et al., 2016; Alsaif, 2004; Idris et al., 2013). It is a straight forward, cost free and non-invasive screening technique (Ahmadian et al., 2016; Ahmed et al., 2018; Alsaif, 2004; Dalia et al., 2015; Idris et al., 2013; Nemenqani et al., 2014). It was first tested among the members of the Martha Organization in Finland in the 1970s; subsequently it was standardized as a method in which a woman examines her breasts for any change that might indicate an atypical process (Ibnawadh et al., 2017). Since, many females develop breasts tenderness and lumpiness before menstruation, several healthcare providers advise the performance of the BSE, 5–7 days after menses (Ahmed and Shrief, 2019). Despite the advent of modern screening methods, more than 90% of breast cancers are detected by the patient themselves, stressing the importance of BSE (Ahmadian et al., 2016; Alsaif, 2004; Idris et al., 2013).

Studies in the KSA, showed a lack of knowledge concerning breast cancer and low rate of practicing BSE (Ahmed et al., 2017; Dalia et al., 2015). In a previous general population study in Hail area, 50% of the participants did not practice BSE (Ahmed et al., 2017). Scarce number of female physicians considering that BSE is unnecessary, therefore, there is a need to evaluate BSE awareness among students who will be physicians in the future (Mohamed et al., 2013). Research suggests individuals who receive training on BSE from a health care professional, prove greater knowledge and confidence, and more likely to practice BSE in a regular manner than those who learnt the technique from other sources (Alsaif, 2004).

The currently conducted study centered on female medical students to determine their awareness extent on BSE, taking into account they will be the future physicians who will have a positive attitude towards educating females, with breaking the embarrassment barrier in eastern cultures, it is easy for them to effectively teach and train females BSE accurately, and increase their awareness regarding breast cancer. Based on that, we designed this study to assess the perspicacity of medical students towards breast self-examination.

## 2. MATERIAL AND METHODS

### Study design

In this cross-sectional study structured questionnaire was constructed after thorough literature review, the study purpose was to measure the participants' knowledge on BSE technique, this was considered when preparing the questionnaire. It contained 22 items which were related to the source of information, advantages, obstacles, efficacy and practice of BSE. The form was piloted on 5 volunteer students out of the main sample of the study and few modifications were done.

### Statistical Analysis

The gained data was managed statistically using Statistical Package for the Social Sciences version 21. The non-categorical data were expressed as a mean and standard deviation, while the categorical data were stated as percentage and comparison between groups performed by Chi square test. P value was considered significant if it is less than 0.05 (CI 95%).

## 3. RESULTS

A total of 83 complete questionnaires were received, with 100% response rate. The mean age of participants was  $23.4 \pm 0.64$  years (range, 22 – 25 years). All were college students so all they studied breast cancer during their career, additional knowledge was from media and friends in 58 (69.9%) and 44 (53.01%) respectively. Thirteen (15.7%) candidates had a family history of breast cancer (Figure 1).

Only 51 (61.4%) participants found practicing the BSE (Figure 2), and among them 2 (2.4%) discovered a breast lump during their routine BSE, and they consulted a doctor. The group of a non-practicing BSE explained that they have not done this either as unhelpful or that it may increase a turmoil and an anxiety or embarrassing. Practicing of a BSE was not affected by the family history of breast cancer as the difference between groups was statistically insignificant ( $P=0.37$ ).

All participants had heard about BSE, and 72 (86.7%) believe that BSE is a useful tool for early discovering breast cancer. Variance in belief of its usefulness between those who practice BSE and those who do not was statistically significant ( $p=0.005$ ). Fifty-one (61.4%) of the participants claimed that they learned the steps of BSE from doctors, whereas the remainder 32 (38.6%) were taught from school teachers, parents, nurses, and friends. Regarding the age of starting BSE, 48 (57.8%) of participants were responded correctly that the appropriate age to initiate BSE is at the age of 20 years. The remainder mentioned that the age of

starting BSE either from puberty or after the age of 30 years in 23 (27.7%) and 12 (14.5%) respectively. The difference in knowing the accurate age of starting BSE between those who practice BSE, and those who do not was statistically not significant (P=0.6).

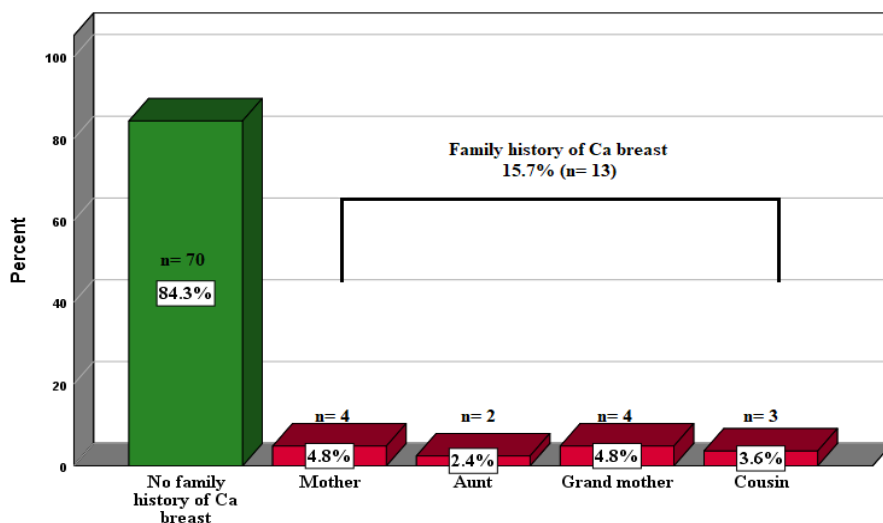


Figure 1 The diagram shows the distribution of breast cancer among respondent's families

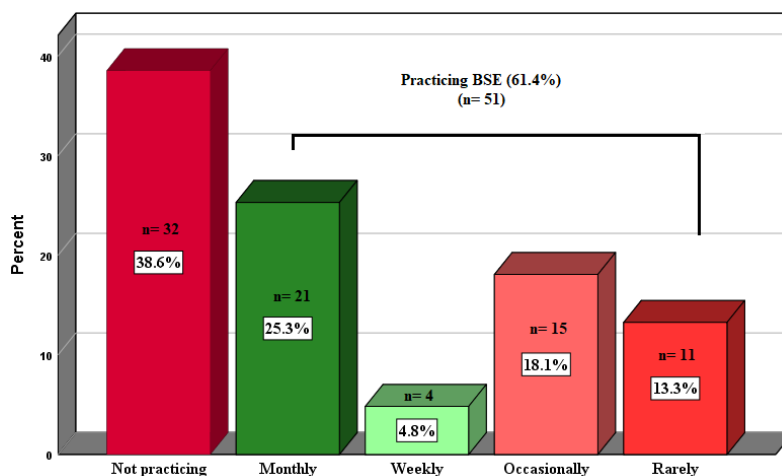


Figure 2 Practice habit of BSE among participants

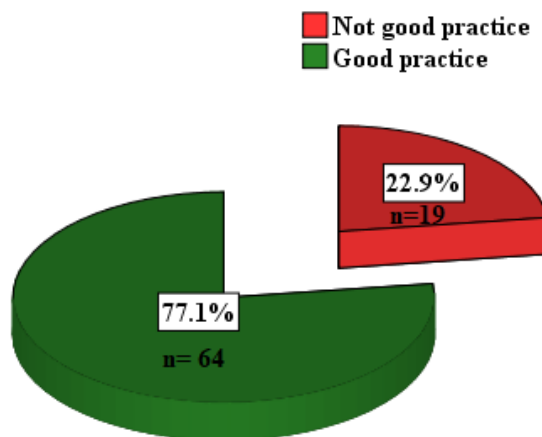
Regarding the timing of performing BSE, 73 (87.9%) of participants were aware that it should be done monthly, and 72 (86.7%) were aware that it should be done one week after menstrual period. The differences between those who practice BSE and those who do not was statistically insignificant as p=0.5 and p=0.3 respectively. Seventy-two (86.7%) know that BSE should be done by the individual; whereas the remainder was not, as 9 (10.8%) participants mentioned that BSE should be carried by doctors, and in 2 (2.4%) was by trained nurse. Furthermore, 57 (68.7%) knew the accurate method of BSE in which it is composed of inspecting the breast in the mirror, feeling the breast with the palm of hand and to examine the armpits. The difference between the groups in the proper method of BSE between those who is practicing and those who do not do was not significant (P=0.09).

In regard to their awareness about extent of breast cancer, whenever, they discover any abnormality during BSE, 80 (96.4%) stated that they will see doctor and only three participants showed that they will pray over it. Likewise, while 74.7% (n = 62) of the participants knew that the benefit of a regular BSE is to help in an early detection of breast cancer, only 63.9% (n = 53) aware that it generally will helps in the detection of any abnormal changes (Table 1). No participant knows the collective accurate benefits of the BSE. The difference between groups performing the BSE and those did not, show no significant difference statistically (P=0.9).

**Table 1** The benefits of BSE among participants

<i>The benefits of BSE</i>	<i>Frequency</i>	<i>Percentage</i>
<b>To be familiar with the breast texture</b>	11	13.2
<b>Early detection of breast cancer</b>	62	74.7
<b>Detection of any abnormal changes</b>	53	63.9
<b>A good breast exercise</b>	8	9.6

The majority of the students (77.1%, n = 64) acknowledged that the BSE is a good practice tool for an early detection of the breast abnormality (Figure 3). The difference in an acknowledgement of the BSE as a good practice between those who is practicing and those who do not was statistically significant (P=0.009).



**Figure 3** Thought of participants on BSE

#### 4. DISCUSSION

In the current study, breast cancer was conveyed by 15.7% of the respondent’s family members, and this percentage was higher than that stated by Sait et al. (2010) in the study among female high school and college students in Saudi Arabia (9.8%), whereas, in Egyptian study conducted by Ahmed and Shrief (2019) family history was found in 25% of studied group. In this study no significant association noticed between the tendency to practice BSE and the presence of breast malignancy in their family history, and this was in agreement with others (Akhtari-Zavare et al., 2011; Montazeri et al., 2008). In contrary, other studies found noteworthy correlation between BSE practice and the presence of breast malignancies among family members (Heidari et al., 2008; Salem and Hassan, 2007; Seah and Tan, 2007). BSE is an important protective technique for early revealing of breast cancer, and might be valuable for early diagnosis of cancers in younger female clusters those are inappropriate for mammographic screening (Rizalar et al., 2017).

The participants in this study were female medical students all they studied breast cancer during their career, with social media being the most common additional source of information (69.9%). This observation was in line with the findings obtained from the study in Sharjah, UAE by Azizur Rahman et al. (2019) among female students that showed social media was the chief basis of information regarding BSE. This may be explained by the similar levels of mobile technology penetration in KSA and the UAE. Furthermore, participants were University students, who tend to be technology perceptive.

In this study, the frequency of the regular BSE practice was noticed low (61.4%). Poor BSE practice result is almost in accordance with the conclusion of study carried out earlier in Saudi Arabia among medical students in Makkah and in Qassim (Ibnawadh et al., 2017; Sindi et al., 2019). But it is lesser than that obtained from the study in Turkey conducted among female medical students (72.1%) (Rizalar et al., 2017), in Sudan (66.7%) (Idris et al., 2013) and among female nursing college students in Riyadh (66%) (Alsaif, 2004). On the other hand, it was higher than finding from Poland (48.1%) (Rizalar et al., 2017). In contrary, it remained more elevated than the result in the previous series among general population in Hail region (50%) (Ahmed et al., 2017), and in Taif among female medical students (15.2%) (Nemenqani et al., 2014).

In comparison to the previous result of study in the general population in Hail by Ahmed et al. (2017), this study had showed that, as the educational grade of the females’ rise, the prospective of BSE practices also rise. Among the participants who were aware of BSE, only 57.8% indicated that it should be carried out by the females over 20 years of age, 86.7% stated that it should take

place one week after the end of menstruation, and about 87.9% stated that it should be performed at regular monthly intervals. However, the studied female students by Nemenqani et al. (2014) in Taif medical college exhibited 89.2% had recognized that BSE is carried out every month.

This study revealed a higher percentage of participants knowing the accurate timing to perform BSE than the result found among medical students in Qassim by Ibnawadh et al. (2017) where it was 42.6%, this difference might be attributed to their being first year college students. Similar low result was obtained from study in Angola by Sambanje and Mafuvadze (2012) where 50% of medical students do not know the best timing of performing BSE. Awareness and practice of BSE following the ideal method has been verified to be critical for self-detection of any breast abnormalities and reporting to health care facilities for appropriate initiation of clinical interventions which includes diagnosis and treatment (Udoh et al., 2020). Only 68.7% knows the accurate method of BSE. These results show that, even if the students were aware of the existence of BSE, they lacked sufficient information, and they need counseling about knowing their normal breast tissue and spotting any change and abnormality in it. Koc et al. (2019) in the study of University students' knowledge and practice of BSE reached similar findings and conclusion.

Our results showed a positive association regarding accurate knowledge and practice ( $r=0.231$ ). There are some obstacles that prevent female individuals from practicing BSE, as reported earlier, which include not having time and being too busy, forgetting, not believing that it is beneficial, believing it is wrong to touch the breast, anxiety about the possibility of recognizing a breast mass, and embarrassing procedures (Ahmed and Shrief, 2019). In the current study the reasons for low proportion of practicing BSE remained as increase the turmoil, anxiety and embarrassing, as well as few of participants believe that the BSE is unhelpful or non-beneficial. Whereas, other revealed that the most common obstacles for not regularly performing BSE among nursing students were either lack of knowledge, forgetfulness, anxiety, dislike of touching the breasts, and time-consuming (Moussa and Shalaby, 2014).

### Study limitations

The main limitation in this study is the small number of participants. The main reason behind the small sample size is that, 40 male students as well as 40 female students are accepted in the College of Medicine, University of Hail annually. To remedy this dilemma, and to support the findings in this study we suggest conducting same study design in the future to include final year female students of the College of Medicine from several universities from neighboring regions in the KSA at the same time.

## 5. CONCLUSION

Findings of this study highlight the current knowledge gap in the practice of the BSE among female medical students. Some of them did not practice BSE, which suggests the need for education programs to change their attitude and behavior towards BSE. So, the incorporation of this issue in the medical school curriculum, as well as appropriately encourage students to perform a regular BSE are recommended. The students should communicate with their friends for spreading their knowledge about BSE in the community. We recommend conducting a community research regarding this era in the future after accreditation and implementation of BSE in the medical school courses to perceive its extent on the society.

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### Author's contribution

*FFA* is the main conductor of the project; he contributed in article conceptualization, main contributor to the introduction and discussion sections. *SAI* is the project coordinator, specified the content of the manuscript, and performed the data analysis, revised critically for important intellectual content. *AAEE* Participated in the design and data collection, identified the relevant articles for inclusion, main contributor in result section and reviewed all drafts. *AMAE* Participated in the design, and participated in writing discussion section. *HOIE* Participated in the design, writing introduction and revised critically for important intellectual content. *TMAH* participated in the design, coordination and revised critically for important intellectual content. All authors contributed to manuscript conceptualization, editing, and review for manuscript.

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**Conflict of interest**

The authors declare that there is no conflict of interest regarding the publication of this article.

**Informed consent**

Written & Oral informed consent was obtained from all individual participants included in the study. Additional informed consent was obtained from all individual participants for whom identifying information is included in this manuscript.

**Ethical approval**

Project bases were approved by the agreement (HREC00097/CM-UOH.02/20) from the Human Research Ethics Committee, College of Medicine, University of Hail, Saudi Arabia and its contents are merely the concern of the authors and do not certainly denote the authorized opinions of the College of Medicine in Hail University.

**Data and materials availability**

All data associated with this study are present in the paper.

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