RESEARCH ARTICLE

Relationship between Body Image and Breast Self-examination Intentions and Behaviors among Female University Students in Malaysia

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Abstract

   This study aimed to examine the relationship between body image satisfaction and breast self-screening behaviors and intentions. The sample for this cross-sectional study consisted of 842 female university students who were recruited from a number of public and private universities. Data were obtained between the months of November and December, 2013, using multistage random cluster sampling. Main research variables were breast cancer screening behavior and intentions, demographic factors, and the total scores on each of the Multidimensional Body-Self Relations Questionnaire (MBSRQ-Appearance Scales) subscales. Results of multivariate analysis showed that having higher satisfaction and more positive evaluation of appearance were related to having performed breast self-examination more frequently in the last year and intending to perform breast self-examination more frequently in the next year. Longitudinal research can potentially provide detailed information about overall body image satisfaction and breast cancer screening behavior among various communities.

Keywords: Body image - breast cancer - breast self-examination - female university students - Malaysia

Introduction

   Breast cancer incidence rate is growing rapidly in low and middle income countries in line with the population growth, aging and changes in underlying risk factors (Althuis et al., 2005; Parkin and Fernandez, 2006; Corbex et al., 2012). In addition, previous studies have shown that participation in regular screening has played a crucial role in reducing mortality rate from breast cancer among developed countries in the past years (Nelson et al., 2009; Nielsen and Gotzsche, 2011; Kwok et al., 2012). Further, the findings of previous studies have exposed that young girls' perception of breast cancer and breast self-examination (BSE) practice is low among them (Akhtari-Zavare et al., 2013; Al-Sharbatti et al., 2013). A host of individual and psychosocial factors may limit breast cancer preventive behaviors which are essential for women's health in a given community. As noted by Chait et al. (2009) in their study, the link between psychosocial variables constantly found to be related to breast cancer screening behaviors such as positive attitudes and self-efficacy, while no literature exists examining the relationships between body image and breast self- examination. As mentioned earlier by Chait et al. (2009), American Cancer Society (2007) stated that women should apply several forms of pressure in circular motion over their breast while they are doing breast self-examination properly. Besides, having positive body image allows women to admit all aspects of their body and such women feel confident to consider their body with care and attention (Jackson and Aiken, 2000; Tylka, 2011). Discomfort or dissatisfaction with one's body shape, size, or physical appearance is an imperative domain of disturbed body image (Cash and Smolak, 2011).

   Body image is a multidimensional construct which refers to how individual experiences or assesses his or her body in which its disturbance can be demonstrated as dysfunctional perceptions, cognitions, emotions, or behaviors that affect the quality of life (Cash and Henry, 1995; Cash and Deagle, 1997; Cash and Smolak, 2011; Ridolfi and Crowther, 2013). Body image disturbance may play a role in at least some cancer screening behaviors (Ridolfi and Crowther, 2013). A critical review of the literature investigating the relationship between body image and cancer screening behaviors was conducted by Ridolfi Crowther (2013) which revealed that a group of lesbian women admitted never engaging in breast self-examinations due to lack of motivations for doing these behaviors (Fish and Wilkinson, 2003). However, Chait et al. (2009) found that there was no significant relationship between body image and breast self-examinations behaviors and intentions. Nevertheless,

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studies on engaging in breast cancer screenings behaviors, particularly breast self-examination and body image disturbances are still limited in Asian countries. With regards to previous literature , the major aim of this study was to determine whether body image satisfaction affected breast self-examination behaviors or intentions in Malaysia. In this study, body image satisfaction refers to a total score on each of the Multidimensional Body-Self Relations Questionnaire (MBSRQ-Appearance Scales) subscaless.

The researchers proposed the following hypotheses that; *H_1: body image would be positively related to an increase rate of past breast self-examination behaviors; and H_2: body image would be positively related to having intention to practice breast self-examination more repeatedly in the next year.*

Materials and Methods

Procedure

A multistage cluster random sampling techniques was used to select the participants from nine universities in the Klang Valley and Selangor, Malaysia. Data were obtained between the months of November and December, 2013. The researchers administered 850 questionnaires in which 842 (99%) were successfully retrieved. The data collection was carried out by trained enumerators and research project manager (researcher) in which all the research ethics were taken into consideration. The study was already approved and sponsored by the University Research Ethics' Committee. This cross-sectional survey used both descriptive and inferential statistical techniques for data analysis with SPSS 21.

Participants

Participants were female students in the selected public and private universities in the Klang Valley and Selangor, Malaysia. Eligibility criteria were: (a) age ≥17 years; (b) ability to speak, read, and understand English; and (c) students without any breast disease and no history of cancer.

The participants aged ranges between 17 - 52 years old (M=22.51; SD= 4.82) which were students from different fields of studies such as Life Sciences, Physical Sciences, Engineering, Social Sciences and Art, and Medical and Health Care Sciences. Majority of the participants were undergraduate students (84.6%) followed by Master's students (12.9%) and PhD students (2.5%). In terms of ethnic background, Malay constitutes the majority (65.8%), followed by Chinese (21.6%), and then Indians (12.6%). Majority were Muslim (67.6%) followed by Buddha (15.8%), Christian (6.3%) and lastly Hindu (7.8%) and others (2.5%). Among the participants 64.1% were students from urban and 35.9% were from rural areas.

Measurement demographic variables

The following demographic factors were studied using a self-administered questionnaire: level of education, race, origin, monthly income and age.

Body image

To measure body image, this study adopted the Multidimensional Body-Self Relations Questionnaire (MBSRQ-Appearance Scales) developed by Cash (2000) and (Brown et al., 1990). This instrument has 34 items which were divided into five subscales namely; Appearance Evaluation subscale (APPEVAL), Appearance Orientation subscale (APPOR), the Body Areas Satisfaction Scale (BASS) subscale, Overweight Preoccupation (OWPREOC) subscale, and Self-Classified Weight (WTCLASS) subscale. The reliability coefficients of the subscales were fairly high and ranged from α=0.60 (Appearance Evaluation subscale), α=0.69 (Appearance Orientation), α=0.72 (Overweight Preoccupation subscale), α=0.87 (Self-Classified weight subscale), to α=0.89 (Body Areas Satisfaction Scale subscale).

Breast Self-exam Behaviors and Intentions

The instruments and all items were adapted from those applied in previous studies. The items to measure breast self-examination behavior (BSE) in the past year were already developed by Chouliara et al. (2004) and Chait et al. (2009). To verify past behavior, the instrument in the current study used a 5 points Likert scales (1=I never applied; 2=I applied whenever it came to my mind; 3=I applied once a year; 4=I applied every 5 - 6 months; and 5=I applied once a month). Further, the intention to practice breast self-examination (BSE) in the next year was previously developed by LuszczynskaSchwarzer (2003) and Chait et al. (2009). To determine future intentions, this study also used a 5 points Likert scale (1=I will never apply; 2=I will apply once a year; 3=I will apply three to five times a year; 4=I will apply six to eleven times a year; and 5=I will apply once a month).

Results

In this study the frequency of Breast Self-Examination (BSE) was asked for two different periods namely; breast self-examination behavior (BSE) in the past year and intention to practice breast self-examination behavior (BSE) in the next year. Out of 842 participants, 54.5 % (459) "never applied" BSE in the past year, 32.5% (274) applied BSE "whenever it came to their mind", 5.3% (45) applied BSE "once a year", 2.3% (19) applied BSE "every 5 - 6 month", and 5.3% (45) applied BSE "once a month". For the intention to practice breast self-examination behavior in the next year, 18.5% (156) of the respondents declared no intention to practice breast self-examination behavior based on their response "I will never apply", 32.4% (273) said "I will apply once a year," 18.9% (159) intended to apply BSE "3 - 5 times a year", 5.0% (42) intended to apply BSE "6 - 11times a year", lastly, 25.2% (212) admitted that they will apply monthly.

Differences between demographic characteristics on breast self-exam behaviors and intentions

With reference to BSE behaviors in the past, the ANOVA result has shown that, there was statistically significant differences between participants regarding different levels of education (undergraduate students, Master's and PhD students) $F_{(2, 839)}=13.797$, $p<0.05$

(see Table 1). In addition, Tukey HSD Post-Hoc test further revealed that the significant difference between master's students (M=1.41, SD=0.41) and undergraduate students (M=1.23, SD=0.32). The ANOVA analysis also indicated that there was a significant difference in race between Malay, Chinese and Indian on BSE behaviors in the past F (2, 83)=9.112, p<0.05 (see Table 1).

The Tukey HSD Post-Hoc test further specified the significant difference between Malay (M=1.28, SD=0.34) and Chinese (M=1.16, SD=0.29), and between Chinese and Indian (M=1.31, SD=0.41). Finally, the ANOVA result has shown that there was a significant difference between age groups of the participants on BSE behaviors F (2, 839)=13.624, p<0.05 (see Table 1). The Tukey HSD Post-Hoc test further revealed the significant difference between age group>30 years (M=1.24, SD=0.33), age group 31 - 40 years (M=1.50, SD=0.41), and age group>40 years (M=1.48, SD=0.43).

Regarding BSE intentions, the ANOVA result has shown that there was no significant differences in the levels of education (undergraduate students, Master's and PhD students) between participants F (2, 839)=2.009, p>.05 (see Table 2). The ANOVA result also has shown that there was no significant difference between age groups of the participants on BSE intention F (2, 839) 2.997, p=0.05 (see Table 2). However, the ANOVA analysis indicated that there was a significant difference in race between Malay, Chinese and Indian on BSE intensions F (2, 839)=11.991, p<0.05 (see Table 2). The Tukey HSD Post-Hoc test further showed that there was a significant difference between the Malay (M=3.01, SD=1.45), Chinese (M=2.42, SD=1.38), and Indian (M=2.80,

Table 1. ANOVA of Demographic Characteristics on BSE Behaviors

	n	Mean	SD	F	p
Level of Education					
Undergraduate Students	712.000	1.230	0.320	13.797	0.000
Master's Students	109.000	1.410	0.410		
PhD Students	21.000	1.340	0.370		
Race					
Malay	554.000	1.280	0.340	9.112	0.000
Chinese	182.000	1.160	0.290		
Indian	106.000	1.310	0.410		
Age Group					
< 30	789.000	1.240	0.330	13.624	0.000
30 - 40	40.000	1.500	0.410		
> 40	13.000	1.480	0.430		

Table 2. ANOVA of demographic characteristics on BSE intentions

	n	Mean	SD	F	p
Level of Education					
Undergraduate Students	712.000	2.820	1.450	2.009	0.135
Master's Students	109.000	3.060	1.390		
PhD Students	21.000	3.240	1.670		
Race					
Malay	554.000	3.010	1.450	11.991	0.000
Chinese	182.000	2.420	1.380		
Indian	106.000	2.800	1.460		
Age Group					
< 30	789.000	2.830	1.450	2.997	0.050
30 - 40	40.000	3.380	1.410		
> 40	13.000	3.150	1.140		

Table 3. Correlational analyses of the Multidimensional Body-Self Relations Questionnaire (MBSRQ-Appearance Scales) Subscales with BSE behaviors and intentions

	BSE Behaviors in pas	BSE intentions
Appearance Evaluation	0.141**	0.117**
Appearance Orientation	0.024	0.067
Body Areas Satisfaction	0.032	0.038
Overweight Preoccupation	0.053	0.034
Self-Classified Weight	0.029	0.033

SD=1.46).

Relationship between MBSRQ subscales and breast self-exam behaviors and intention

The multidimensional body-self relation questionnaire appearance scales (MBSRQ-AS) was used to measure the dimensions of body image satisfaction and BSE past behaviors and intentions. Table 3 shows the correlation matrix of multidimensional body-self relation questionnaire appearance scales (MBSRQ-AS) subscales, and BSE past behaviors and intentions. The Pearson correlation analysis revealed that appearance evaluation was significantly and positively related to BSE behaviors (r=0.141, p<0.01), thus failed to reject H1. But, appearance orientation (r=0.024, p>0.01), body areas satisfaction (r=0.032, p>.01), overweight preoccupation (r=0.053, p>0.01), and self-classified weight (r=0.029, p>0.01) were not significantly related to BSE behaviors, therefore, H1 was rejected.

Similarly, appearance evaluation has a significant and positive relationship with having intention to practice BSE more repeatedly in the next year (r=0.117, p<0.01), thus, failed to reject H2. In contrast, appearance orientation (r=0.067, p>0.01), the body areas satisfaction (r=0.038, p>0.01), overweight preoccupation (r=0.034, p>0.01), and self-classified Weight (r=0.033, p>0.01) were not significantly related to having intention to practice BSE, hence, H2 was rejected.

Multiple regression analyses of past breast self-examination behavior

Stepwise multiple regression analysis was performed to examine the significant contribution of the Appearance Evaluation Subscale to explain the percentage variance in the past breast self-examination behavior. The finding revealed that 6% (p<0.05) of variance in the past breast self-examination behavior was explained by Appearance Evaluation Subscale.

Similarly, based on stepwise multiple regression analysis, income and age significantly contributed to the past breast self-examination behavior. The results has shown that, income and age accounted for 6.7% (p<0.05) and 4.9% (p<0.05) of variance in the past breast self-examination behavior respectively.

Multiple regression analyses of intention to practice breast self-examination behavior

Stepwise multiple regression analysis was conducted to determine the significant contribution of the Appearance Evaluation Subscale to explain the percentage variance

in future intention to practice breast self-examination behavior. The result indicated that 2.8% (p<0.05) variance in future intention to practice breast self-examination behavior was explained by Appearance Evaluation Subscale.

Also, the stepwise multiple regression analysis further revealed the significant contribution of income and age for intention to practice breast self-examination behavior in the next year. The findings indicated that, income and age accounted for 3.2% (p<0.05) and 1.9% (p<0.05) of variance in intention to practice breast self-examination behavior in the next year respectively.

Discussion

Breast self-examination is a vigorous screening method for early detection of breast lumps, particularly breast cancer among women. Previous study has shown that efforts should be directed at improving early presentation rates among Asian women (Ghazali et al., 2013). Breast self-examination (BSE) behavior and its sustaining among young women need to have high body image satisfaction. The current study investigated the relationship between body image (MBSRQ-Appearance Scales) subscales and breast self-examination behaviors and intentions among female university students in Malaysia. In line with the proposed hypothesis, Appearance Evaluation subscale (APPEVAL) was significantly related to female students' BSE behaviors and intentions. In contrast, Appearance Orientation subscale (APPOR), the Body Areas Satisfaction Scale (BASS) subscale, Overweight Preoccupation (OWPREOC) subscale, and Self-Classified Weight (WTCLASS) subscale were not significantly associated to students' behavior and intention to practice BSE.

This finding supported the study conducted by Clark et al. (2009) Clark, Rogers, and Armstrong, (2009) and FishWilkinson (2003) that found a significant relationship between body image satisfaction and breast self-examination behaviors among women. However, the instrument used in these studies was not adequate enough to capture body image satisfaction. In contrast, the finding of this study is not consistent with the study conducted by Chait et al. (2009) which revealed that body image (MBSRQ subscales) was not significantly related to breast self-examination behaviors and intentions among women enrolled as a non-cancer group at a medical cancer in Tampa, Florida.

The difference between the previous and current findings may be due to awareness among young women students in terms of psychosocial and educational influences. It might be argued that young women university students evaluate their overall appearance more often in order to attain body image satisfaction.

Although, this study is characterized by some limitations in methodology due to the use of cross-sectional data and the participants were students which could be influenced by peer group, technology, and social media that limits the generalizability of the results. Further research should also be investigated to reduce the bias of the retrospective recall of health behaviors studies.

In addition, the effect of body image disturbance would be addressed on various health behaviors and its specific mediating pathways. Research also suggests developing future community or group-based interventions to study on overall body image satisfaction and women's breast health behaviors among various populations.

Baased on results of the current study, we concluded that the score on the items assessing satisfaction with students' appearance was positively related to measures of past BSE behaviors and future BSE intentions among female university students in Malaysia which may inform the attempts of healthcare practitioners and policy makers. Cognitive behavioral health and group-based interventions concerning body image satisfaction and breast cancer self-screening behaviors may have health consequences among youth and women. Further, personal motivation to seek out and engage in individual preventive actions for breast cancer prevention among Asian women is a timely, high priority target with practical implications for health promotion. This study also provides a vision on psychological knowledge among health professionals towards supporting breast cancer secondary prevention efforts for community development in Asian countries (Ahmadian and Abu Samah, 2013; Ahmadian and Abu Samah, 2014).

Despite the limitations, this study has both theoretical and applied implications regarding increasing the scope of body image and emphasizing on this multidimensional construct towards promoting preventive behaviors. Educational campaigns can be organized by Faculties of Medicine in Malaysian universities joint ventured with the Universities Health Centers to raise awareness on breast cancer among female students. A collaborative effort with Ministry of Health is also an appropriate move for this endeavor in order to improve breast health status among female community students in higher learning institutes in the country.

Acknowledgements

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