

Breast Self-Examination Self-Efficacy Scale: Translation and Validation in Pakistani (Urdu) Version

Sumaira Naz¹, Sureeporn Thanasilp^{2*}, Wasinee Wiserith³

¹Chulalongkorn University/Faculty of Nursing, Thailand; Institute of Nursing, Wah Medical College, Wah Cantt, Pakistan

²Asian Wisdom Care Research Unit, Chulalongkorn University, Bangkok, Thailand

³Faculty of Nursing, Chulalongkorn University, Thailand

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ABSTRACT

Introduction: There is a necessity of Pakistani (Urdu) translation and validation of Breast self-examination (BSE) self-efficacy scale to access high-risk women confidence in doing self-examination of breast as screening measures. The study aim is to translate and validate breast self-examination self-efficacy scale in Pakistani high-risk women.

Methodology: The 12 items BSE Self-Efficacy scale was translated and validated by using Brislin (1970) and Sperber (2004) methodology. Psychometric properties of Pakistan version BSE Self-Efficacy scale were assessed among 120 women from oncology department of the tertiary care hospital in Pakistan selected with simple random sampling. CFA (Confirmatory factor analysis) was done for measuring the construct validity and reliability was assessed by Cronbach alpha coefficient. Demographics characteristics were analysed by descriptive statistics with SPSS and Mplus software was used for CFA.

Results: The translated version showed semantic equivalence to the original English version. CFA results indicated that all 12 items were consistent with a unidimensional scale ($\chi^2=464.3$, $p > .05$, $df=54$, $RMSEA = .025$, $CFI=.965$, $TLI=.913$, $SRMR=.062$), Cronbach's α value .96, demonstrating high reliability.

Conclusion: The twelve-item BSE self-efficacy scale Pakistani version established appropriate translation, validity and reliability in measuring confidence of doing BSE.

Keywords: Breast self-examination, Self-efficacy, Validity, Reliability

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***Correspondence:** Sureeporn Thanasilp (Email: s_thanasilp@hotmail.com)

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INTRODUCTION

Breast cancer is the second most prevalent type of cancer globally and it is a leading cause of fatalities as well as pathological consequences.^{1,2,3} 2.3 million women were diagnosed having breast cancer (BC) in 2020 and out of these 685,000 women died.^{2,3,4} In Asia there has been reported the highest rate of incidence of BC in Pakistan, which ranks 8th globally in deaths caused by BC. Due to high incidence an approximately one in nine (1 in 9) women afflicted with breast cancer.^{5,6} Also 23.8% Pakistani women were high-risk having a family history of breast cancer.^{5,7,8} Furthermore, almost 95.2% among these had one family member affected. Mother was the most common relation affected by breast cancer (47.6%).⁸

Breast self-examination (BSE), recognized as effective screening tools for BC,^{9,10,11,12} and cost-effective method in low-income countries.^{9,10,13} Self-efficacy (SE) or women's ability to perform BSE confidently.^{14,15,16,17} Self-efficacy of women to perform BSE directly related with BSE practice^{17,18,19} with evidence supported odd ratio (OR): 1.119, 95% CI: 1.056-1.185, $p < 0.001$.¹⁴

Lewis and Sainitzer BSE Self-Efficacy scale²⁰ is one of reliable 12 items self-reported questionnaires for assessment of confidence of women in performing BSE for early diagnosis of BC. The internal consistency alpha coefficient of scale was .96 and .65 inter item mean correlation. The total value of item correlation ranges between .67 to .86.²⁰ The scale was modified, translated and validated in various languages and used in diverse aged group women without family history of breast cancer, which allow its application in cross culture context.^{17,18,21}

Therefore, the research aim is to validate and translate the modified adaptation of Lewis and Sainitzer BSE self-efficacy scale in Pakistani (Urdu) version for measuring high-risk women confidence in performing BSE for early diagnosis of BC.

METHODOLOGY

Study design: The data for this study was extracted from an ongoing randomized controlled trial titled "Breast Health Education Program Based on Culture to Determine the Effect of Breast Self-Examination Practice in Pakistani High-Risk Women."

The instruments included in this study were Lewis and Sainitzer breast self-examination self-efficacy scale and demographic questionnaire. The demographic questionnaire included questions about women age, educational level, marital status, menstrual cycle history. While Lewis and Sainitzer BSE self-efficacy scale composed of 12 items was composed of a score from 0 to 100 through 50, depicting from "cannot do at all" to "certainly can do", through "moderately can do", respectively.^{19,20}

Sample: The participants of study were recruited from oncology department in a tertiary care hospital in Pakistan with simple random sampling method. For sample size, factors analysis involves a 10 or 15, with a minimum of 10 cases for each item of the instrument.²² Therefore, Lewis and Sainitzer BSE self-efficacy scale composed of 12 items, the sample size in this study should range from 120 to 180. It also recommended that sample size of at least 100 cases is compulsory for doing factor analysis.²³ Thus 120 respondents were selected for the study. Participants provide written informed consent and complete the questionnaire while attending the inpatient and outpatient of the hospital.

Inclusion Criteria: Female participants aged 20-50 years, Able to communicate in Urdu (both verbal and written), Participant mother already have diagnosis of BC and under treatment, not having pregnancy

Exclusion Criteria: Previously participated in breast awareness program and having any mental disorder.

Institutional Review Board: Before the start of the recruitment of the participants for study, the researcher taken approval from ethical committee of the institute in Pakistan who has attachment with hospitals for clinical practice. Institutional Review Board reference number was IAHS/WMC/789/008/Admin. Consent form was also given to the participants who meet the eligibility criteria and agreed to part of the study.

Data Collection: The collection of data was completed in 5th august to 25th august 2024 for this study. Two research assistants, one head nurse from the hospital and one nursing instructor, were given the training on the study's objectives, methodology, instruments, ethical considerations, and data collection procedures. Both research assistants recruited the eligible participant. The principal researcher rationalized the study's goals, assured confidentiality, and obtained signed consent forms from the participants who agreed to take part in the research. The participants taken the 10 -15 minutes to complete a self-administered questionnaire.

Statistical Analysis: For data analysis, Mplus version 7.4 and SPSS version 23 were utilized. For the participant's demographic details, descriptive statistics were employed. The Urdu version of the BSE self-efficacy scale was evaluated for its psychometric qualities using construct validity and reliability. The model fit and construct validity was assessed by applying CFA (Confirmatory Factor Analysis), using five statistical criteria: SRMR- Standardized root mean square residual was lower than 80, and non-significant chi-square (χ^2) ($p > .05$) was observed.²⁴ Cronbach's alpha coefficients has been used to evaluate the internal reliability of the Pakistani (Urdu) version; values greater than .70 were deemed acceptable.²²

Translation Process: After gaining permission for use and translation of instruments of modified ver-

sion from author Sangchan et al (2008).¹⁹ The back translation technique was used to translate the instrument,²⁵ and instrument was also validated by the experts.²⁶ The steps to translate the instrument were included,²⁵

1. In forward translation, instrument was translated from English into Pakistani (Urdu) by a qualified translator (with a certificate in teaching English literature and English to speakers of languages other than English), and it was also translated by a certified nurse with a master's degree in adult nursing care.
2. Furthermore, an assistant professor from field of nursing having fluency in both Urdu and English languages checked the Urdu version for grammatical mistakes and vague or difficult terminologies.
3. After that, two more translators (a nurse with a master's degree in field of nursing and an official certified translator) translated the Pakistani version backward while being "blinded" to the original version of English.
4. All experts who were involved in process of translation examined the translated as well as original versions of the instruments for concept equivalency and found that there were no grammatical errors or differences in meaning between the two versions.

In addition, five additional experts (who were not involved in the translation process), evaluated the translation equivalency between each question in the final Pakistani (Urdu) and original English versions of the instrument to ascertain its semantic equivalency. These experts included three educators for oncology nurses, one female oncologist, and one qualified translator. The Likert scale, which ranges from 1 to 7 (1 = Extremely Similar/ Highly Comparable to 4 = Moderately Similar/Moderately Comparable and 7 = Not at All Similar / Not at All Comparable), was applied to evaluate the language comparability and the interpretability similarity. The translation should be properly examined if the average score obtained was more than 3 (1 being the greatest and 7 being the least level of agreement), and less than 3 indicates that the reviewers did not think there was a significant interpretation issue.²⁶

For this study, BSE self-efficacy measurement has 1.50 interpretive similarity score and 1.45 linguistic comparability score. These results don't require additional analysis or correction because they satisfy the acceptable criteria. After, acquiring the translation into Pakistani version, pretesting was conducted to assess the questionnaire on 30 high-risk adult women with similar characteristics. On a dichotomous scale with options for clear and unclear, each participant was asked to score the questions. There were no challenges to comprehension associated with any of the questionnaire's questions. Ultimately, it could be concluded that each item had adequate and evident validity.

RESULTS

Sample characteristics: Sample was composed of 120 high risk adult Pakistani women those mothers having diagnosis of breast cancer and were under treatment at tertiary care hospital. The high-risk women's average age was 24.5 years (SD= 5.277). Most participants (66.7%) were in the 20-25 years group. The level of education indicated that 68.3% of participants have metric level education and most of them women in study were unmarried (66.7%). Results also indicated that 84.6% women with regular menstrual cycle (Table 1).

Table 1: Sample Demographic Characteristics

Characteristics	Participants (%)
Age	
20-25	80 (66.7)
26-31	19 (15.8)
32-37	21 (17.5)
Educational level	
Metric	82 (68.3)
Above Metric	38 (31.7)
Marital Status	
Married	40 (33.3)
Un-married	80 (66.7)
Menstrual cycle	
Regular	101 (84.6)
Irregular	19 (15.8)

Translation and Pilot Testing: Participants in the pilot testing demonstrated a thorough comprehension of the Pakistani (Urdu) questionnaire and reported that rating each item was simple. The questionnaire was deemed satisfactory by the participants, and no suggestions for more data were provided. Following pilot testing, the final version was accepted with no more modifications.

Psychometric properties

Reliability: The reliability was measured by Cronbach's α for BSE self-efficacy scale in Pakistani version, relinquished a value of .96, falling within the range considered adequate to good. Moreover, the 12 items' Correlated Item-Total Correlation varied from .770 to .859. The range indicates very good discrimination, surpassing the recommended threshold of .30.²⁷ (Table 2)

Construct Validity: The findings indicated that the 12-item BSE self-efficacy scale in Pakistan (Urdu) version demonstrated a unidimensional structure with good fit, supporting its validity for measuring confidence in performing BSE for early diagnosis of BC in high-risk women ($\chi^2=464.3$, $p > .05$, $df=54$, $RMSEA =.025$, $CFI=.965$, $TLI=.913$, $SRMR=.062$). All items in the BSE self-efficacy scale Pakistan (Urdu) version standardized estimations (factor loadings) exceeding .40, indicative of a strong association with the underlying construct.²⁴(Figure 1)

Table 2: Reliability and item descriptions

Item	Item Content	Mean ± SD	Correlated Item Total Correlation	Value of Cronbach Alpha if item deleted
S1	Looking at the breast and observing an abnormal sign.	52.58±29.77	.792	.963
S2	Observing some changes from a normal breast.	54.50±28.52	.770	.964
S3	Using the part of the fingers to palpate the breast.	57.42±31.15	.840	.962
S4	Using the part of the fingers to palpate entirely breasts and nipples.	57.67±31.05	.780	.963
S5	Palpating the entire breasts by circular movement.	58.58±29.88	.859	.961
S6	Palpating the lymph nodes at the armpits and the clavicle area.	56.83±31.70	.828	.962
S7	Feeling to detect the normal breast.	59.92±30.22	.852	.962
S8	Feeling to detect the abnormal breast mass.	57.00±32.27	.847	.962
S9	Telling the physician, "I found an abnormal sign in my breast."	61.08±30.84	.847	.962
S10	Telling the physician, "I am anxious about something change that I found during performing BSE."	60.75±32.21	.820	.962
S11	Asking the physician to agree that I found an abnormal sign in my breast.	62.67±30.99	.814	.963
S12	Know how to do if I found an abnormal sign in my breast.	61.50±32.17	.799	.963

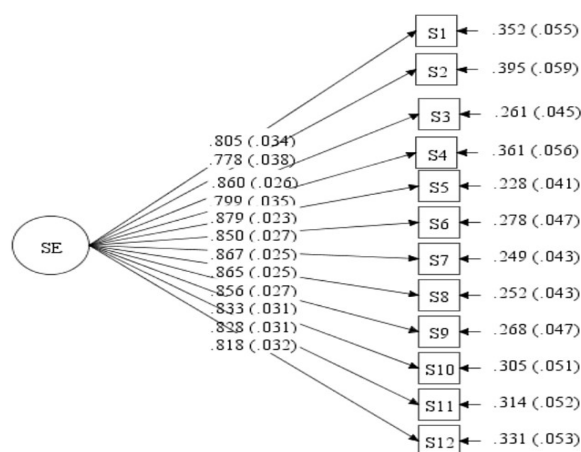


Figure 1: Construct Validity of BSE self-efficacy scale in high -risk women

DISCUSSION

The study aim was to measure and translate the psychometric characteristics or properties of BSE self-efficacy scale in Pakistani (Urdu) version for high-risk adult Pakistani women with mothers having BC. The results demonstrated that the BSE self-efficacy scale Pakistani (Urdu) version was easily understood, culturally appropriate, and equivalent to the original English version. The BSE self-efficacy Pakistani (Urdu) version truly indicates high internal consistency and psychometric validity. The CFA confirmed that the 12 items formed a unidimensional questionnaire accurately measuring confidence of high-risk women in performing BSE. These findings were consistent with previous studies using this instrument.²¹

The internal consistency of the BSE self-efficacy scale in Pakistani (Urdu) version, indicated by Cronbach’s α of .96, was within a good range. This finding was consistent with the original version which illustrated Cronbach’s α for the 12-item CCS was .94 in the adult women sample,¹⁹ .84 for the 15-item BSE self-

efficacy Bangladeshi (Bangali) version,¹⁷ .91 for BSE self-efficacy Indonesian (Bahasa) version,¹⁹ supporting the reliability of the scale across different cultural contexts. The slight increase in internal consistency in the Pakistani version may be attributed to cultural differences and high- risk women.

In confirmatory factor analysis all items had factor loadings more than .40.²⁴ The study revealed consistency in internal consistency between the 12-item and 15-item versions. The item deleted approach yielded no significant change in the alpha value., the 12-item BSE self-efficacy scale Pakistani (Urdu) version was recommended to apply to high-risk women as previous version was used in women without having family history for BC.

STRENGTHS AND LIMITATIONS

The study indicated the first Pakistani (Urdu) version of BSE self-efficacy scale for high-risk women for BC to measure confidence of women in performing BSE. The results indicated strong psychometrics properties of scale. This was the first time the scale was used on high-risk women; all preceding versions were used on women who were of reproductive age, with no particular emphasis on the presence of any type of the family history of breast cancer, specifically in the case of a mother who had such disease. However, sample was at minimum requirements need to evaluate for large sample and also in reproductive age Pakistani women without family history of breast cancer to achieve more clarity in cultural context.

IMPLICATIONS FOR PRACTICE

Currently there is no instrument for assessment of BSE self-efficacy for high-risk Pakistani women, having a valid, reliable and practical measurement is important to maintain confidence in performing BSE

which leads towards regular practice of BSE. which, in areas with limited resources, is among the efficient methods practiced for early diagnosis of breast cancer. The tools could be regularly used in clinical setting by nurses to assess the confidence of women for performing BSE and identify their concerns which can be solved, and BSE practice can be improved in high-risk women.

CONCLUSION

The study revealed that the BSE self-efficacy scale in Pakistani (Urdu) version is suitable, brief, adequate and valid instrument to assess the confidence with breast self-examination among Pakistani women which are at the higher risk of development of breast cancer.

AVAILABILITY OF DATA AND MATERIALS

The datasets used or analyzed during the current study are available from the corresponding author on request. Urdu version of Brest self-examination self-efficacy scale is also attached, copywrite is available for all.

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