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Psychometric properties of the Breast Cancer Awareness Measurement among Chinese women: a cross-sectional study

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ABSTRACT

Objectives To perform the cross-cultural adaption of the Breast Cancer Awareness Measurement (BCAM) and to test its psychometric properties among Chinese women.
Design This is a cross-sectional study.
Settings This study was conducted in communities, schools and institutions in Changchun, Jilin Province, China.
Participants A total of 328 women voluntarily participated in and completed the Chinese version of the BCAM (C-BCAM), resulting in an effective response rate of 91.1%.
Primary and secondary outcome measures Psychometric properties, including item analysis (the extreme group comparison and item-total correlations), content validity (item-level content validity index (I-CVI) and scale-level content validity index (S-CVI)), construct validity (exploratory factor analysis (EFA) and confirmatory factor analysis (CFA)) and internal consistency (Cronbach's α and test–retest reliability), were measured.
Results The C-BCAM has excellent internal consistency (Cronbach's α=0.90), with alpha coefficients of 0.88, 0.84 and 0.94 for its three domains. The test–retest reliability coefficient was 0.72. The I-CVI ranged from 0.86 to 1.00, and the S-CVI was 0.92. CFA showed that the three-factor model explained 51.56% of the total variance, with a good model fit (likelihood ratio χ^2/df=1.86, incremental fit index=0.94, comparative fit index=0.94, goodness-of-fit index=0.84, adjusted goodness-of-fit index=0.80, standardised root mean square error of approximation=0.06 and root mean square residual=0.05).
Conclusions The C-BCAM has satisfactory validity and reliability and is a culturally appropriate and reliable tool for evaluating breast cancer awareness among Chinese women. This reliable instrument can help researchers and health professionals evaluate women's knowledge about the symptoms and risk factors of breast cancer and identify their barriers to seeking medical help. It also helps healthcare providers identify women with poor breast cancer awareness and encourage them to perform screening practice.

Strengths and limitations of this study

- ► This study is the first to introduce and validate the Chinese version of the Breast Cancer Awareness Measurement (C-BCAM) to assess breast cancer awareness.
- ► A comprehensive analysis was conducted to test the psychometric properties of the C-BCAM.
- ► The limitations of the sample may make the results less representative of all Chinese women.
- ► Breast cancer awareness assessment based on participants' self-reports may lead to partial bias.
- ► The applicability of the C-BCAM needs to be verified in larger and more regional samples.

INTRODUCTION

Breast cancer is the most commonly diagnosed cancer and the leading cause of cancer-related death among women. The Global Cancer database provided a report on the global burden of cancer, reporting that in all surveyed areas, the number of new breast cancer cases was almost 2 088 849 (11.6%) and the number of breast cancer deaths was 626 679 (6.6%).[1] In the USA, breast cancer accounts for 30% (266 120) of all newly diagnosed cancers and 14% (40 920) of all cancer deaths in women.[2] Similarly, there were 279 000 new breast cancer cases in China.[3] Additionally, statistics in 2014 showed that the incidence ($34.4/10^5$) and mortality ($8.5/10^5$) of breast cancer in northeast China were the highest.[3] Notably, a diagnosis of breast cancer aggravates women's depressive symptoms and significantly decreases their physical functioning, mental health and quality of life.[4] In addition, body changes caused by treatment can affect women's lives, including their sexual functioning, body image and intimate relationships, which can dramatically alter their life satisfaction.[5] Despite significant advances in related research, breast cancer remains a challenging health concern and a top priority for biomedical research.[6] Thus, there is an urgent need to develop measures to improve the prognosis of breast cancer.

It has been widely recognised that breast cancer screening can increasingly reduce mortality over time and improve the prognosis of patients.[7] Previous studies have

demonstrated that early detection and screening can substantially increase the detection rate of small breast tumours to 68% and effectively decrease breast cancer mortality by approximately 20%.[8 9] Breast cancer screening aims to find breast cancer while it is still curable to reduce unnecessary breast cancer-specific mortality.[10] The Chinese Anti-Cancer Association, the Committee of the Breast Cancer Society and the National Comprehensive Cancer Network have recommended that women should perform regular breast cancer screening.[11 12] Meanwhile, guideline[12] recommends that the methods of breast cancer screening should include breast self-examination, clinical breast examination, mammography, breast ultrasonography and MRI. Although this guideline suggests that breast self-examination and clinical breast examination may not reduce the mortality rate of breast cancer and increase the detection rate, these methods are still positively significant in improving women's awareness of breast cancer screening early diagnosis of breast cancer[12 13]; thus, they are still recommended as desirable screening methods. Therefore, the effectiveness of screening has been largely recognised and affirmed. Notably, increased breast cancer screening has led to an increase in overdiagnosis of breast cancer (an estimated 11%–19% of all breast cancers) in particular invasive and ductal carcinoma in situ or early stage cancers.[14] Therefore, healthcare sector and health professionals should provide women invited for screening with information in a transparent and objective manner so that they can make informed decisions.[15]

However, a lack of breast cancer screening awareness, perceived risks, less concern about screening and perceived screening barriers may affect individuals' screening practices.[16–18] Women's health awareness of cancer and cancer screening is the key factor affecting their screening behaviour.[19] Breast cancer awareness refers to whether women have a good knowledge of breast cancer and the ability and confidence to detect changes in their breasts and to report them to healthcare providers in a timely manner.[20] It is associated with a lack of breast cancer knowledge, fear of the results, a lack of support from the surrounding environment and the screening cost.[21 22] Therefore, a comprehensive assessment of women's breast cancer awareness, including an accurate analysis of their knowledge of breast cancer, screening barriers and other contents, can help health professionals identify individuals with poor breast cancer awareness and conduct targeted interventions. It also facilitates joint screening decisions between individuals and healthcare providers, which in turn helps to improve women's health and quality of life and to reduce the adverse effects of breast cancer.

The Breast Cancer Awareness Measurement (BCAM), validated by Linsell *et al*,[23] is a reliable instrument for assessing breast cancer awareness in UK women. It is easier to understand than adult books and performs well among young and old adult women.[23] It focuses on specific early breast cancer signs and perceived barriers to breast cancer screening, differentiating it from other available instruments.[24 25] Several psychometric studies have evaluated the properties of the BCAM in a diverse population, and all of them have reported satisfactory validity and reliability.[25–27] This suggests that the BCAM is an effective tool for evaluating women's breast cancer awareness. However, there are no studies in which the BCAM is culturally adapted for China to form an instrument for assessing Chinese women's awareness of breast cancer, and China lacks standardised tools. Therefore, the purpose of this study is to conduct a cross-cultural adaption and psychometric validation of the BCAM in Chinese women.

METHODS

Participants

Screening guidelines[12] suggested that regular breast cancer screening should be given to both women with general risk and those at high risk of breast cancer. And the sample population of the other BCAM versions[25–27] in other countries were the general community women. Therefore, our study also adopted a convenient sampling method and recruited general community women to participate in the survey.

For reliability and validity testing and factor analysis, the sample size should be 5–10 times the number of items in the scale and should be >300 participants.[28 29] At the same time, an invalid response rate of 10%–20% should also be considered; thus, a total of 360 questionnaires were issued. Therefore, cross-sectional descriptive research was conducted on 360 asymptomatic women from communities, schools, institutions and other places in Changchun, Jilin Province, China, from January to April 2019. To ensure sociodemographic heterogeneity, participants with different ages, occupations, educational levels and other characteristics were purposefully selected. The inclusion criteria were as follows: (a) ≥18 years of age[25 27] (while most breast cancer screening should begin at age 40, the assessment of breast cancer awareness should not be limited to women older than 40 years); (b) no communication barriers (deafness or blindness); (c) no diagnosis of breast cancer and (d) no diagnosis of severe cardiovascular disease or mental disturbance. All participants were informed of the aim of this study and had the right to refuse to participate or withdraw from the study without consequence.

The Breast Cancer Awareness Measurement

Based on the Cancer Awareness Measure (CAM),[30] Cancer Research UK, King's College London and University College London jointly developed the Breast Module-CAM (BCAM) to evaluate women's breast cancer awareness. Linsell *et al*[23] verified the reliability and validity of the BCAM. The instrument includes seven domains: (1) knowledge of symptoms; (2) confidence, skills and behaviour in relation to detecting a breast change; (3) anticipated delay in contacting the doctor; (4) barriers to

seeking medical help; (5) knowledge of age-related and lifetime risk; (6) knowledge of the NHS Breast Screening Programme and (7) knowledge of risk factors. Based on the advice of experts, we focused on four domains (domains 1, 2, 4, 7) that applied to the Chinese population in this study, while completely unsuitable domains, such as the NHS Breast Screening Programme domain, were not considered. For the cultural adaption and application of the BCAM, the author of the original scale, Dr Linsell, was contacted, and authorisation was obtained.

Instrument development

The C-BCAM was developed and evaluated in two phases: (I) the BCAM was translated into the C-BCAM to verify its content validity and (II) the reliability and validity of the C-BCAM were tested.

Phase I: translation, expert consultations and cognitive interviews

With the permission of the original authors, in this study, the BCAM was translated into Chinese.[23] Brislin translation theory[31] was used to forward-translate and back-translate the BCAM. First, two translators independently translated the English version of the BCAM into Chinese, and then, three researchers examined and adjusted it due to the differences between the original and translated versions and reached a consensus on the forward-translated version. Then, two other translators separately back-translated the forward-translated version into English and cross-examined and finalised it as the back-translated English version. Afterwards, six researchers discussed and revised the translated version based on the BCAM for conceptual, idiomatic, semantic and content equivalence until they all agreed on the translation.

Subsequently, a panel of 14 experts, consisting of 6 educational experts and 8 clinical experts, was invited to complete two rounds of expert consultation. The experts were asked to evaluate the content validity of each item in the translated version and to provide feedback. Meanwhile, 15 women were recruited to participate in cognitive interviews to understand their awareness of breast cancer and to assess their attitudes towards breast cancer screening. The results of the expert consultations and cognitive interviews were incorporated into the revision and validation of the translated version, and the preliminary version of the C-BCAM was finalised. This version included four domains with 30 items.

Phase II: psychometric property evaluation

A pilot survey of the preliminary version of the C-BCAM was conducted with a sample of 20 women in Changchun, Jilin Province, China, who were invited to assess whether the preliminary version of the C-BCAM was easy to understand. Based on the evaluation results, the wording was modified. Then, the psychometric properties of the preliminary version of the C-BCAM were evaluated in terms of item analysis, content validity, construct validity, internal consistency and test–retest reliability.

Data collection

The researchers adopted two methods for data collection: online data collection through SO JUMP,[32] a professional platform and on-site data collection in the form of paper questionnaires. The online data collection process included the following: first, the questionnaire was input into a computer to develop an electronic version of C-BCAM. Second, the e-questionnaire was sent online to individuals via the WeChat application.

Data analysis

Data were analysed using SPSS V.25.0. The categorical variables were counted using frequency and percentages, the continuous variables had a skewed distribution and the median (M) and IQR were used; $p<0.05$ was considered to be statistically significant.

Item analysis was conducted based on the following analyses: (a) extreme group comparison (items should discriminate between the scoring groups of the upper 27% and lower 27%)[33] and (b) item-total correlations (the correlation between the score of each item and the total score of the scale). Items with a critical ratio (CR) >3.0 or an item-total correlation between 0.30 and 0.80 were retained.[34,35] Content validity was tested using the content validity index, including the item-level content validity index (I-CVI) and the scale-level content validity index (S-CVI). An I-CVI of 0.78 or higher and an S-CVI of 0.80 were considered acceptable.[36] If the correlation between the factors is >0.30, then principal factor analysis with the oblique rotation method is used for exploratory factor analysis (EFA); otherwise, the orthogonal rotation method is used.[37] Additionally, confirmatory factor analysis (CFA) was conducted using AMOS V.23.0. The Kaiser-Meyer-Olkin test and Bartlett's test of sphericity should be performed before CFA to determine whether factor analysis is suitable. When the Kaiser-Meyer-Olkin value ≥0.6 and Bartlett's test of sphericity is significant at $p<0.05$, the scale is suitable for conducting factor analysis.[38] In this study, the sample population was divided into two parts based on the coding order of questionnaire collection to conduct EFA (n=118) and CFA (n=210). In addition, internal reliability and stability were tested through Cronbach's α and test–retest reliability, respectively. Cronbach's α, with an α value between 0.80 and 0.90, suggests an excellent internal coefficient.[39] Test–retest reliability (2-week interval)[35] in a convenience sample of 20 was examined using the Pearson's correlation coefficient.

Patient and public involvement

No patient was involved. In the process of expert consultation and scale translation, clinical experts, educational experts and translators were regarded as public participants involved in this study. No participants were involved in this study during the development, design or execution process of this instrument. The results of this study will be made available to members of the public interested in this subject.

RESULTS

Characteristics of the participants

A total of 360 women were recruited for this study, and based on the inclusion criteria, 328 completed the questionnaire, resulting in a 91.1% response rate. The age of the participants varied from 19 to 67 years, with a median of 35. In general, the majority of the women had a spouse (60.4%), had a specialty/bachelor's degree (48.2%), did not have a family history of breast cancer (97.3%), did not receive breast self-examination training (71.3%), did not have abnormal breast symptoms (68.3%), did not have a breast disease diagnosis (71.0%) and had not been screened in the past 2 years (53.0%). The sociodemographic characteristics of the participants are presented in table 1.

Psychometric analysis

Item analysis

Based on the results of the expert consultations and cognitive interviews, 13 items from the original scale were deleted, 2 items were merged and 11 new items were added. The preliminary version of the C-BCAM included 30 items and 4 domains.

Based on the results of the extreme group comparison, the CR value of all items exceeded 3.0; thus, 30 items were temporarily retained. Then, the Spearman's correlation method was adopted to calculate the correlation between items and the total score. The coefficients of 7 items were <0.3; however, the correlation coefficients of items 9, 10 and 12 were very close to 0.3 and temporarily retained. Therefore, the preliminary version of the C-BCAM contained three domains consisting of 26 items (table 2).

Validity

Content validity

After the first round of expert consultations, the second round of expert consultations was conducted to assess the content validity of the preliminary version of the C-BCAM. The I-CVI was calculated based on the number of people giving an expert rating of 3 or 4 for each item, and the S-CVI was calculated from the average of the I-CVI of all items. The results showed that the I-CVI ranged from 0.86 to 1.00 and that the S-CVI was 0.92, indicating that the C-BCAM has excellent content validity.

Construct validity

The Kaiser-Meyer-Olkin measure of the C-BCAM was 0.78, and Bartlett's test of sphericity was also satisfactory (p=0.00), which means that the 26-item C-BCAM was suitable for conducting factor analysis. Use of the oblique rotation method extracted six factors with eigenvalues >1.0 (7.23, 3.89, 2.29, 1.47, 1.13 and 1.05),[40] and the total variance explained by these factors was 65.58%. According to the screen plot (figure 1) and the factor structure of the original scale,[40] we decided that the number of common factors extracted from the scale was three (7.23, 3.89, 2.29), and these three factors explained 51.56% of the total variance (figure 2).

Table 1 Characteristics of the included participants (n=328)

Characteristics	Median (range)/N (%)
Age, years	35 (19~67)
Employment status	
Employed	162 (49.4)
Unemployed	103 (31.4)
Students	63 (19.2)
Marital status	
Without spouse	130 (39.6)
With spouse	198 (60.4)
Education level	
Junior school or below	73 (22.3)
High school/specialised secondary school	35 (10.7)
Specialty/Bachelor	158 (48.2)
Postgraduate or above	62 (18.9)
Average income (¥, monthly)	
<2000	71 (21.6)
2000~4000	121 (36.9)
4001~6000	59 (18.0)
>6000	77 (23.5)
Family history of breast cancer	
Yes	9 (2.7)
No	319 (97.3)
Family history of cancer	
Yes	32 (9.8)
No	296 (90.2)
History of breast self-examination training	
Yes	94 (28.7)
No	234 (71.3)
Abnormal breast symptoms	
Yes	104 (31.7)
No	224 (68.3)
History of breast disease diagnosis	
Yes	95 (29.0)
No	233 (71.0)
Breast cancer screening history	
Have been screened in the past 2 years	174 (53.0)
Never had a screening	154 (47.0)

The CFA results suggested that the goodness of fit of the adjusted three-factor model was good. Specifically, likelihood ratio χ^2/df=1.86, incremental fit index=0.94, comparative fit index=0.94, goodness-of-fit index=0.84, adjusted goodness-of-fit index=0.80, standardised root mean square error of approximation=0.06 and root mean square residual=0.05.

Reliability

The Cronbach's α coefficient of the C-BCAM was 0.90, and the coefficients of the *knowledge of symptoms*, *barriers to seeking medical help* and *knowledge of risk factors* domains

Table 2 Results of item analysis (30 items)

Item	CR	Item-total correlations	Cronbach's α if item deleted	Note
B1	7.246*	0.403*	0.895	Retained
B2	8.519*	0.443*	0.894	Retained
B3	8.492*	0.459*	0.893	Retained
B4	7.095*	0.403*	0.894	Retained
B5	9.012*	0.432*	0.894	Retained
B6	4.536*	0.257*	0.898	Deleted
B7	5.134*	0.275*	0.897	Deleted
B8	3.590*	0.190*	0.897	Deleted
B9	5.059*	0.297*	0.894	Retained
B10	5.192*	0.280*	0.894	Retained
B11	3.993*	0.234*	0.896	Deleted
B12	4.589*	0.284*	0.895	Retained
B13	9.220*	0.481*	0.893	Retained
B14	8.351*	0.422*	0.893	Retained
B15	5.728*	0.314*	0.895	Retained
B16	12.133*	0.650*	0.887	Retained
B17	7.303*	0.430*	0.892	Retained
B18	13.497*	0.688*	0.887	Retained
B19	14.290*	0.681*	0.887	Retained
B20	9.794*	0.535*	0.890	Retained
B21	10.111*	0.582*	0.889	Retained
B22	10.971*	0.612*	0.888	Retained
B23	9.836*	0.560*	0.889	Retained
B24	7.505*	0.470*	0.891	Retained
B25	9.504*	0.557*	0.890	Retained
B26	7.846*	0.488*	0.890	Retained
B27	12.780*	0.646*	0.887	Retained
B28	10.837*	0.590*	0.889	Retained
B29	9.194*	0.541*	0.890	Retained
B30	11.547*	0.621*	0.887	Retained

*P<0.01.

were 0.88, 0.84 and 0.94, respectively. The coefficient of test–retest reliability was 0.72, indicating that the C-BCAM has satisfactory stability (table 3) (see online supplementary appendix).

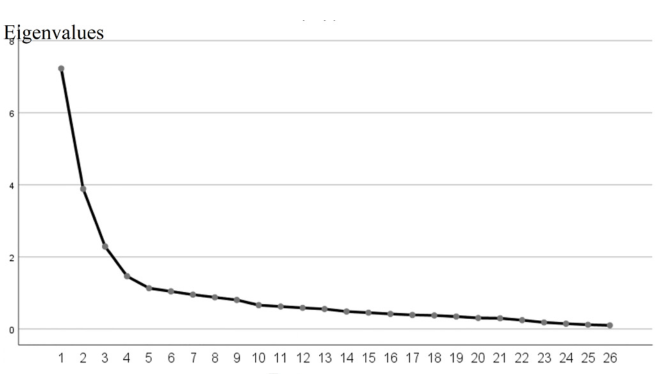

Figure 1 The screen plot.

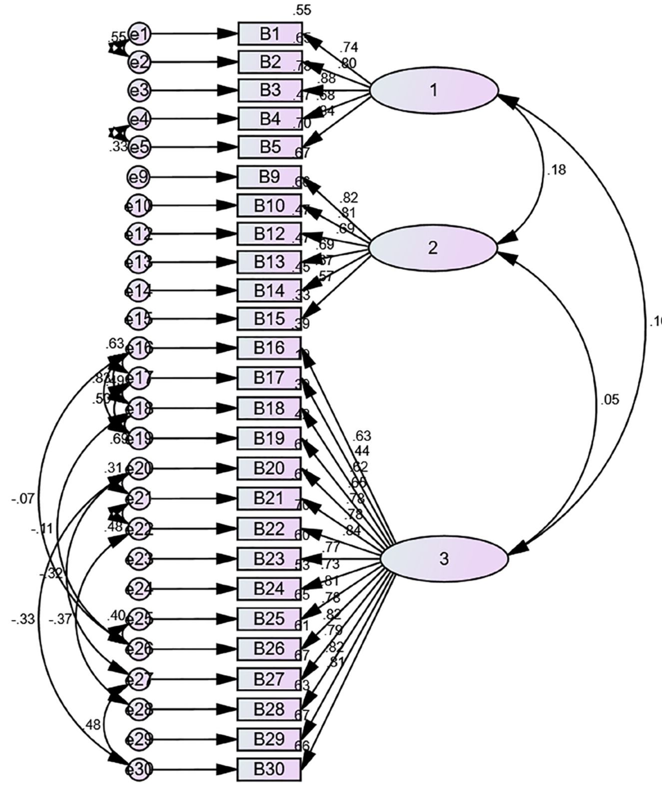

Figure 2 Standardised three-factor structural equation model diagram.

DISCUSSION

This study aimed to translate and culturally adapt the BCAM into Chinese and to examine the psychometric properties of C-BCAM. In general, the C-BCAM had satisfactory internal consistency (Cronbach's α=0.90), test–retest reliability (coefficient=0.72), content validity and construct validity. The three-factor model explained 51.56% of the total variance. Therefore, the results indicated that the C-BCAM has good reliability and validity and can be a reliable measurement tool. This instrument provides an effective and comprehensive method for clinical healthcare professionals to identify the status of Chinese women's breast cancer awareness and to predict their screening practices to further develop scientific and reasonable breast cancer screening measures for the medical sector to provide means of evaluation.

Compared with the BCAM,[23] the C-BCAM showed satisfactory psychometric properties. Specifically, the Flesch reading ease score of the BCAM was 87.9, indicating that

Table 3 Results of internal consistency

Domains	Items	Cronbach' α
Knowledge of symptoms	5	0.88
Barriers to seeking medical help	6	0.84
Knowledge of risk factors	15	0.94
C-BCAM scale	26	0.90

C-BCAM, Chinese version of the Breast Cancer Awareness Measurement.

BCAM was easier to read than adult reading material. In addition, 91% (231/253) of the participants reported that it was easier to read, and 96% (244/253) reported that the questions on the scale were not upsetting. Most of the participants recruited in this study had a higher level of education, but the remaining 33% of participants with a lower level of education also reported that the C-BCAM was easy to understand, and none of them reported that it violated their privacy. Except for the *lump in the breast* item (0.28), the other items in the BCAM showed moderate-to-good kappa statistic values (0.42–0.70). Compared with the BCAM (kappa statistic=0.28–0.70), the C-BCAM had a better test–retest result (coefficient value=0.72). Meanwhile, it should be noted that most experts considered that nipple rash and redness of the skin are not specific symptoms of breast cancer; thus, the related items in the C-BCAM were removed. Therefore, the C-BCAM formed by culturally adapting the BCAM is a reliable and effective tool for evaluating the level of breast cancer awareness of Chinese women.

There are three available versions of the BCAM. BCAM-Kenyan[25] focuses on two domains (*knowledge of symptoms* and *barriers to breast cancer screening*). Similar to BCAM-Kenyan, the C-BCAM avoided double-barrelled questions with the conjunction 'or' in the statements and divided these questions in the BCAM into multiple single questions. To avoid misunderstanding, the BCAM-Kenyan changed all statement items in the *barriers to seeking medical help* domain into questions. Similarly, the C-BCAM includes a question title and 15 statements to avoid ambiguity. Compared with the BCAM-Kenyan, the C-BCAM reported higher internal consistency (0.80 vs 0.90). The BCAM-Arab includes four domains, including *early signs, early detection practices, awareness of age-related risks* and *awareness of general risk factors*.[26] Compared with the internal consistency of the BCAM-Arab (0.89 and 0.86), the C-BCAM has better internal consistency (Cronbach's α=0.90). The Persian version of the BCAM[27] has three domains, including *knowledge of breast cancer symptoms, knowledge of age-related risk* and *frequency of breast checking*, and it has excellent test–retest reliability (coefficient=0.84) and internal consistency (Cronbach's α=0.88). Compared with the BCAM-Persian, the C-BCAM had better internal consistency.

This study identified the validity and reliability of the C-BCAM and suggested that it can be used as an assessment tool for assessing breast cancer awareness in Chinese women. Although we have made several revisions on the basis of the original scale, all the modifications are based on the suggestions of experts and the characteristics of China's medical systems to make the instrument more suitable for Chinese women. Healthcare providers and policymakers can use this tool to evaluate women's awareness of breast cancer to identify individuals with poor awareness levels and to further develop targeted interventions and public measures to improve the level of public screening awareness. Notably, the specific cut-off value of the C-BCAM is critical to the assessment of women's awareness level. Future studies should take this as the focus to formulate a reasonable and scientific standard value to identify women with insufficient screening awareness.

Similar to the other versions[25–27] of the BCAM, we studied adult women over the age of 18, both young and old. Although breast cancer is more common in women over 40, it is also a social problem in younger women.[41] Age is an independent risk factor for poor prognosis in patients with breast cancer.[42] Although the incidence of breast cancer in China is lower than that in America, the proportion of younger women with breast cancer is higher. In China, the age-specific incidence of breast cancer increases with age, and the incidence increases rapidly with age after the age of 30, reaching a peak in the age group of those over 55.[43] A multicentre retrospective study reported that approximately 7.06% (395) of patients with breast cancer are between the ages of 21 and 34, and young women with higher educational backgrounds are more likely to develop breast cancer.[44] A growing number of young women are being diagnosed with advanced disease, which is a direct result of a lack of screening and prevention in this age group. Compared with elderly women, young women have a higher recurrence rate and a poorer prognosis.[41 44] Therefore, assessing breast cancer awareness and screening practices across all groups of women, including young women, is the key to developing targeted screening strategies and improving prognosis.

This study has several limitations. First, the sample was from Jilin Province in northeast China, representing the level of breast cancer awareness among women in areas with the highest incidence and mortality of breast cancer. However, more than half of the participants lived in cities and had a specialty/bachelor's degree or above; thus, the results were not representative of all Chinese women. Second, a mixture of on-site paper questionnaires and online electronic questionnaires was used for recruitment, and the results collected online may contribute to the bias caused by a lack of sample heterogeneity. Third, this study verified the reliability and validity of the scale in China but failed to further evaluate the level of individual breast cancer awareness, such as the determination of the cut-off value. Additionally, an in-depth analysis of its influencing factors, such as the histories of screening and histories of breast disease, was lacking. Thus, the C-BCAM needs to be further verified in more diverse populations.

CONCLUSIONS

The results showed that the C-BCAM includes 3 domains, a total of 26 items and has satisfactory internal consistency (Cronbach's α=0.90). It is an effective and concise instrument for evaluating the breast cancer awareness of Chinese women, assessing their knowledge of breast cancer symptoms, perceived screening barriers and risk factors. This instrument can be used for future related studies to evaluate individual-level factors that may affect breast cancer screening participation and to provide potentially modifiable targets for interventions that ultimately improve individuals' screening decisions and participation.

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Contributors NL conducted the analysis plan, conducted the data collection and analysis, interpreted the findings and drafted the manuscript. PL confirmed and modified the back-translated version of the BCAM. JW, D-dC and W-jS reviewed the manuscript, revised it critically for important intellectual content. P-pG and X-hZ conducted data collection and analysis. WZ was responsible for the study design, supervised the study, led the data collection, contacted experts to translate and revise the manuscript and approved the final draft.

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Patient consent for publication Not required.

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