ORIGINAL ARTICLE

Knowledge, Attitude and Practice on Breast Cancer Screening among First Degree Relative of Breast Cancer Patient using Validated Malay Language Questionnaire

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ABSTRAK

Penilaian terhadap pengetahuan, sikap dan amalan (PSA) berkaitan kanser payudara (KP) adalah penting bagi memastikan keberkesanan promosi saringan dan kesesuaiannya dengan keperluan masyarakat. Penggunaan soal selidik dalam bahasa tempatan adalah lebih berkesan dalam menyediakan pemahaman yang sensitif budaya dan dipertingkatkan tentang isu yang dikaji. Walau bagaimanapun, bilangan soal selidik Bahasa Melayu PSA yang disahkan adalah terhad, di mana kebanyakan kajian menggunakan versi Bahasa Inggeris. Kajian ini bertujuan mengesahkan soal selidik PSA saringan KP yang telah diterjemahkan ke dalam Bahasa Melayu berkaitan saringan KP untuk digunakan dalam menilai PSA dalam kalangan saudara darjah pertama. Soal selidik PSA asal yang dibangunkan oleh Madubogwu telah diterjemahkan ke dalam Bahasa Melayu menggunakan kaedah terjemahan ke hadapan dan ke belakang. Pengesahan kandungan soal selidik dinilai oleh sepuluh pegawai perubatan radiologi dan juru X-ray mamografi. Manakala ujian rintis melibatkan 32 peserta, diikuti dengan kajian lengkap yang melibatkan 112 peserta menggunakan versi Bahasa Melayu yang telah disahkan. Penilaian pakar mendapati soal selidik mencapai skor antara 124 hingga 140 daripada 144 bagi aspek konsistensi, kejelasan, ketepatan dan tatabahasa, dengan indeks kesahan kandungan purata 0.920. Ketekalan dalaman (Cronbach alfa) ialah 0.704 dan 0.870 untuk ujian rintis, menunjukkan kebolehpercayaan yang baik. Daripada 112 peserta, 95.5% mengetahui mengenai KP. Sumber maklumat utama ialah hospital (57.1%) dan media (23.2%). Sebanyak 81.3% bersetuju bahawa pemeriksaan sendiri payudara berguna dalam pengesanan awal KP dan 63.4% mengamalkannya secara berkala. Pengetahuan tentang pemeriksaan klinikal payudara dan mamogram adalah sederhana, dengan masing-masing 65.2% dan 82.1% peserta menganggap kedua-dua teknik ini berguna. Soal selidik PSA versi Bahasa Melayu yang disahkan menunjukkan ciri psikometrik yang kukuh dan merupakan instrumen yang sah untuk menilai PSA berkaitan saringan KP.

Kata kunci: Kanser payudara; kesahan kandungan soal selidik; PSA; saudara darjah pertama

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ABSTRACT

Assessment of knowledge, attitude and practice (KAP) related to breast cancer (BC) is essential to ensure that screening promotion strategies are effective and culturally appropriate. Using questionnaires in the local language enhances cultural sensitivity and improves understanding of the subject. However, validated Malay-language KAP questionnaires are limited, as most studies rely on English versions. This study aimed to validate a Malay-translated version of a KAP questionnaire on BC screening for use among first-degree relatives of BC patients. The original KAP questionnaire developed by Madubogwu was translated into Malay using a forward-backward translation method. Content validation was conducted by ten radiology medical officer and five mammographer. Pilot study was carried out with 32 participants, followed by a full survey involving 112 respondents using the validated Malay version. Experts scored the questionnaire between 124 and 140 out of 144 for consistency, clarity, accuracy and grammar, with an average content validity index of 0.920. The internal consistency (Cronbach's alpha) was 0.704, and the pilot test generated 0.870, indicating good reliability. Of the 112 respondents, 95.5% were aware of BC. The main sources of information were hospitals (57.1%) and media (23.2%). A total of 81.3% agreed that breast self-examination is useful for early detection, and 63.4% practiced it regularly. Knowledge of clinical breast examination and mammograms was moderate, with 65.2% and 82.1%, respectively recognising their usefulness. The validated Malay version of the KAP questionnaire demonstrates strong psychometric properties and is a valid instrument for assessing breast cancer screening knowledge, attitudes and practices.

Keywords: Breast cancer; first-degree relatives; KAP; questionnaire validation

INTRODUCTION

Breast cancer (BC) is the most common type of cancer diagnosed and one of the main causes of mortality for women globally. According to a report by the World Health Organisation (WHO) (2024), there were 670,000 documented deaths and 2.3 million women worldwide with BC in 2022. BC is one of the most prevalent malignancies among Malaysian women, with an estimated age-standardised incidence of 34.1 cases per 100,000. In 2022, there were 1,200 BC-related positive cases and 1,400 BC-related deaths (International Agency for Research on Cancer 2021). Furthermore, the global burden of BC is expected to cross 2 million by the year 2030, with growing proportions from developing countries (Bray et al. 2018).

In Malaysia, BC is one of the most common types of cancer among women, with an estimated age-standardised rate of approximately 38.7 per 100,000, where 5410 new cases are recorded each year (Azeem et al. 2015; Rufa'i et al. 2016). Although the rate of BC among young women is low at 4-6%, it should not be underestimated because BC remains the most common malignancy in this group. Every year, more than 1,000 women under the age of 40 die from BC (Radecka & Litwiniuk 2016). First-degree relatives (FDR) of women with BC including mothers, sisters and daughters are at higher risk when compared with the general population, and it has been reported that family history has a role in 5-10% of cases (Liu et al. 2021). However, there is limited study that has been sufficient to properly characterise how, over a woman's life, specific patterns of disease in FDR may influence her risk of BC.

BC is treatable with early detection. It is commonly acknowledged that BC screening can reduce mortality and improve patient prognosis over time. Previous research has shown that early identification and screening can significantly enhance the detection rate of tiny BC to 68% and effectively reduce BC mortality by 20% (McPherson et al. 2000). Several studies have found that the majority of Malaysian women have insufficient awareness of BC, and investigations have revealed that breast self-examination (BSE)

practice has a substantial association with BC knowledge (Mars et al. 2020).

BSE and breast health awareness are essential practices for all women around the world. Understanding how their breasts change over time will assist them in determining what is normal for them and how to detect any abnormal changes. Knowledge of the risks and symptoms of BC is important in identifying the disease's occurrence and progression. Hence to boost screening practices, women's knowledge and awareness of BC must be continuously assessed and improved.

A questionnaire is one of the most widely used data collection techniques in research that aims to assess knowledge, attitude and practice (KAP) or perception involving large-scale participants. It provides systematic data collection where all participants are exposed to the same set of questions, thus reducing bias and providing reliable outcomes. Since most of the questionnaires available in literature are in English version, more researchers adopted and adapted the questionnaire and translated it into a local language which the targeted populations are most proficient in. The questionnaire covering KAP helps to analyse the level of knowledge of participants about BC and raise awareness about the disease. Understanding BC awareness is important to guide public health authorities and policymakers to implement effective strategies to increase awareness of BC symptoms and use of BC screening services. In addition, this tool is useful for the evaluation of future awareness-raising interventions and other public health programs.

Content validity is important to confirm that the translated questionnaire can measure the assessed matter and its suitability and relevance to the study objectives (Kim et al. 2008). The goal of this validation is to confirm that the questionnaire elements mainly represent the KAP domain of BC screening. The translation process into a common language is crucial as it can provide culturally relevant and easy understanding among participants from diverse backgrounds. However, good translation methods do not guarantee the success of a project and poorly translated questionnaires lead to project failure (Kalfoss 2019).

MATERIALS AND METHODS

Study Design and Participants

This was a cross-sectional study targeting FDR below 40 years old to assess their KAP regarding the early detection of BC using BSE, clinical breast examination (CBE) and mammography. This group was considered vulnerable to BC as they were at double risk of getting the disease because of hereditary pathogenic variants and young age. A total of 32 and 112 participants were recruited using the snowball sampling method in the pilot testing and complete survey, respectively. Contact information for FDR was obtained from the BC patient who underwent a check-up and mammography procedure at the Radiology Department, Seberang Jaya Hospital from January 2023 to October 2023. Women who had first-degree family connection with the BC patient, aged between 18 to 40 years old, and consented were recruited in this study. The FDRs were contacted via phone call, and appointments were arranged upon their agreement to participate. Those with existing breast diseases or a prior diagnosis of BC were excluded. Ethical clearance was obtained from the Research Ethics Committee, Universiti Kebangsaan Malaysia (JEP-2022-741) and the National Medical Research Register (NMRR ID: 22-02428-NE1 [IIR]) prior to commencement of the study.

Translation Process of the Questionnaire

Following a literature review on the domain of KAP regarding BC, a questionnaire from a previously published study Madubogwu et al. 2017) was adopted, with formal permission obtained (Appendix A). This questionnaire consisted of five main sections: (i) socio-demographic characteristics; (ii) knowledge of BC and BC prevention; (iii) knowledge and practice of BSE; (iv) knowledge and practice of CBE; and

(v) knowledge and use of mammography. The questionnaire was initially developed in English by the author; it was then translated to Malay. The translation process was conducted with the help of a bilingual expert from the School of Languages, Literacy and Translation using forward and backward methods.

Content Validity and Reliability among Panel of Experts

Content validity was conducted to ensure the translated questionnaires measured what they were supposed to assess, as well as their suitability and relevance to the study's goal (Tsang et al. 2017). In this validation process, ten radiology medical officer and five mammographer, with at least five years of experience in breast imaging were recruited. The experts reviewed the questionnaire of 36 items to ensure its consistency with the conceptual framework. They evaluated each item on four dimensions in terms of consistency, clarity, accuracy and grammar using a dichotomous response scale: "Clear = 1" vs. "Unclear = 0". A content validity index (CVI) score of 0.78 or higher for three or more experts could be considered evidence of good content validity (Halek et al. 2017).

In the present study, Cronbach's alpha was used to test for the internal consistency or reliability of the questionnaire. It served as a guide for the researcher related to the importance of proper assessment of the reliability of a research questionnaire (Ranganathan & Caduff 2023; Ranganathan et al. 2024). Cronbach's alpha was a measure of internal consistency or dependability among multiple items, measurements or rankings. Cronbach's alpha range between 0.70 to 0.95 had been indicated in practice to show acceptable internal consistency (Taber 2018).

Pilot Study among FDR

The pre-final version of the translated questionnaire was evaluated via a pilot test involving 32 FDR. Following completion of the translated questionnaire, we conducted the reliability using Cronbach's alpha and face validity where the participants was asked verbally or via an open-ended question to expound on what they believed each questionnaire item and their related response meant. This method aimed to confirm that the translated items had the same meaning as the original items and that there was no uncertainty about the translated questionnaire.

Survey on Knowledge, Awareness and Practice among Young FDR

This cross-sectional study was conducted on young FDR BC patients who met the inclusion and exclusion criteria using the BC KAP Questionnaire (BCKAPQ) from January 2023 to October 2023. Based on the finite sample population size, 144 patients diagnosed with BC who underwent mammography procedures from January 2023 to October 2023 were chosen. A total of 105 participants were needed with a margin of error of 5% to represent a cross-section of the population. In order to account for data loss and volume, an additional 10% was included in the sample size estimated. Hence the final number of participants needed was 116 FDR.

RESULTS

Translation Process of the Questionnaire

The original questionnaire was translated into Malay by a bilingual expert using forward and backward techniques. The linguist compared the original English questionnaire during the forward translation process into Malay and ensured that the terminology and language used were easily understood by the target population within the Malaysian context. The translation was made as close to the original as possible. After minor changes, the Malay version of the questionnaire was back-translated into English to check the similarity.

Experts Validation Procedure and Pilot Study

The overall score for four dimensions (consistency,

clarity, accuracy and grammar) obtained from each expert ranged from 124 to 140 out of 144 where the average CVI obtained was 0.920 (Table 1). For each dimension, the average CVI recorded was also above 0.9. These indexes indicated that

KAP regarding breast disease items were relevant and clear since the recommended cut-off value for the CVI was 0.7. In accordance with expert feedback, some items were revised to ensure greater clarity and alignment with the study

TABLE 1: Content validity index (CVI) among the experts

Expert's	Consistency	Clarity	Accuracy	Grammar	Total score
MO Radiology 1	35/36	35/36	31/36	35/36	136/144
MO Radiology 2	36/36	33/36	35/36	35/36	133/144
MO Radiology 3	36/36	34/36	34/36	34/36	126/144
MO Radiology 4	36/36	35/36	36/36	36/36	136/144
MO Radiology 5	34/36	34/36	36/36	35/36	128/144
Radiographer 1	36/36	35/36	35/36	34/36	138/144
Radiographer 2	36/36	35/36	36/36	36/36	133/144
Radiographer 3	36/36	35/36	34/36	34/36	131/144
Radiographer 4	34/36	34/36	32/36	36/36	124/144
Radiographer 5	36/36	36/36	36/36	36/36	140/144
Score	333/360	333/360	327/360	330/360	1325/1440
Content validity index	0.925	0.925	0.908	0.917	0.920

TABLE 2: Further amendment of questionnaire based on experts' recommendations

Items	English version	Malay version	
		Before amendment	After amendment
Instruction	(Please tick √ on your answers) This study is being conducted on BC prevention. Your responses will be kept confidential. **Your honest answer will be appreciated.** Participation is not compulsory. Thank you for **responding** and for your time.	(Sila tandakan √ untuk jawapan anda) Kajian ini adalah tentang pencegahan kanser payudara. Jawapan anda akan dirahsiakan. **Jawapan jujur anda amatlah dihargai.** Penyertaan anda tidak wajib. Terima kasih di atas **jawapan** dan masa anda.	(Sila tandakan √ untuk jawapan anda) Kajian ini adalah tentang pencegahan kanser payudara. Maklumbalas anda adalah sulit. **Maklum balas jujur anda amatlah dihargai.** Penyertaan anda tidak wajib. Terima kasih di atas **maklumbalas** dan masa anda.
11	Have you been taught **how to do** BSE?	Pernahkah anda diajar **menggunakan** PSP?	Pernahkah anda diajar **melakukan** PSP?
13	At what age should BSE be **started**?	Umur berapakah PSP perlu **dilakukan**?	Umur berapakah PSP perlu **dimulakan**?
15	**What is the best time** to do BSE?	**Apakah** masa terbaik untuk melakukan PSP?	**Bilakah** masa terbaik untuk melakukan PSP?
33	At what age should mammography be **started**?	Umur berapakah mamografi perlu **dilakukan**?	Umur berapakahmamografi perlu **dimulakan**?

Note: Bold words are the terms that underwent improvements following experts' suggestions

objectives as shown in Table 2. In this study, Cronbach's alpha was used to assess the internal consistency or reliability of the questionnaire. Cronbach's alpha coefficient was a measure of internal consistency or reliability between several items, measures or positions. The translated Malay version questionnaire domain demonstrated acceptable internal consistency with a Cronbach's alpha of 0.704, indicating effective measurement of the intended concept.

In a pilot study involving 32 FDRs, the Cronbach's alpha was higher at 0.870, showing a good level of agreement or correlation, indicating they were effectively measuring the intended concept. Participants suggested improvements such as using simpler language and a larger font size, leading to modifications detailed in Table 3. The final Malay version of the questionnaire was finalised for use in the study and designated as the BCKAPQ.

Survey on KAP of FDR using BCKAPQ

A total of 112 participants took part in this study. Of these, 45.5% were aged 18 to 25 years, 30.4% were aged 26 to 35 years and 24.1% were aged 36 to 39 years. Half of, 51.8% participants were still single and 47.3% participants were married. The majority of participants (71.4%) selected jobs in other categories, followed by office staff (18.8%). Meanwhile, 84.8% of participants had completed their tertiary educational level and 9.8% of participants selected in other categories. The summary of the participants' socio-demographic characteristics was tabulated in Table 4.

In terms of the knowledge of BC, 95.5% were aware of the disease (Table 5). Every participant in this study was a 100% FDR to BC patient where 94.6% were related to mother and 5.4% were sisters. Majority of the participants (n = 64) had heard about BC from the hospital and 26 participants had heard it from the media. The remaining participants had learned through books, conferences, friends and others (Figure 1).

In terms of knowledge of BSE, 83.9% of the participants had heard of BSE and 16.1% never heard about it. A sizable segment of participants 81.3% agreed that BSE was a very useful practice for early detection of BC, while 18.8% said no. However, 60.7% had been taught how to do BSE by their parents, teacher, doctor, nurses and friends. Among the participants studied, 33.9% had no idea when BSE should be started and 27.7% of participants correctly stated that it should begin from puberty. On the other hand, 54.5% knew that BSE should be done monthly and 35.7% had no idea. Furthermore, only 41.1% of the participants knew the best time to do BSE was one week after menstruation, while 52.7% of them had no idea. More than half of the participant stated accurately that, BSE should be done individually. Table 6 showed the results of the knowledge of BSE among the participants.

With regards to practice of BSE, majority of participants (90.2%) claimed they would see a doctor if there were any abnormalities when doing BSE (Table 7). More than half of participants (83.0%) believed that BSE was a highly important examination in the early diagnosis of BC. A reasonable number of the participants (63.4%) practiced BSE and never discover any abnormalities while practicing it and 36.6% of them had never attempted BSE before. On the other hand, 22.3% of participants practiced BSE

TABLE 3: Face validation based on FDR comments and modifications of the general questionnaire format

No.	Participants' comments	Before modification	After modification
1	Words were too small.	Font size: Arial Narrow 11	Font size: Arial Narrow 12
2	The use of words in the answer for items 17 and 29	written **Ultrabunyi** (actual translation for **Ultrasound**)	**Ultrabunyi** was changed to **Ultrasound** (Commonly used by all)

Note: Bold words were the terms that underwent improvements following participants' suggestions

TABLE 4: Socio-demographic characteristic of FDR (n=112)

Variables		n	(%)
Age	18-25	51	(45.5)
	26-35	34	(30.4)
	36-39	27	(24.1)
Marital Status	Single	58	(51.8)
	Married	53	(47.3)
	Separated	1	(0.9)
Occupation	Doctor	3	(2.7)
	Office staff	21	(18.8)
	Nurse	6	(5.4)
	Lab staff	1	(0.9)
	Ward maid	1	(0.9)
	Others	80	(71.4)
Education	No education	2	(1.8)
	Primary	4	(3.6)
	Tertiary	95	(84.8)
	Others	11	(9.8)

FDR: First degree relative

TABLE 5: Knowledge of breast cancer (n=112)

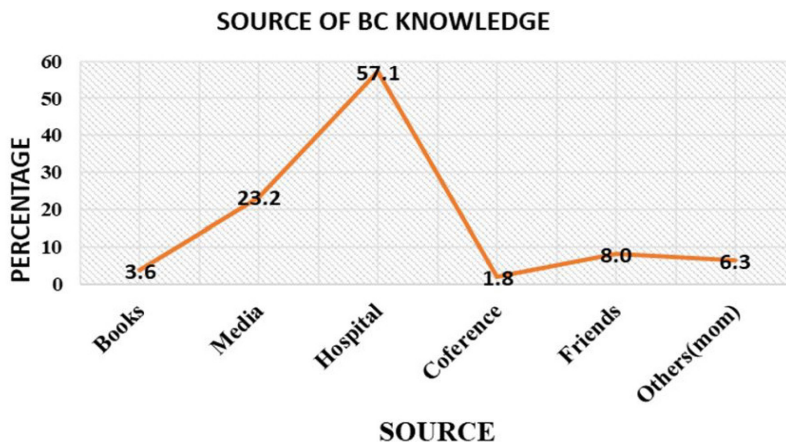| Variables		n	(%)
Heard breast cancer	Yes	107	(95.5)
	No	5	(4.5)
Family breast cancer	Yes	112	(100.0)
Relationship	Mother	106	(94.6)
	Sister	6	(5.4)

FIGURE 1: Source of breast cancer knowledge ((n=112)). (BC: Breast cancer)

TABLE 6: Knowledge of breast self-examination (n=112)

Variables		n	%
Heard BSE	Yes	94	(83.9)
	No	18	(16.1)
BSE is useful	Yes	91	(81.3)
	No	21	(18.8)
Been taught how to do BSE	Yes	68	(60.7)
	No	44	(39.3)
Age for BSE	From puberty	31	(27.7)
	From 20 years	35	(31.3)
	From 30 years	6	(5.4)
	After menopause	2	(1.8)
	No idea	38	(33.9)
How often should BSE be done	Daily	1	(0.9)
	Weekly	5	(4.5)
	Monthly	61	(54.5)
	Yearly	5	(4.5)
	No idea	40	(35.7)
Best time to do BSE	During menstrual	4	(3.6)
	After period	46	(41.1)
	During pregnancy	1	(0.9)
	During breastfeeding	2	(1.8)
	No idea	59	(52.7)
BSE should be done by	Doctor	6	(5.4)
	Nurse	3	(2.7)
	Individually	88	(78.6)
	Others	1	(0.9)
	No idea	14	(12.5)

BSE: Breast self-examination

TABLE 7: Practice of breast self-examination (n=112)

Variables		n	%
What to do when finding abnormalities	Pray	1	(0.9)
	Lab test	4	(3.6)
	Meet doctor	101	(90.2)
	Do nothing	1	(0.9)
	No idea	5	(4.5)
Benefits of BSE	Familiar with breast texture	2	(1.8)
	Early breast cancer detection	93	(83.0)
	Detect breast abnormalities	10	(8.9)
	Good breast exercise	1	(0.9)
	No idea	6	(5.4)
Do you practice BSE?	Yes	71	(63.4)
	No	41	(36.6)
If not, why not	Practicing	71	(63.4)
	No idea	41	(33.6)
Discovered any abnormality while practicing BSE	No	71	(63.4)
	No BSE before	41	(33.6)

...continuing

Variables		n	%
If the answer above yes, what do you do	No finding	71	(63.4)
	No BSE before	41	(33.6)
Do you think BSE is good practice	Yes	104	(92.9)
	No	4	(3.6)
	No idea	4	(3.6)
BSE: Breast self-examination			

monthly, 14.3% occasionally and 25.9% rarely practiced BSE. Unfortunately, a large proportion of participants, 93.8% had no idea what to do if they discovered any abnormalities when performing BSE. Majority of the participants (92.9%) agreed BSE was a good practice. Regarding purpose performing BSE, most participants stated that BSE was performed to inspect the breasts in the mirror (39.3%) and to feel the breasts with the hands (37.5%).

With regards to knowledge of CBE, the more than half of the participants (58.0%) had heard about it and 65.2% of them knew CBE was a useful tool for the detection of BC. A reasonable percentage of participants (66.1%) believed that it should be done by a doctor, less than half of participants (22.3%) had no idea. More than half of participants stated that CBE was done using hand and ultrasound. Only 21 (18.8%) stated CBE should be done when found abnormality while practicing BSE and 56 (50.0%) had no idea (Table 8).

Majority of participants (87.5%) had heard about the mammography examination. The level of knowledge regarding the use of mammography was generally high among participants, where 82.1% of them agreed that mammography was a useful tool for early detection of BC. In addition, 62.5% of the participants noted that mammography should

TABLE 8: Knowledge of clinical breast examination (n=112)

Variables		n	%
Heard CBE	Yes	65	(58.0)
	No	47	(42.0)
CBE is useful	Yes	73	(65.2)
	No	31	(27.7)
	No idea	8	(7.1)
CBE done by	Doctor	74	(66.1)
	Nurse	10	(8.9)
	Individual	3	(2.7)
	No idea	25	(22.3)
CBE done using	US	33	(29.5)
	MMG	16	(14.3)
	Hand	37	(33.0)
	Reason	12	(10.7)
How often should CBE be done?	Weekly	1	(0.9)
	Monthly	9	(8.0)
	Yearly	25	(22.3)
	Found abnormality	21	(18.8)
	No idea	56	(50.0)
CBE: Clinical breast examination; MMG: Mammography; US: Ultrasound			

TABLE 9: Knowledge and use of mammography

Variables		n	%
Heard MMG	Yes	98	(87.5)
	No	14	(12.5)
MMG is useful	Yes	92	(82.1)
	No	1	(0.9)
	No idea	19	(17.0)
How often should MMG be done?	Monthly	1	(0.9)
	Yearly	52	(46.4)
	Every 3 years	10	(8.9)
	Lump while BSE/CBE	7	(6.3)
	No idea	42	(37.5)
Have you ever done MMG?	Yes	0	(0.0)
	No	112	(100.0)
If no why	Not old enough	72	(64.3)
	Financial constraint	6	(5.4)
	MMG not available	9	(8.0)
	No idea	25	(22.3)

BSE: Breast self-examination; CBE: Clinical breast examination; MMG: Mammography

be commenced from the age of 40 years and the rest participants responded inaccurately. More than quarter, 46.4% of the participants knew that mammography should be done yearly and 37.5% had no idea. All participants in this study had never done mammography before, with the best understanding where 72 (64.3%) stated they did not reach the age requirement for the procedure (Table 9).

DISCUSSION

BC is regarded to be one of the life-threatening diseases in medical history. People are dying at a higher rate because BC is becoming increasingly prevalent. Early detection of malignancy can help to save lives, especially among the at-risk women population. The goal of this study was to validate translated questionnaires via expert validation and pilot testing among the targeted population and to investigate the level of BC screening knowledge, awareness and practice among FDR of BC patients. This study covered validation features including content validity, face validity and reliability analysis.

The psychometric evaluation of the translated questionnaire revealed strong evidence of both content validity and internal consistency reliability. This high CVI suggests that the items within the translated version were deemed highly relevant and representative of the construct by the panel of experts, ensuring that the questionnaire comprehensively captures all essential aspects of the domain. Such result reinforces the appropriateness of the instrument for the target population and supports its utility in avoiding misinterpretation or construct under-representation. In terms of internal consistency reliability, this value reflects moderate reliability, it served as a useful baseline measure prior to any refinement of the instrument. A pilot test resulting in a significantly improved Cronbach's alpha value, indicating that the items are consistently measuring the same underlying construct and that the instrument demonstrates strong reliability after revisions. It is important to note that interpretation of Cronbach's Alpha values can vary, as different authors apply slightly different qualitative descriptors for reliability thresholds.

However, in many studies, a value above 0.70 is considered acceptable, where 0.80 and greater is preferred (Hehn et al. 2024; Yusoff et al. 2021). According to Taber (2018), alpha values are described in detail as excellent (0.93-0.94), strong

(0.91-0.93), reliable (0.84-0.90), robust (0.81), fairly high (0.76-0.95), high (0.73-0.95), good (0.71-0.91), relatively high (0.70-0.77), slightly low (0.68), reasonable (0.67-0.87), adequate (0.64-0.85), moderate (0.61-0.65), satisfactory (0.58-0.97), acceptable (0.45-0.98), sufficient (0.45-0.96), not satisfactory (0.4-0.55) and low (0.11) (Taber 2018). Overall, the result suggested that the translated questionnaire showed a clear purpose about the domain, and satisfactory reliability to be used for the survey among the targeted population.

BC are hereditary where pathogenic variants in breast cancer gene 1 (BRCA1) and breast cancer gene 2 (BRCA2) may increase the chances of developing tumours throughout life mostly among the FDR (Lasta et al. 2023). Around 6 to 10% of BC cases were detected among those below 45 years old in the developed country and this figure increased nearly double in less-developed countries. Young age is considered an adverse prognostic factor in BC regardless of the stage of detection and the histological grade, and even worse it presents a high risk of both local recurrence and contralateral BC (Gómez-Flores-Ramos et al. 2017).

Spreading knowledge and creating awareness can be done effectively through various interventions such as campaigns, educational games and seminars. In this study, media and hospitals are the main sources of information gained by the participants. Mass media are often utilised to obtain health education because they are highly influential, provide easy access, and hugely impact the attitudes and behavior of the public (Shakeel et al. 2017). Unlike input obtained from the internet which can lead to misapprehend or misuse of information, particularly when there is no communication with a physician (Chou et al. 2009), information from the mass media is more reliable as it usually undergoes comprehensive information verification and research (Salaudeen & Onyechi 2020). As a trusted entity and with the presence of professional personnel, the hospital with collaboration among researchers has been proven to play a crucial role in disseminating appropriate information and increasing awareness through health education programs, screening and awareness events, and community outreach programs (Ravintaran et al. 2023).

While creating BC awareness among the public is of great importance for early detection, focusing on those who are at higher risk can yield a more significant impact in terms of coping strategy and disease management. It is widely recognised that the effective approach to reducing the risk of BC is by controlling the modifiable risk factors such as psychological stress, dietary fat intake, food additives, smoking and exercise (Chiriac et al. 2018). However, being an FDR of a BC patient makes them vulnerable to non-modifiable risk factors. Hence, as the earliest line of preventive action, FDR is advised for routine screening at a younger age. This includes the practice of BSE, CBE and imaging screening such as ultrasound and mammography. The majority of the participants in this study show good knowledge of the BSE, its purpose and benefit and they think it is a good practice to assess changes in the breast. A large cohort study conducted in 2019 involving evaluation on 1,906,697 women showed that BSE that is monitored by the appointed village health volunteers is proven effective for the early detection of BC where nonregular BSE patients show a 1.7-fold higher incidence of mortality than regular BSE patients (Thaineua et al. 2020).

The current study indicated that participants' knowledge regarding CBE remains moderate, as the majority were unable to correctly answer key questions such as identifying the appropriate personnel responsible for performing CBE and the recommended frequency, often responding with 'no idea'. This finding is aligned with previously reported data where uptake of CBE among Malaysian women was 50 to 60%, considered fairly good knowledge (Farid et al. 2014). Both studies agreed that periodic assessments and performance must be emphasised as having a previous family history of BC does not guarantee good knowledge regarding screening procedures. CBE is a key method for detecting BC, especially where mammography is unavailable, and is consistently recommended by health authorities (Saslow et al. 2004).

All 112 participants (100%) had never had a mammogram before. This is mostly because more than half of participants, 64.3% believe they are too young to get one, and they are also unaware of the necessity of the process. These reasons are quite worrying and show their lack of knowledge regarding mammography. Contrary to Indonesia where mammography has not been designed as a national screening program (Choridah et al. 2021), Malaysia has strategised the use of mammography to improve its accessibility and uptake via mobile mammography services (Htay et al. 2021). Given how committed Malaysian local authorities are to enhancing prevention, detection and service improvement, the public ought to keep themselves updated and informed on these initiatives.

Strength and Limitation

A limitation of this study is that although 116 FDR were scheduled to participate, four did not attend their assigned appointments, resulting in a final sample of 112 participants. Nonetheless, this sample size still exceeds the minimum required to maintain a 5% margin of error for representing the target population. The strength of this study lies in the rigorous translation and validation of a culturally and linguistically appropriate Malay version of the KAP questionnaire. Content was reviewed by domain experts, including mammographers and radiology medical officers to ensure accuracy and relevance.

CONCLUSION

The BCKAPQ is a reliable tool to assess screening practices among FDRs. Although awareness levels are high, gaps in clinical breast examination and mammography practices indicate the need for targeted interventions. The public and Malaysian authorities must work together to create a supportive environment that encourages more people to get screened, which will ultimately lead to improved quality of life.

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