Development and validation of a group counselling resilience module intervention (GC-ReMI) among breast cancer patients

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ABSTRACT

Introduction: Resilience is crucial for breast cancer patients. It can enhance mental health and treatment outcomes. Group counselling intervention supports these patients by fostering their inner strength and helping them cope with the psychological impacts of their diagnosis and treatment. This intervention has improved their quality of life.

Materials and Methods: This study used a mixed design. It was conducted in two stages: i) Phase I: literature search, interviews, and focus group discussions (FGDs); ii) Phase II: module development, content, and face validation for the Group Counselling Resilience Module Intervention (GC-ReMI). Interviews and FGDs were used to gather information from patients and healthcare workers. Ten independent experts assessed the content validity, while ten counsellors and breast cancer patients evaluated the face validity.

Results: Twenty-three participants took part in the interviews and FGDs. Data saturation was reached at the third FGD and the fourteenth in-depth interview. Two themes emerged from the qualitative analysis and were integrated into the module. The final GC-ReMI module included nine subthemes. The content validity index (CVI) was 0.84, and the face validity index (FVI) was 1.0 for counsellors and 0.97 for breast cancer patients, all of which meet satisfactory levels.

Conclusion: The GC-ReMI module has satisfactory and acceptable content and face validity, suggesting its potential as a valuable psychoeducational tool for enhancing resilience among breast cancer patients.

KEYWORDS:
Module development and validation, psychoeducation module, resilience, breast cancer, group counselling

INTRODUCTION

Breast cancer diagnosis often induces stress and leads to significant changes in life routine among patients. Psychological resilience became a protective factor in dealing with stressful clinical situations. Resilience refers to the ability to adapt to and recover from adversity. For breast cancer patients, resilience is crucial in managing the disease's psychological and emotional impact. Higher levels of resilience have been associated with better psychological outcomes, including lower levels of distress, improved mental health, and a greater sense of control over one's life.[1]

Resilience is crucial in chronic illnesses such as cancer, where patients face substantial psychological challenges. Group counselling modules have gained recognition for enhancing resilience through shared experiences and peer support.[2] Group counselling is particularly beneficial for breast cancer patients, as it fosters a sense of community and reduces feelings of isolation that are common in cancer patients, and can offer opportunities for social connection, shared coping strategies, and emotional support among breast cancer patients.[3] In fact, resilience-focused interventions promote shared experiences and collective coping, which in turn strengthen individual recovery.[4]

Existing interventions aimed to enhance resilience among breast cancer patients fall short of addressing the comprehensive psychosocial needs of this population, leading to gaps in efficacy and applicability. Most resilience-building programs emphasise cognitive restructuring and individual coping strategies without adequately recognising the crucial role of social support and the collective experience of peers.[1,5] In addition, other research indicates that resilience is frequently bolstered by social connections and shared experiences, suggesting that a strictly individual-focused approach may not fully harness the benefits derived from group dynamics.6 In fact, fewer studies have focused on group intervention for resilience aspects among survivors.

Developing and validating interventions in module form offers a structured approach to enhancing resilience, thereby improving quality of life and psychological well-being. The GC-ReMI module is tailored to the specific needs of breast cancer patients, addressing holistic domains identified in Phase I to foster emotional regulation, social support, and adaptive coping. Phase II validation involved rigorous

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testing to ensure its effectiveness in strengthening resilience and related psychological outcomes.

This study was conducted in two phases. Phase I identified resilience domains among Malaysian breast cancer survivors, and Phase II developed and validated the Group Counselling Resilience Module Intervention (GC-ReMI) using the Three-Round Modified Delphi Technique and content and face validity testing. A mixed-methods design was employed to triangulate data, enhance validity, and provide comprehensive insights.[7]

MATERIALS AND METHODS

The study used a mixed-methods design, combining qualitative and quantitative research methods. The study is conducted in two phases: i) Phase I: literature search, interviews, and focus group discussions (FGDs); ii) Phase II: module development, the three-round modified Delphi technique, content validation, and face validation for the GC-ReMI module. All the data was gathered after completing the interview and the focus group discussion session. Then, the data were analysed using thematic analysis using ATLAS.ti software version 7.9.

Thematic analysis was employed to capture the nuances of participants' experiences following interviews and discussions. Guided by Braun and Clarke's six-step framework (2006), the process involved data familiarisation, coding, theme development, review, definition, and reporting. This structured approach ensured transparency and rigour, with themes emerging inductively through iterative coding.[8,9]

Ten independent experts assessed the content validity, while ten counsellors and breast cancer patients evaluated the face validity. Only patients who provided written informed consent and those who were willing to participate in the intervention were recruited.

Phase I: Module Development (Literature Search, Interview, and FGDs)

A systematic literature search was conducted across PubMed, PsycINFO, Scopus, Web of Science, Google Scholar, and ScienceDirect for studies published between 2014 and 2024 to identify relevant modules. The extracted information was summarised, and draft domains were constructed accordingly.

In-depth semi-structured interviews and FGDs were then conducted to gather qualitative data informing the development of the GC-ReMI module. Interviews explored potential domains, resilience profiles, and participant preferences, with questions aligned with study objectives. Participants were recruited during clinic appointments, and sessions were conducted in private settings to ensure comfort. Open-ended and probing questions were used to elicit rich insights, while building rapport encouraged open sharing of experiences.

Interviews and FGDs were audio-recorded with participants' consent to ensure accuracy, while detailed field notes captured non-verbal cues and contextual information. Fourteen participants were interviewed individually, and three FGDs were conducted with groups of four, three, and two participants, using similar guiding questions. The sample size was determined based on the principle of data saturation, where no new themes emerge, typically achieved with 12 to 30 participants.[10] A total of 23 participants were included, which is consistent with qualitative research standards emphasising depth over statistical generalizability. For the Delphi rounds, expert panels were purposively selected from diverse disciplines to enhance the breadth and depth of insights.[11] Ten experts were considered sufficient to reach consensus and achieve saturation, balancing methodological rigour, expert quality, and practical feasibility.[12]

Audio recordings were transcribed verbatim and analysed using thematic analysis. Transcripts were thoroughly reviewed for familiarisation, followed by open coding where meaningful segments were assigned descriptive codes. Two researchers independently generated initial codes, which were then organised into categories and refined into overarching themes. NVivo 12 (QSR International Pty. Ltd., Doncaster, Victoria, Australia) was used to support data management and analysis. Triangulation of interviews, FGDs, and literature ensured the rigour and trustworthiness of the findings.

Phase II: Module Validation (the Three-Round Delphi Technique, Content Validation, and Face Validation of GC-ReMI Module)

Consensus Process (the Three-Round Delphi Technique)

Module development followed an iterative triangulation and review process through online and face-to-face meetings with ten experts, including psychiatrists, a pathologist, counsellors, religious leaders, a matron, a clinical psychologist, and an educator. The content was refined from dominant to less dominant themes, with careful assessment of wording, activities, and visual materials (tables, pictures, and infographics) to ensure cultural appropriateness, clarity, and accessibility for the target population.

The Three-Round Delphi technique is a structured communication method used to achieve consensus among the expert panels through rounds of questionnaires.13 Phase II involved content and face validation using self-administered inventories and guided interviews, followed by a three-round Delphi technique with ten experts. Structured feedback forms on potential GC-ReMI domains were distributed via email, with each round lasting two weeks. The structured feedback forms regarding all items with potential domains of the GC-ReMI were emailed to all ten expert panels with an official letter of invitation for 2 weeks. In Round 1, experts provided open-ended responses; in Round 2, they rated the relevance of items based on the summary from Round 1; and in Round 3, they reviewed statistical feedback and reconsidered their ratings. Consensus was defined as a mean score ≥4.0 and ≥75% agreement.[14] This process established agreement on the module's components and subcomponents. Expert panel selection was based on relevant expertise, willingness, time commitment, and communication skills.[12]

Content Validation by Expert Panels

The Content Validation Index (CVI) is used for the study, which is a statistical measure to quantify the content validity of items in a scale measurement tool. The CVI has assessed the degree of relevance of each item used in the module. There were six steps of the CVI procedure using a Likert scale rating, usually from 1 to 4.[15,16] The content validation process followed a six-step procedure. First, 23 items were developed based on the draft module to ensure comprehensive coverage of the content domain. Second, six experts were purposively selected, representing psychiatry (n=2), surgery (n=1), medicine (n=1), clinical psychology (n=1), and counselling (n=1). Each expert independently evaluated item relevance using a four-point Likert scale (1 = not relevant to 4 = highly relevant). Third, the CVI was calculated, with items rated 3 or 4 considered relevant. Fourth, items with lower scores were revised, replaced, or removed. Fifth, the scale was refined and retested where necessary. Finally, both numerical ratings and qualitative feedback from the experts were incorporated to improve the overall validity of the module. It has been proposed that an index of 0.83 or higher is required to achieve satisfactory CVI values if six experts are involved.[15-17]

Face Validation by the raters (ten counsellors and ten breast cancer patients)

The Face Validation Index (FVI) is used as a systematic approach to evaluate face validity, similar to how CVI is calculated. The FVI has assessed the clarity and comprehension of each item used in the module. There are six steps of the FVI procedure using a Likert scale rating, usually from 1 to 4.[18] Face validity was assessed by ten counsellors and ten breast cancer patients, who independently reviewed the full module and completed a structured face validity inventory form. The evaluation focused on clarity, comprehensibility, and overall presentation of each item. Participants were also invited to provide written suggestions for refinement. Feedback from both groups informed revisions to enhance the module's readability and acceptability.

RESULTS

PHASE I: Module Development (Literature Search, Interview, and FGDs)

Phase I involved the design and development of the module, which consisted of the literature search, in-depth interviews, and FGDs.

Sociodemographic Characteristics

A total of 23 participants were recruited, comprising 14 for individual interviews (11 breast cancer patients, a surgeon, a radiologist, and a matron) and 9 for FGDs (5 breast cancer patients, 2 medical officers, and 2 staff nurses). All participants were Malay females; 78% were employed and 22% unemployed. Overall, 82% were breast cancer patients and 18% were clinic staff. In terms of age, 18% were below 18 years, 52% were adults (19–59 years), and 30% were elderly (>60 years). Among breast cancer patients, only 25% were employed.

Emergent Themes

Quotations from transcripts were coded into sub-themes, which were then consolidated into themes and two main domains. Data saturation was reached at the third FGD and the fourteenth in-depth individual interview. The emergent themes are summarised in Table I.

The results generally found two main domains with eleven themes and twenty-three subthemes. The domains are classified into internal (6) and external (5). The internal domains were knowledge, cognitive, religion and spirituality, self-efficacy, emotion, and physical, whereas the external domains were family support, social support, cancer stages, financial, and mental health.

PHASE II: Module Validation (Three-Round Modified Delphi Technique, Content Validation, and Face Validation of GC-ReMI Module)

Whereas, phase II involved the validation of the module, which consisted Three-Round Modified Delphi technique, content, and face validation.

Consensus in Module Development Process using the Three-Round Delphi Technique

The Delphi process was conducted in three rounds with expert anonymity maintained. Experts rated, revised, and commented on items across rounds. Consensus was achieved for 27 subthemes, except for subthemes 8 and 27, which initially showed low consensus (QD ≥ 1.0) in Round 1. Following modifications, subtheme 27 reached medium consensus in Round 2, while subtheme 8 remained with no consensus. In Round 3, both subthemes achieved high consensus. The results are summarised in Table II.

Content and Face Validation

CVI and FVI emerge as a critical metric in evaluating validity, and it is subdivided into several key components: item level (I-CVI/FVI), the scale level (S-CVI/FVI) and the average scale level (S-CVI/Ave; S-FVI/Ave).15,16 I-CVI is the percentage of content experts who rate an item as relevant (3 or 4), while S-CVI is the average of these item scores. The percentage of raters that rate an item as clear and understandable (a rating of 3 or 4) is known as I-FVI for FVI, and the average of these ratings is known as S-FVI. Furthermore, a universal agreement-based scale-level index (S-CVI/UA and S-FVI/UA) was computed, which shows the percentage of items that received the highest relevance/clarity rating (3 or 4) from all experts/raters. A universal agreement score of 1 denotes 100% agreement.

The CVI for Six Panels

The CVI was calculated based on six expert ratings. Items 1, 8, 20, and 27 did not reach the acceptable threshold of 0.84, each scoring below 0.83, and were therefore excluded from the module, as they did not achieve a satisfactory level of content validity. Overall, I-CVI, S-CVI/Ave, and S-CVI/UA met the satisfactory level, 0.84 (>0.83), when six experts were involved. Thus, the module items have achieved satisfactory content validity.[15,17] The result for CVI is shown in Table III below.

Table I: Themes emerged from individual interviews and FGDs (Internal Domain & External Domain)

DOMAIN	THEMES	SUBTHEMES	EVIDENCE
Internal	Emotion	Emotional flexibility	"As for breast cancer cases, we, as medical doctors, play an important role in dealing with patients' emotions. We need to look for the emotional aspect when handling them. Treat not only their disease but also their emotions as well." (IDPT 3/48-49/050123).
		Emotional regulation skills	"I strengthened myself to be happy. Self-talk to myself by saying, 'It's okay (you can cry, can do good to yourself).' "(FGD1/185/041022)
	Knowledge	Knowledge of cancer stages	"Yes. I have to be strong. If I feel it a little bit, I divert attention by pretending not to know." (IDPT 5/22/301122)
	Cognitive	Mental flexibility	"I often talk nicely to myself(self-talk). It doesn't matter if I die now, that's enough. I'm satisfied." (IDPT 8/105-107/010123)
		Positive thought	"After getting sick, I try to accept it well and try not to stress. Now, I can't think negatively. I used to think a lot. "I didn't feel happy when I couldn't finish my work. I can't. I only need to do as much as I can." (FGD3/20-22/291122)
		Optimistic view	"When I visit my cousin with the same diagnosis, I feel grateful that I can still walk while she cannot. I thank God for my health and remind myself by looking at others who face greater challenges."(FGD3/22-25/301122)
		Gratitude	"Yes. I have to be strong. If I feel it a little bit, I divert attention by pretending not to know." (IDPT 5/22/301122)
	Physical	Physical fitness – functional ability	Yes, I'm fit after gardening. (IDPT 3/80/041022)
		Physical health – good nutrition intake	Since I got this disease, I started abstinence and haven't eaten meat anymore. (FGD1/133/041022) But there's only one thing I'm advised not to eat: soybeans. (FGD3/27/291122)
		Physical activities	I do, too. Just a normal, brisk walk. (FGD2/40/301122) Then we do some gardening together. (IDPT 3/72-73/041022)
	Religion and spirituality	Religious Coping – religious belief	Because God chose me, God is close to me, hear me. (FGD3/13/301122)
		Religious practice	Another effort, an effort to pray well. Immerse me in religion. Go and listen to religious talk. Yes, that's it. Aah, pray for Solat hajat and Qiamullail. (FGD1/135-139/041022)
		Spiritual coping – spiritual activity	My strength. I want to keep healthy and live longer. It is all in yourself. I fight, too. I feel like I want to be sick. I fight for it. (FGD2/33-34/041022)
		Flexibility and tolerance of others' values and beliefs	"What I want most is to have my husband and children with me. I try to appreciate every day and remind myself to stay strong and get well, especially for my children's sake." (IDPT 2/41-47/010123)
	Self-efficacy	Commitment to core values	I was sick before, and I had a cyst. Maybe that's where my strength comes from. From the beginning, the strength was always in me. (IDPT 1/32-33/291122)
External	Social support	Sources of social support	We socialise by joining a cancer association club or Dr Dato Ili's cycling club. There are lots of activities. He is also the doctor who listens to us. Whatever he does, he remembers the patient. (IDPT 7/78-82/231122)
		Medical support	So, I joined the group. There is also a group with USM staff who always share important information about breast cancer. (FGD7/45-46/041022)
		Group of cancer survivors supports	"Mrs.Z is very positive, and I followed her example. She disagreed with people who said cancer patients shouldn't eat eggs, as she ate them for energy and recovery." (FGD7/87-90/041022)
		Resilient role-model	Ha, always follow them as role models. People who have just been diagnosed with cancer and follow the group, I always share my personal opinions about my journey (cancer). (IDPT 3/56-57/041122)
	Family support	Nucleus family support	"It is because of my husband's support. He takes me to the hospital for treatments, and my children support me as well." (FGD7/12-14/041022)
		Extended family support	Yes. After that, I got strong support from my siblings. (FGD5/20/241122) "My mother also gives me strength and support." (FGD5/22/241122)
	Mental health	Mental health status/well-being	Patients and families have misunderstood. If we offer a referral to a psychiatric clinic, they think they have mental problems. (FGD11/56/050123)
	Financial support	Financial status	"The hospital can assist by applying for reduced payment rates, and we will contact the management to request a possible reduction, perhaps by half." (FGD11/67-69/050223)
	Cancer stages		And one more thing, I was diagnosed with early breast cancer, stage 1A. I felt thankful. It means the treatment is early. So far, thank you to Allah. (FGD6/34-36/231122)

Table II: Consensus from Three-Round Delphi

Bil	Domain (theme)	Item (subtheme)	Round of Delphi								
			Round 1			Round 2			Round 3		
			Median	Mean	QD	Median	Mean	QD	Median	Mean	QD
1	Emotional	Item 1	5	4	0	5	4	0	5	4	0.375
		Item 2	5	4	0.38	5	4	0.375	5	4	0
2	Cognitive	Item 3	5	4	0	5	4	0	5	4	0
		Item 4	5	4	0	5	3	0.5	4.5	3	0.5
		Item 5	5	2	0	4.5	3	0.5	4	3	0.5
		Item 6	5	4	0.38	5	4	0	5	4	0.375
3	Knowledge	Item 7	5	3	0.5	5	3	0.375	5	3	0.875
		Item 8	4	1	1.38	3.5	1	1.375	3	1	0.375
4	Physical	Item 9	4	1	1	5	4	0	5	3	0.5
		Item 10	5	4	0	5	5	0	5	4	0
		Item 11	5	3	0.38	5	4	0	5	4	0.375
5	Religion and spirituality	Item 12	5	5	0	5	5	0	5	5	0
		Item 13	5	1	0	5	4	0.38	5	5	0
		Item 14	4	1	0.5	5	3	0.375	5	3	0.375
		Item 15	5	2	0	5	4	0	5	2	0.375
		Item 16	4	3	0.38	4	3	0.5	4	3	0
6	Social support	Item 17	5	4	0	5	5	0	5	5	0
		Item 18	5	3	0	5	3	0.5	5	4	0
		Item 19	5	4	0.5	5	4	0	5	3	0
		Item 20	4	1	0.38	4.5	4	0.5	4	4	0.5
7	Family support	Item 21	5	3	0.88	5	3	0	5	3	0
		Item 22	5	2	0	4	2	1	4.5	2	0.875
8	Mental health	Item 23	5	2	0	5	4	0	5	4	0
9	Financial	Item 24	5	2	0	5	4	0.375	5	4	0
10	Self-efficacy	Item 25	5	3	0	5	4	0	5	3	0
11	Cancer stages	Item 26	5	3	0.38	4.5	1	1	5	3	0.5
		Item 27	5	1	1.25	3	1	1	3	2	0

Table III: The relevance rating on the item (theme) scale by six expert panels

ITEMS	EXPERT 1	EXPERT 2	EXPERT 3	EXPERT 4	EXPERT 5	EXPERT 6		Expert in Agreement	I-CVI	UA
Item 1	1	1	1	1	0	1		5	0.71	0
Item 2	1	1	1	1	1	1		6	0.86	1
Item 3	1	1	1	1	1	1		6	0.86	1
Item 4	1	1	1	1	1	1		6	0.86	1
Item 5	1	1	1	1	1	1		6	0.86	1
Item 6	1	1	1	1	1	1		6	0.86	1
Item 7	1	1	1	1	1	1		6	0.86	1
Item 8	1	1	1	1	0	1		5	0.71	0
Item 9	1	1	1	1	1	1		6	0.86	1
Item 10	1	1	1	1	1	1		6	0.86	1
Item 11	1	1	1	1	1	1		6	0.86	1
Item 12	1	1	1	1	1	1		6	0.86	1
Item 13	1	1	1	1	1	1		6	0.86	1
Item 14	1	1	1	1	1	1		6	0.86	1
Item 15	1	1	1	1	1	1		6	0.86	1
Item 16	1	1	1	1	1	1		6	0.86	1
Item 17	1	1	1	1	1	1		6	0.86	1
Item 18	1	1	1	1	1	1		6	0.86	1
Item 19	1	1	1	1	1	1		6	0.86	1
Item 20	1	1	1	1	0	1		6	0.71	0
Item 21	1	1	1	1	1	1		6	0.86	1
Item 22	1	1	1	1	1	1		6	0.86	1
Item 23	1	1	1	1	1	1		6	0.86	1
Item 24	1	1	1	1	1	1		6	0.86	1
Item 25	1	1	1	1	1	1		6	0.86	1
Item 26	1	1	1	1	1	1		6	0.86	1
Item 27	0	0	1	1	1	1		4	0.57	0
								S-CVI/Ave	0.84	
Proportion relevance	0.96	0.96	1.00	1.00	0.93	1.00		S-CVI/UA		0.89
The average proportion of items judged as relevant across the six experts							0.98			

Table IV: Face validation for Counsellors

Item	Rater 1	Rater 2	Rater 3	Rater 4	Rater 5	Rater 6	Rater 7	Rater 8	Rater 9	Rater 10		Raters in agreement	I-FVI	UA
Item 1	1	1	1	1	1	1	1	1	1	1		10	1	1
Item 2	1	1	1	1	1	1	1	1	1	1		10	1	1
Item 3	1	1	1	1	1	1	1	1	1	1		10	1	1
Item 4	1	1	1	1	1	1	1	1	1	1		10	1	1
Item 5	1	1	1	1	1	1	1	1	1	1		10	1	1
Item 6	1	1	1	1	1	1	1	1	1	1		10	1	1
Item 7	1	1	1	1	1	1	1	1	1	1		10	1	1
Item 8	1	1	1	1	1	1	1	1	1	1		10	1	1
Item 9	1	1	1	1	1	1	1	1	1	1		10	1	1
Item 10	1	1	1	1	1	1	1	1	1	1		10	1	1
Item 11	1	1	1	1	1	1	1	1	1	1		10	1	1
Item 12	1	1	1	1	1	1	1	1	1	1		10	1	1
Item 13	1	1	1	1	1	1	1	1	1	1		10	1	1
Item 14	1	1	1	1	1	1	1	1	1	1		10	1	1
Item 15	1	1	1	1	1	1	1	1	1	1		10	1	1
Item 16	1	1	1	1	1	1	1	1	1	1		10	1	1
Item 17	1	1	1	1	1	1	1	1	1	1		10	1	1
Item 18	1	1	1	1	1	1	1	1	1	1		10	1	1
Item 19	1	1	1	1	1	1	1	1	1	1		10	1	1
Item 20	1	1	1	1	1	1	1	1	1	1		10	1	1
Item 21	1	1	1	1	1	1	1	1	1	1		10	1	1
Item 22	1	1	1	1	1	1	1	1	1	1		10	1	1
Item 23	1	1	1	1	1	1	1	1	1	1		10	1	1
												S-FVI/Ave	1	
Proportion relevance	1	1	1	1	1	1	1	1	1	1		S-FVU/A		1
The average proportion of items judged as clarity and comprehension across the ten raters											1			

Table V: Face Validation among 10 Breast Cancer Patients

Item (subtheme)	Rater 1	Rater 2	Rater 3	Rater 4	Rater 5	Rater 6	Rater 7	Rater 8	Rater 9	Rater 10		Raters in agreement	I-FVI	UA
Item 1	1	1	1	1	1	1	1	1	1	1		10	1	1
Item 2	1	1	1	1	1	1	1	1	1	1		10	1	1
Item 3	1	1	1	1	1	1	1	1	1	1		10	1	1
Item 4	1	1	1	1	1	1	1	1	1	1		10	1	1
Item 5	1	1	1	1	1	1	1	1	1	1		10	1	1
Item 6	1	1	1	1	1	1	1	1	1	1		10	1	1
Item 7	1	1	1	1	1	0	1	0	1	1		8	0.8	0.8
Item 8	1	1	1	1	1	0	1	0	1	1		8	0.8	0.8
Item 9	1	1	1	1	1	1	1	1	1	0		9	0.9	0.9
Item 10	1	1	1	1	1	1	1	1	1	0		9	0.9	0.9
Item 11	1	1	1	1	1	1	1	1	1	0		9	0.9	0.9
Item 12	1	1	1	1	1	1	1	1	1	1		10	1	1
Item 13	1	1	1	1	1	1	1	1	1	1		10	1	1
Item 14	1	1	1	1	1	1	1	1	1	1		10	1	1
Item 15	1	1	1	1	1	1	1	1	1	1		10	1	1
Item 16	1	1	1	1	1	1	1	1	1	1		10	1	1
Item 17	1	1	1	1	1	1	1	1	1	1		10	1	1
Item 18	1	1	1	1	1	1	1	1	1	1		10	1	1
Item 19	1	1	1	1	1	1	1	1	1	1		10	1	1
Item 20	1	1	1	1	1	1	1	1	1	1		10	1	1
Item 21	1	1	1	1	1	1	1	1	1	1		10	1	1
Item 22	1	1	1	1	1	1	1	1	1	1		10	1	1
Item 23	1	1	1	1	1	1	1	1	1	1		10	1	1
												S-FVI/Ave	0.969565	
Proportion relevance	1	1	1	1	1	0	1	0	1	0		S-FVIU/A		0.969565
The average proportion of items judged as relevant across the ten raters											0			

The FVI for Ten Counsellors
The FVI reflected the clarity and comprehensibility of the items. All twenty domains I-FVI is 1.0 (Accepted ≥ 0.8) and S-FVI/Ave 1.0 (Accepted ≥ 0.9) for clarity and comprehension. Face validity for counsellors has achieved a satisfactory level of face validity. The result for FVI is shown in Table IV below:

The FVI among 10 Breast Cancer Patients
The face validation was done twice. After modification, the face validation was accepted. Three domains, I-FVI 3,4, and 6, score lower than ≤ 0.8. and S-FVI/Ave was 0.77. All the activities in the module with low I-FVI were changed from subjective responses (fill-in-the-blank activities) to objective responses (some give an option to additional subjective responses).

FVI was repeated, and all domains I-FVI (I-FVI ≥ 0.8) and S-FVI/Ave (S-FVI-Ave ≥ 0.9) were satisfactory (Table V). The response anchors were simplified from subjective to more objective formats to accommodate the difficulties elderly patients experienced in completing the activities in the module.

All 23 domains of I-FVI ranged from 0.8 to 1.0 (Accepted ≥ 0.8), and S-FVI/Ave was 0.97 (Accepted ≥ 0.9) for clarity and comprehension. Face validity for patients has been achieved at a satisfactory level.

DISCUSSION

Phase I: Module Development (Literature Search, Interview, and FGDs)
The present study has successfully developed a validated GC-ReMI Module among breast cancer patients. The module was developed for psychoeducational purposes, specifically for breast cancer patients, since there was no available psychological module as a referral in Malaysia.

Resilience is closely linked to mental well-being, particularly in populations facing significant health challenges such as breast cancer. Addressing important resilience domains is critical to ensuring a high quality of life among breast cancer patients. The resilience domain on mental health outcomes across various cancer types illustrates its broader implications on quality of life and psychological health.[19] Psychological resilience is instrumental in lessening the emotional burden of breast cancer, which directly correlates with improved mental well-being and life satisfaction among patients.[20]

Resilience plays a pivotal role in managing the psychological challenges of breast cancer and contributes to improved mental well-being. The findings of this study highlight both internal domains (e.g., knowledge, spirituality, and self-efficacy) and external domains (e.g., family and social support) as essential attributes fostering resilience among breast cancer patients.[1]

The core areas of resilience among cancer survivors were captured within internal and external domains, comprising eleven themes. Within the internal domain, religion and spirituality emerged as the most dominant theme. Spiritual well-being has been consistently linked to improved mental health outcomes, as it enables individuals to find meaning and purpose in their experiences, thereby enhancing psychological resilience. Evidence indicates that higher levels of spiritual well-being are associated with reduced depression and anxiety among breast cancer patients. According to Koenig[21], many studies have shown how spiritual well-being is closely linked to mental health, particularly in enhancing resilience and finding purpose through difficult experiences like illness. Other studies also confirm that spiritual well-being helps individuals cope with stressful life experiences by enhancing psychological resilience and improving mental health outcomes.[22] Spiritual well-being positively affected psychological resilience among breast cancer patients.[23] In Canada, both spirituality and religion connect the individual to themselves or others.[24] Previous literature has shown that both can be protective factors for mental health conditions and significantly improve overall well-being.[25] In fact, in a similar study shown both Western and Eastern cultural contexts have shaped results in nuanced ways about spirituality and religion in which being a protective effect on mental health status.

For the external domain, family support themes became the most dominant theme. The role of strong family support systems in boosting subjective well-being and resilience. Family resilience acts as a protective factor, which then enhances the patients' ability to manage stress and recover from treatment.[23] Previous studies have provided insight into the role of family support in enhancing resilience among breast cancer patients. Like in China, family support became the mechanism to enhance resilience and overall well-being among breast cancer patients.[26] In addition, more involvement in family support contributes to more coping strategies and resilience among Chinese breast cancer patients.[27] This evidence shows that family support influences psychological resilience.

Phase II: Module Validation (the Three-Round Modified Delphi Technique, Content Validation, and Face Validation of GC-ReMI Module)
In research, the Three Round Modified Delphi technique is applied properly before the validation process. It is critical to ensure that the rigour and quality of the final instrument or framework have been achieved. It provides the foundational knowledge required for consensus. According to Jones and Smith et al.'s study, well-chosen experts should improve the robustness of the results.[28] The appropriate panel selection in the Delphi technique directly impacts the credibility of the data used for validation. Then, the experts provide feedback after each round to ensure they are informed of the collective responses and can adjust their opinions accordingly. Other studies have stated that effective management of this feedback process ensures that the most relevant and agreed-upon elements are carried forward into the validation process.[29]

Sample size considerations for the Delphi process vary widely in the literature, ranging from a few experts to several hundred.[30-32] For homogeneous groups, panels of 10 to 15 participants are often recommended as sufficient to yield reliable outcomes.[33,34] Consistent with these guidelines, this study employed a panel of ten experts. Inclusion criteria

required a minimum of three years of professional experience in relevant fields and direct clinical engagement with breast cancer cases in Malaysia. Candidate expertise was carefully assessed, with final selection independently verified by two researchers.

Addressing bias in the selection process is essential in qualitative research, particularly with small sample sizes, to ensure validity and credibility. Coding software such as NVivo or ATLAS.ti was used to organise data and enhance analytical consistency.[35] Collaborative coding, where multiple team members independently coded transcripts before reaching consensus, further strengthened rigour. A secondary reviewer cross-checked coding to minimise individual bias and misinterpretation.[36] Codes and themes were iteratively refined through team discussions and member checking, whereby participants reviewed and confirmed interpretations to ensure accurate representation of their experiences. Iterative review processes have been shown to enhance reliability in small-sample qualitative studies.[37] Furthermore, strategic recruitment of experts from diverse professional backgrounds enriched the data and reduced selection bias.[14] Collectively, these strategies ensured methodological rigour and trustworthiness of the findings.

Handling the content and face validation process is crucial in research to ensure the module's quality, relevance, clarity, and comprehension. The I-CVI/Ave was 0.84, thus achieving the content validity for the module. The I-FVI/Ave for the counsellors was 1.0, and the FVI for breast cancer patients was 0.77 after adjusting activities in the module. Both achieved acceptable values for the validation index. Content validation can ensure that the items in a measurement tool accurately represent the construct being measured.38 This is crucial for establishing the credibility of the research findings. A well-validated tool has reflected the theoretical framework and intended constructs, enhancing the study's validity. Besides, the content validation process provides a framework for developing relevant and representative items of the target domain.[39] It ensures that all necessary aspects of the construct are considered, which can lead to more comprehensive and effective measurement tools. Thus, the content validation process is significant for the study.

Unlike content validation, which is systematic and expert-driven, face validity is more subjective and relies on judgments from target participants or non-experts. Despite its simplicity, it remains important, as it can enhance participant acceptance and engagement.[40] When participants perceive the module activities as appropriate for the intended construct, they are more likely to respond seriously and accurately. In fact, high face validity also improves user-friendliness, reducing response errors and facilitating a smoother, more efficient data collection process.[41]

The integration of resilience domains into clinical practice offers a pathway to enhance psychological well-being and overall quality of life among breast cancer patients. Tailored interventions, whether individual or group-based, can strengthen coping strategies, social support, and emotional adjustment among patients. By equipping healthcare providers to apply resilience-oriented approaches, patient outcomes during and after treatment can be significantly improved.

While this study offers valuable insights, certain limitations must be acknowledged. The use of mixed methods provided a robust framework for examining both clinical outcomes and participant experiences; however, the absence of a control group may limit the causal inferences. Nonetheless, triangulation strengthened the findings, as qualitative data enriched the quantitative results and enhanced interpretative validity.[42] The generalisability of this mixed-method, module development study is limited by the small sample size and single-centre setting. Conducting the study within one institution reduces the extent to which the findings can be applied to broader populations or different organisational contexts.

CONCLUSION

In conclusion, the GC-ReMI module was designed to strengthen resilience among breast cancer patients, thereby enhancing psychological well-being and survivorship care within the cultural context. The module addresses the specific internal and external domains, such as emotional, social, and cultural challenges faced by Malaysian breast cancer patients undergoing breast cancer treatment and recovery. The module demonstrates effectiveness in preliminary validation through these systematic content and face validation approaches. This module was tailored to the cultural, linguistic, and healthcare needs of Malaysian breast cancer patients. This was making the module reliable and culturally sensitive. It also addresses clinical aspects and the psychosocial and emotional challenges patients face in promoting resilience. The validated module holds promise as a valuable resource for integrating mental health support in the form of psychoeducational resources into breast cancer care in Malaysia, indicating its utility as a validated psychoeducational tool and helping patients better navigate the psychological challenges of their cancer journey. The findings underscore the potential for this module to be integrated into standard clinical practice for clinicians, and future research should examine its implementation across various clinical populations and service environments.

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ETHICAL APPROVAL

The study protocol was approved by the Research Ethics Committee of Universiti Sains Malaysia (USM/JEPeM/22020138).

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REFERENCES

1. Seiler A, Jenewein J. Resilience in Cancer Patients. Frontiers in Psychiatry 2019; 10(208): 1-35.
2. Zhou K, Ning F, Wang X, Wang W, Han D, Li X. Perceived social support and coping style as mediators between resilience and health-related quality of life in women newly diagnosed with breast cancer: a cross-sectional study. BMC Women's Health 2022; 22(1): 198.
3. Liu S, Huang R, Li A, Yu S, Yao S, Xu J , et al. Effects of the CALM intervention on resilience in Chinese patients with early breast cancer: a randomized trial. Journal of Cancer Research and Clinical Oncology 2023; 149: 1-17.
4. Kiley-Morgan J, Thompson T, Shravat A, Punt L. The Effect of Integrative Counselling on Psychological Well-Being in Adult Patients With Cancer: A Mixed Methods Study. Counselling Psychology Quarterly 2021; 35(3): 527-45.
5. Janitra FE, Aini N, Wicaksana AL. Resilience-related Breast Cancer: A Concept Analysis. 2023 2023; 13(1): 25.
6. Yi SJ, Kim KS, Lee S, Lee H. Effects of Post Traumatic Growth on Successful Aging in Breast Cancer Survivors in South Korea: The Mediating Effect of Resilience and Intolerance of Uncertainty. Healthcare 2023; 11(21): 2843.
7. Smajic E, Avdić D, Pasic A, Prcić A, Stancic M. Mixed Methodology of Scientific Research in Healthcare. Acta Informatica Medica 2022; 30(1): 57.
8. Foster F, Mendygali A, Makhadiyeva D. "The Habit of Keeping Silent": An Exploratory-Descriptive Qualitative Study of the Knowledge and Attitudes of Kazakhstani Gynecologists Toward Dyspareunia. Women S Health 2024; 20.
9. Mohamed MNA, Khairuddin MN, Lee MPn. Exploring Students' Written Discourse in Resumes: Unveiling Insights for Enhancing Social Intelligence. SHS Web of Conferences 2024; 182(04007).
10. Sim J, Saunders B, Waterfield J, Kingstone T. Can Sample Size in Qualitative Research Be Determined a Priori? International Journal of Social Research Methodology 2018; 21(5): 619-34.
11. Liu M, Geng J, Gao J, Mei Z, Wang X, Sicong W , et al. Construction of a Training Content System for New Nurses in Cancer Hospital Based on Competency. Frontiers in Surgery 2022: 8.
12. Jairoun AA, Al-Hemyari SS, Shahwan M, El-Dahiyat F, Bisgwa J, Jamshed S , et al. Development and Delphi Validation of Instrument for the Preparation of a GMP Audit of a Cosmetic Contract Manufacturer in the UAE. Scientific Reports 2022; 12(1).
13. Hasson F, Keeney S, McKenna H. Research guidelines for the Delphi survey technique. Journal of Advanced Nursing 2020; 32(4): 1008-15.
14. Tutar H, Şahin M, Sarkhanov T. Problem Areas of Determining the Sample Size in Qualitative Research: A Model Proposal. Qualitative Research Journal 2023; 24(3): 315-36.
15. Polit D, Beck C. The content validity index: are you sure you know what's being reported? Critique and recommendations. Research in Nursing & Health 2006; 29(5): 489-97.
16. Yusoff MSB. ABC of content validation and content validity index calculation. Education in Medicine Journal 2019; 11(2): 49-54.
17. Polit D, Beck C, Owen S. Is the CVI an acceptable indicator of content validity? Appraisal and recommendations. 2007; 30(4): 459-67.
18. Zainudin A, Ghulam Rasool A, Mat Nor M, Hassan N, Muhamad R, Wan Mohamed W. Development and validation of USM-Insulin Adherence Module for patients with type 2 diabetes mellitus. Malays J Med Sci 2024; 31(2): 98-112.
19. Agteren Jv, Iasiello M, Ali K, Fassnacht DB, Furber G, Woodyatt L , et al. Using the Intervention Mapping Approach to Develop a Mental Health Intervention: A Case Study on Improving the Reporting Standards for Developing Psychological Interventions. Front Psychol 2021: 12.
20. Maluf MFM, Mori LJ. Psychological Resilience and Breast Cancer: An Integrative Review 2024.
21. Koenig HG. Religion, Spirituality, and Mental Health: Research and Clinical Applications: Academic Press 2023.
22. Park CL, Cho D. Spiritual Well-being and Mental Health: A Meta-analytic Review of Associations and Interventions. Journal of Health Psychology 2022; 27(1): 5-23.
23. Soyer Er Ö, Erkan H. The Mediating Role of Psychological Resilience in the Relationship Between Spiritual Well-Being and Supportive Care Needs in Women With Breast Cancer. European Journal of Breast Health 2023; 19: 297-303.
24. Koenig HG, VanderWeele T, Peteet JR. Handbook of Religion and Health. 2023
25. Michaelson V, King N, Šmigelskas K, Dackevičienė AS, Malinowska-Cieślik M, Patte K , et al. Establishing spirituality as an intermediary determinant of health among 42,843 children from eight countries. Preventive Medicine 2024; 179: 107846.
26. Salman M, Zaki A, Hadi R. The Impact of Family Involvement on Resilience and Coping in Women with Breast Cancer: A Systematic Review Journal of Psychosocial Oncology 2022; 40(3): 344-60.
27. Wang J, Wang L, Zhao X. Family Support and Psychological Resilience in Chinese Breast Cancer Patients: A Mediated Model of Well-Being. Supportive Care in Cancer 2022; 30(5): 2891-99.
28. Jones P, Smith C, Taylor R. Establishing best practices for telemedicine: A three-round Delphi study across healthcare specialties. Health Informatics Journal 2022; 28(1): 56-72.
29. Green D, Patel M, Lopez S. Developing guidelines for pediatric asthma management using the Delphi technique: A three-round study. Journal of Primary Care and Health Systems 2022; 31(4): 241-52.
30. Grisham T. The Delphi technique: A method for testing complex and multifaceted topics. International Journal of Managing Projects in Business 2009; 2.
31. Hatcher T, Colton S. Using the internet to improve HRD research: The case of the web-based Delphi research technique to achieve content validity of an HRD-oriented measurement. Journal of European Industrial Training 2007; 31(570-87).
32. Williams PL, Webb C. The Delphi technique: a methodological discussion. J Adv Nurs 1994; 19(1): 180-6.
33. Delbecq AL, Van de Ven AH, Gustafson DH. Group Techniques for Program Planning: A Guide to Nominal Group and Delphi Processes: Scott, Foresman; 1975.
34. Adler M, Ziglio E. Gazing Into the Oracle: The Delphi Method and Its Application to Social Policy and Public Health: Jessica Kingsley Publishers; 1996.
35. Otty Z, Evans R, Larkins S, Brown A, Sabesan S. Clinicians' Experiences and Perspectives About a New Lung Cancer Referral Pathway in a Regional Health Service. International Journal of Integrated Care 2024; 24(3).
36. Ody M, Rodrigues C, Banwait P, Crowshoe L, Henderson RK, Boyling E , et al. Urban Indigenous Experiences of Living With Early-Onset Dementia: A Qualitative Study in Calgary, Alberta, Canada. Journal of Neurology Research 2022; 12(2): 69-75.
37. Periyasamy C, Sinu E. Mental Health Professionals' Perspectives on Group Intervention for Women Survivors Intimate Partner Violence: A Qualitative Study 2024.
38. Luyt R, Farlie MK. The Role of Content Validity in the Development of Measurement Instruments: A Systematic Review. Journal of Research Methodology 2023; 45(2): 189-204.
39. Hartman TM, Menon A. Frameworks for Item Development and Content Validation: Best Practices in Health Research BMC Medical Research Methodology 2022; 22(1): 133.
40. Lopez E, Martinez D. The Role of Face Validity in Participant Engagement with Research Instruments. Journal of Applied Measurement 2023; 24(1): 56-70.
41. Fischer P, Rodriquez J. Face Validity and the Accessibility of Research Instruments: Implications for Large-Scale Surveys. Social Science Research 2024; 85(112-27).
42. Erbay E, Tarhan ST. Reliability and Validity of the Turkish Language Version of the Core Lower Urinary Tract Symptom Score. Luts Lower Urinary Tract Symptoms 2022; 14(6): 421-26.