

**THE EFFECTIVENESS OF ACCEPTANCE AND
COMMITMENT THERAPY (ACT) ON DISEASE
ACCEPTANCE AND QUALITY OF LIFE
AMONG BREAST CANCER PATIENTS**

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**THE EFFECTIVENESS OF ACCEPTANCE AND
COMMITMENT THERAPY (ACT) ON
DISEASE ACCEPTANCE AND QUALITY OF
LIFE
AMONG BREAST CANCER PATIENTS**

by

SONG WENJUN

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LIST OF SYMBOLS

χ^2/df	Chi-square to the degree of freedom ratio
I^2	Heterogeneity
F	Main Effect
Cronbach's α	Internal consistency
p	Probability value
R	Pearson's correlation coefficient
df	Chi-square

LIST OF ABBREVIATIONS

AAQ II (M)	Acceptance and Action Questionnaire Malay Version II
ACT	Acceptance and Commitment Therapy
AMDI	Advanced Medical and Dental Institute
ANOVA	Analysis of Variance
AVE	Average Variance Extracted
Brief COPE	Brief Coping Orientation to Problems Encountered
CBT	Cognitive Behavior Therapy
CFA	Confirmatory Factor Analysis
CFI	Comparative Fit Index
CIs	Confidence Intervals
CVI	Content Validity Index
CVI/Ave	Content Validity Index/Average
CVI/UA	Content Validity Index/Universal Agreement
EFA	Exploratory Factor Analysis
EORTC-QLQ	European Organization for Research and Treatment of Cancer Quality of Life Core Questionnaire
FACIT	Functional Assessment of Chronic Illness Therapy
FACT-B	Functional Assessment of Cancer Therapy-Breast Cancer
GFI	Goodness of Fit Index
HRQL	Health-Related Quality of Life
ICQ-M	Malay Version of the Illness Cognition Questionnaire
LLCI	Lower-Level Confidence Interval
MBSR	Mindfulness-Based Stress Reduction
Mini-MAC	The Short Form of the Mental Adjustment to Cancer Scale

MSPSS-M	Malay Version of the Multidimensional Scale of Perceived Social Support
PROMIS	Patient-Reported Outcomes Measurement Information System
QoL	Quality of Life
RCT	Randomized Controlled Trials
RM	Ringgit Malaysia
RMSEA	Root Mean Square Error of Approximation
S-CVI	Scale-Level Content Validity Index
SD	Standard Deviation
SE	Standard Error
SF-36	Short Form 36-item Health Survey
SMD	Standardized Mean Difference
SPSS	Statistical Package for Social Sciences
SRW	Standardized Regression Weights
TLI	Tucker-Lewis Index
UA	Universal Agreement
ULCI	Upper-Level Confidence Interval
USM	Universiti Sains Malaysia
WHOQOL-BREF	World Health Organization Brief Quality of Life Assessment Scale

LIST OF APPENDICES

- Appendix A Participant Information Sheet And Consent Form
- Appendix B Ethic Approval
- Appendix C Tools of the study

**KEBERKESANAN TERAPI PENERIMAAN DAN KOMITMEN (ACT)
TERHADAP PENERIMAAN PENYAKIT DAN KUALITI HIDUP DALAM
KALANGAN PESAKIT KANSER PAYUDARA**

ABSTRAK

Kanser payudara dikaitkan dengan pelbagai cabaran psikologi dan psiko-sosial bagi pesakit, namun terdapat jumlah kajian terkawal rawak (RCT) yang terhad yang mengkaji impaknya. Kajian ini bertujuan untuk menangani jurang ini dengan menilai kesan Terapi Penerimaan dan Komitmen (ACT) dalam dua fasa kajian. Fasa I menggunakan reka bentuk lintang yang melibatkan 346 pesakit kanser di Malaysia, dengan fokus pada penyesuaian dan pengesahan versi Bahasa Melayu bagi Soal Selidik Kognisi Penyakit (ICQ-M) dan Skala Pelbagai Dimensi Sokongan Sosial (MSPSS-M). Data dikumpulkan melalui soal selidik yang diisi sendiri, dengan analisis dilakukan untuk konsistensi dalaman, kesahan konvergen, kesahan diskriminan, kesahan konstruk, dan kesahan serentak. Dalam Fasa II, 80 pesakit kanser payudara telah didaftarkan dalam kajian RCT dua lengan dengan reka bentuk kumpulan selari. Kajian ini menilai kesan ACT terhadap penerimaan penyakit, kualiti hidup (QoL), sokongan sosial, dan fleksibiliti psikologi pada tiga titik masa, iaitu, garis dasar, pasca-intervensi, dan susulan 12 minggu. Selain itu, peranan mediating penerimaan penyakit serta peranan moderating sokongan sosial terhadap kesan ACT dalam pesakit kanser payudara juga diterokai. Analisis data melibatkan Analisis Varians (ANOVA) bercampur untuk menilai perbezaan antara kumpulan dan titik masa, dengan analisis mediating dilakukan menggunakan makro PROCESS. Fasa I menunjukkan konsistensi dalaman yang kuat dan struktur faktor yang sah untuk kedua-dua MSPSS-M dan ICQ-M. Dalam Fasa II, ACT secara signifikan meningkatkan kognisi penyakit, sokongan

sosial, fleksibiliti psikologi, dan QoL di seluruh tiga titik masa. Kognisi penyakit dikenalpasti sebagai mediator QoL, dengan sokongan sosial berfungsi sebagai moderator. Penemuan ini mencadangkan bahawa ACT adalah tambahan yang berharga kepada regimen rawatan kanser payudara untuk meningkatkan kesejahteraan mental. Ciri psikometrik yang kukuh bagi MSPSS-M dan ICQ-M menyokong kegunaannya dalam menilai sokongan psiko-sosial dan kognisi penyakit di kalangan pesakit kanser payudara, menekankan kepentingan mengintegrasikan penjagaan psiko-sosial ke dalam pelan rawatan.

**THE EFFECTIVENESS OF ACCEPTANCE AND COMMITMENT
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ABSTRACT

Breast cancer is associated with various psychological and psychosocial challenges for patients, yet there is a limited number of randomized controlled trials (RCTs) examining its impact. This study aimed to address this gap by evaluating the effects of Acceptance and Commitment Therapy (ACT) in two study phases. Phase I employed a cross-sectional design involving 346 cancer patients in Malaysia, focused on adapting and validating the Malay version of the Illness Cognition Questionnaire (ICQ-M) and the Multidimensional Scale of Perceived Social Support (MSPSS-M). Data were collected through self-administered questionnaires, with analyses performed for internal consistency, convergent validity, discriminant validity, construct validity, and concurrent validity. In Phase II, 80 breast cancer patients were enrolled in a two-arm randomized controlled trial (RCT) with a parallel group design. The study assessed the effects of ACT on disease acceptance, quality of life (QoL), social support, and psychological flexibility at three-time points, i.e., baseline, post-intervention, and 12-week follow-up. Additionally, the mediating role of disease acceptance, as well as the moderating role of social support about the effects of ACT in breast cancer patients, were explored. Data analysis involved mixed Analysis of Variance (ANOVA) to assess differences between groups and time points, with mediation analysis conducted using the PROCESS macro. Phase I demonstrated strong internal consistency and valid factor structures for MSPSS-M and ICQ-M. In Phase II, ACT significantly enhanced illness cognition, social support, psychological flexibility,

and QoL across three-time points. Illness cognition was identified as a mediator of QoL, with social support as a moderator. These findings suggest that ACT is a valuable addition to breast cancer treatment regimens for improving mental well-being. The robust psychometric properties of the MSPSS-M and ICQ-M support the utility in assessing psychosocial support and illness cognition among breast cancer patients, underscoring the importance of integrating psychosocial care into treatment plans. breast cancer, Acceptance and Commitment Therapy, illness cognition, social support, quality of life, psychological flexibility

CHAPTER 1

INTRODUCTION

1.1 Background of the Study

Breast cancer remains a significant public health concern due to its rising incidence rates and severe psychological effects on patients. As the most common cancer among women, it presents particular challenges related to diagnosis, treatment, and QoL. Psychological interventions are crucial in helping patients cope with these challenges, fostering emotional resilience, and promoting overall well-being. To effectively meet the needs of breast cancer patients, it is imperative to understand the interactions between disease acceptance, social support, and psychological well-being following psychological intervention. This context highlights the prevalence of breast cancer in Malaysia, the psychological ramifications of the condition, and the potential contributions of psychological therapies, including ACT, in enhancing patient outcomes.

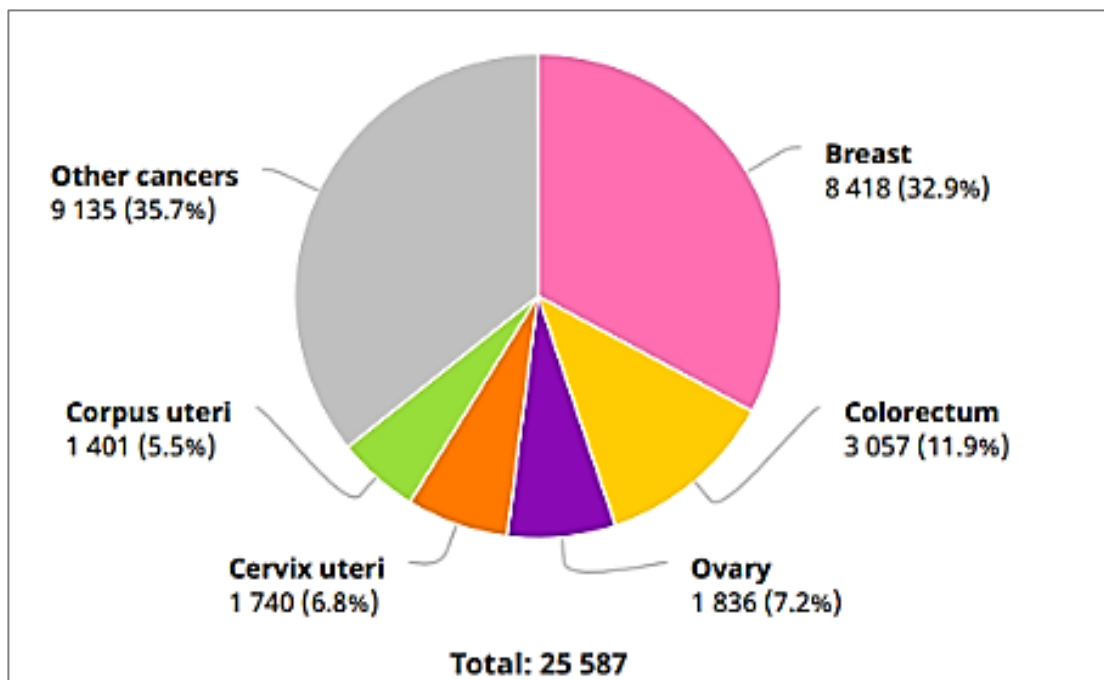
1.1.1 Brief Prevalence and Occurrence of Breast Cancer

According to the World Health Organization (WHO, 2020), breast cancer was the most prevalent cancer type among women in Malaysia, representing 32.9 percent of newly diagnosed cancer cases in 2020. Additionally, breast cancer dominated the cancer landscape in Malaysia that year, with 8,418 new cases, making it the most common cancer, with an incidence rate of 17.3 percent. The cumulative risk of developing new cases of breast cancer is 5.29 percent. In terms of mortality, breast cancer accounted for 3,503 deaths, ranking second after lung cancer, with a mortality rate of 11.9 percent and a cumulative risk of 2.24 percent. The 5-year prevalence across

all age groups was significantly high, reaching 29,453 cases, corresponding to a rate of 187.18 per 100,000 individuals. Figure 1.1 presents the latest statistics from the International Agency for Research on Cancer (IARC), a World Health Organization (WHO) branch. According to the data, breast cancer ranked among the top five cancers in Malaysia, with a total of 8418 reported cases. It was identified as a leading cause of death among females due to neoplasms, based on the IARC report from 2020.

Figure 1.1

Number of new breast cancer cases among females in Malaysia



Source: IARC (2020)

1.1.2 Psychosocial Impact of Breast Cancer

Breast cancer has a high incidence, but its survival rate is generally higher than that of most other cancers. The five-year standardized relative survival rate for breast cancer was 85.0 percent, while the one-, five-, and ten-year observed survival rates were 95.8 percent, 85.0 percent, and 75.9 percent, respectively (Giaquinto et al., 2022).

Despite improved long-term survival rates, distress levels among breast cancer patients fluctuate at different stages of the disease (Lo-Fo-Wong et al., 2016), and most patients experience poor QoL (Duijts et al., 2011). Furthermore, due to the shift in the modern medical model that emphasizes patient-centered care, breast cancer treatment now prioritizes extending patients' survival times, reducing mortality rates, and enhancing QoL (Mokhatri-Hesari & Montazeri, 2020).

Coping with breast cancer imposes significant stress on patients as they navigate new challenges and decisions. Accepting the diagnosis, undergoing treatments, understanding the prognosis, managing potential side effects, confronting the possibility of relapse, and facing an uncertain future are stressful processes that can lead to psychological instability, potentially resulting in depression or other mood disorders. A considerable number of breast cancer patients encounter various psychological symptoms throughout the cancer journey, including distress, anxiety, depression, cognitive impairment, and issues related to body image and sexual function (Guimond et al., 2020). In Asia, breast cancer patients - particularly those with comorbidities and undergoing chemotherapy - experience diminished health-related quality of life (HRQL), exacerbated by insufficient social support and unmet needs (Ho et al., 2018). Malay women, in particular, have reported lower HRQL due to heightened general and breast-specific symptoms (Yusuf et al., 2013). Notably, the psychological domain has emerged as a significant area of unmet needs among Malaysian breast cancer patients, affecting the HRQL. Additionally, early breast cancer survivors with late-stage diagnoses and more significant unmet psychological and physical needs are more likely to experience poor QoL (Edib et al., 2016).

Overall, the psychological state of cancer patients is influenced by the diagnosis, complications, and treatment side effects (Mehnert et al., 2014). Breast cancer patients have a higher rate of mental disorders after diagnosis compared to the general population, with 42 percent meeting strict diagnostic criteria for mental disorders within four weeks of diagnosis, the highest rate among all cancers (Mehnert et al., 2014). Additionally, breast cancer patients are more likely to experience subclinical psychological illness and symptomatic psychological distress, with a prevalence ranging from 30 percent to 75 percent (Nowicki & Ostrowska, 2008).

1.1.3 Potential Role of ACT in Enhancing the Psychological Experience in Breast Cancer

Psychological intervention is significant as a process that offers information and strategies to individuals receiving mental health services, particularly those dealing with severe or terminal illnesses and the family members. These programs typically include stress management, coping skills, illness cognition, mindfulness exercises, and psychological support. Various psychological interventions, such as Cognitive Behavior Therapy (CBT), Mindfulness-Based Interventions (MBIs), and Mind-Body Therapy (MBT), have shown modest to moderate impacts on the psychological distress and QoL of individuals undergoing oncology treatment (Faller et al., 2013; Tran et al., 2020). This indicates that there is room for improvement in these treatments and a need to test new therapies to enhance the effectiveness of psychological interventions for cancer. Recently, ACT has gained increased attention as a promising avenue for cancer patients.

In contrast to other psychological interventions, ACT diverges from a strong emphasis on psychopathological symptoms, prioritizing acceptance and values as influential factors in the emotions of cancer patients instead. This approach better aligns with the unique and evolving nature of cancer adjustment (Hayes et al., 2012). When confronted with cancer, many patients grapple with concerns about the treatment and well-being, fears regarding the future for themselves and the families, the need to reorganize lives, and, in some cases, the prospect of nearing the end of life. The inherent uncertainty and the perceived threat of life loss can lead patients towards denial, instilling doubt about the identity, aspirations, and beliefs, which can, in turn, result in psychological distress. Research indicates that attempting to control or alter this distress can backfire, paradoxically leading to increased levels of distress (Vowles & McCracken, 2010). ACT aims to foster acceptance of positive and negative aspects of one's experiences. This is achieved by cultivating psychological flexibility through six core processes: acceptance, cognitive diffusion, values-based action, connection with the present moment, nurturing an observer self-adaptable to context, and undertaking committed action aligned with significant values (Hayes et al., 2011; Hulbert - Williams et al., 2015). Therefore, ACT appears to align well with the psychological needs of individuals with cancer (Angiola & Bowen, 2013).

1.1.4 The ICQ in Assessing Disease Acceptance

Illness cognition, or disease perception, refers to the arousal of an individual's psychological coping response through cognitive evaluation and emotional expression of the disease when the disease state threatens the health status (Shiloh et al., 2002). Studies have found that patients' cognition of the disease affects the coping and adjustment, including health behaviors related to treatment, treatment compliance, and

emotional responses (Hudson et al., 2014; Richters et al., 2015). This negative effect may directly or indirectly influence the prognosis of the illness, the patient's QoL, and the capacity for social interaction (Croyle & Ditto, 1990; Postolica et al., 2017). Cancer patients, irrespective of the specific type, often experience a range of emotions stemming from the diagnosis and treatment journey, including fear, anxiety, and uncertainty. The depth of the knowledge and cognitive understanding of cancer significantly shapes the coping strategies and emotional responses. With advancements in cancer diagnosis and treatment, the survival rates of cancer patients have increased significantly, and the survival periods have been prolonged (Diet, 2003). In cancer rehabilitation, understanding and measuring disease cognition play a pivotal role (Sint Nicolaas et al., 2016). Therefore, investigating and measuring illness cognition in cancer patients is crucial.

The ICQ examines three important cognitive dimensions: acceptance, perceived benefits, and helplessness (Evers et al., 2001). This study's acceptance dimension is essential, as it gauges how well patients have accepted the diagnosis and how effectively they can live with it. In the context of breast cancer, disease acceptance plays a critical role in psychological adjustment. Acceptance reflects a patient's ability to acknowledge the reality of the illness, thereby reducing emotional struggle and allowing the patient to focus on managing the condition and maintaining a better QoL. The measure focuses more on the cognitive and emotional aspects of illness cognition (Broadbent et al., 2015). As many breast cancer patients face ongoing challenges related to treatment, uncertainty, and potential recurrence, acceptance can serve as a protective factor against emotional distress and psychological inflexibility.

1.1.5 MSPSS and Its Relevance to Social Support Measurement

Social support, defined as the perception of assistance, care, and understanding from others, is vital in alleviating the psychosocial burden associated with cancer. It can act as a buffer against the stress from life's challenging events (Nausheen et al., 2009; Rueger et al., 2016). Social support is an interactive and interpersonal construct that includes how well a social network can provide adequate support in the form of emotional (support that enables one to feel loved and have someone to trust), informational (support in the form of advice and guidance), and instrumental (availability of immediate help) contexts to an individual (Ruiz-Rodríguez et al., 2022b). Social support has been identified as a critical factor in promoting mental well-being and enhancing QoL. Adequate social support can help keep cancer patients mentally healthy by alleviating the negative effects of anxiety, depression, stress, and loneliness, as well as aiding in adaptation to the adverse impacts of the clinical complications of cancer and its treatment (Fong et al., 2017; Wells et al., 2014). Moreover, adequate social support may enhance cancer patients' QoL (Queenan et al., 2010). Therefore, many researchers regard social support as an essential indicator of well-being and develop various measurement tools to evaluate it among cancer patients. Ultimately, the source of social support that supports a cancer patient is critical in determining whether the individual perceives the social support received as positive or negative. Cancer patients commonly regard family, friends, and significant others (such as spouse or partner) as important sources of social support. They utilize this support as a coping mechanism to deal with the challenges of living with cancer and undergoing treatment (Ruiz-Rodríguez et al., 2022b). In this study, the MSPSS measures the perceived social support experienced by breast cancer patients.

1.1.6 Problem Statement

Disease acceptance, which refers to the capacity to recognize and adjust to breast cancer's diagnosis, treatment, and long-term consequences, significantly influences patients' overall well-being and adaptation (Kurpas et al., 2013). Many individuals who struggle to accept the condition find it difficult to cope with the fear of recurrence, have poor strategies for managing treatment side effects such as changes in body image, nausea, vomiting, fatigue, and pain, and consider the financial implications of the disease to be burdensome (Emery et al., 2022). These challenges contribute to increased emotional distress, reduced QoL, and difficulties in effectively managing the treatment and survivorship.

Despite evidence from international RCTs demonstrating the benefits of ACT in enhancing QoL and psychological flexibility among breast cancer patients (Graham et al., 2024; Jiang et al., 2024; Li et al., 2021), significant gaps persist in understanding its impact on disease acceptance and social support, two crucial factors for psychological adjustment in breast cancer patients. In Malaysia, research on these factors remains limited, with a notable shortage of culturally adapted tools and interventions for this population. Specifically, no RCTs in Malaysia have yet examined the effects of ACT on disease acceptance or perceived social support among breast cancer patients, and the lack of validated measures in the Malay language further hinders progress in this area. To address these gaps, this study aims to validate the ICQ-M and the MSPSS-M for cancer patients, providing culturally relevant tools to assess disease acceptance and social support. While ACT has been used in Malaysia to address cognitive impairment in breast cancer patients, these interventions have not focused on disease acceptance, social support, or QoL, underscoring the need for

culturally adapted RCTs that evaluate ACT's effectiveness in these key areas (Shari et al., 2021).

The interplay between social support, disease acceptance, QoL, and ACT is critical for understanding the psychological well-being of breast cancer patients in Malaysia. According to Lazarus and Folkman's transactional theory of stress and coping (1987), social support is a vital resource that can mitigate the negative effects of stressors, enhancing individuals' coping capabilities. Additionally, disease acceptance can significantly influence how individuals perceive and respond to stressors associated with the illness.

Empirical evidence suggests that higher levels of social support are associated with improved psychological outcomes (Wang et al., 2018). However, the specific mechanisms through which social support moderates the effects of ACT on psychological flexibility remain underexplored. This study aims to fill this gap by investigating how social support influences the relationship between ACT interventions and psychological flexibility in breast cancer patients. It hypothesizes that patients with higher levels of social support experience greater psychological flexibility improvements due to ACT interventions compared to those with lower social support. Understanding these dynamics is essential, as social support may provide emotional validation and practical assistance, reinforcing the coping strategies taught in ACT.

Moreover, higher levels of disease acceptance are linked to improved emotional regulation, which can enhance QoL (Han et al., 2021). However, the mechanisms through which disease acceptance moderates the effects of ACT on QoL remain underexplored. This study aims to address this gap by examining how disease

acceptance influences the relationship between ACT interventions and QoL in breast cancer patients. It hypothesizes that patients with higher levels of disease acceptance experience more significant improvements in QoL as a result of ACT interventions compared to those with lower levels of acceptance. Understanding these dynamics is crucial, as disease acceptance may facilitate the internalization of coping strategies taught in ACT, ultimately leading to enhanced QoL and psychological well-being. Focusing on social support and disease acceptance allows a deeper exploration of the mechanisms driving change within ACT. Understanding the roles of social support and disease acceptance may reveal pathways to enhance emotional well-being and coping strategies, potentially leading to more comprehensive support structures for patients. Positioning social support as a moderator and disease acceptance as a mediator illustrates a nuanced understanding of how external (social support) and internal (disease acceptance) factors interact with therapeutic interventions. This approach can provide a more holistic view of patient experiences and treatment effectiveness.

1.2 Research Questions (RQ) and Research Hypotheses (H)

RQ1 Is MSPSS-M a valid and reliable measure to assess the degree of social support in Malaysian cancer patients?

H1 The MSPSS-M is a reliable and valid measure to assess the degree of social support in Malaysian cancer patients.

RQ2 Is ICQ-M a valid and reliable measure to assess illness cognition in Malaysian cancer patients?

- H2** The ICQ-M is a reliable and valid measure to assess illness cognition in Malaysian cancer patients.
- RQ3** Are there any significant changes in disease acceptance, social support, psychological flexibility, and QoL among breast cancer patients following ACT intervention?
- H3a** ACT significantly improves disease acceptance among breast cancer patients at post-intervention and 12-week follow-up.
- H3b** ACT significantly improves social support among breast cancer patients at post-intervention and 12-week follow-up.
- H3c** ACT significantly improves psychological flexibility among breast cancer patients at post-intervention as well as at 12-week follow-up.
- H3d** ACT significantly improves QoL among breast cancer patients at post-intervention and 12-week follow-up.
- RQ4** Does disease acceptance mediate the effects of ACT on QoL in breast cancer patients?
- H4** Disease acceptance mediates the effects of ACT on QoL in breast cancer patients.
- RQ5** Does perceived social support moderate the effects of ACT on psychological flexibility in breast cancer patients?
- H5** Perceived social support moderates the effects of ACT on psychological flexibility in breast cancer patients.

1.3 Research Objectives (RO)

- RO1** To assess the psychometric properties of the MSPSS-M in cancer patients.
- RO2** To assess the psychometric properties of the ICQ-M in cancer patients.
- RO3** To determine the effects of ACT on disease acceptance, psychological flexibility, social support, and QoL with the waitlist control group across three-time points (T1= baseline assessment, T2= 4 weeks, immediately after completion of the intervention, T3 = 12 weeks after completion of the intervention).
- RO4** To explore whether disease acceptance mediates the effect of ACT on QoL in breast cancer patients.
- RO5** To explore whether social support moderates the effect of ACT on psychological flexibility in breast cancer patients.

1.4 Significant of the Study

This study contributes significantly to the field of cancer care by validating the psychometric properties of the MSPSS-M and ICQ-M, providing culturally relevant tools for assessing social support and illness cognition among Malay-speaking cancer patients. This validation enhances the reliability and accuracy of psychological assessments in Malaysia, filling a critical gap in the availability of localized measures. Additionally, by evaluating the effectiveness of ACT in improving disease acceptance, psychological flexibility, and QoL, this study offers evidence-based insights into the

utility of ACT for cancer patients, a group whose mental health is often underemphasized.

Furthermore, exploring the mediating role of disease acceptance and the moderating role of social support adds depth to understanding how ACT influences psychological outcomes. These findings help clinicians refine interventions by considering these key factors in improving mental health and QoL for breast cancer patients. Focusing on a specific cultural context, this study also has broader implications for developing tailored cancer care interventions in Malaysia, supporting a more holistic approach to cancer treatment that addresses emotional and psychological well-being and physical health.

In brief, this thesis follows a structured approach, beginning with Chapter 2 (Literature Review), which provides a comprehensive literature review, summarizing and analyzing relevant research to establish the theoretical framework. Chapter 3 (Methodology) outlines two distinct yet related phases of study design to address formulated research questions. Phase I involves validating the MSPSS-M among cancer patients in Malaysia and examining the psychometric properties of the ICQ-M among cancer patients in Malaysia. Phase II consisted of a randomized controlled trial investigating the effects of an ACT intervention on breast cancer patients. Subsequent Chapter 4 (Results) presents the findings on the (i) examination of questionnaire psychometric properties, (ii) effects of ACT in breast cancer patients, and (iii) the mediating effect of disease acceptance as well as the moderating effect of social support in breast cancer patients following ACT intervention. The final chapter, i.e., Chapter 5 (Discussion and Conclusion), discusses the implications of the findings and subsequent recommendations for future research and practice.

CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

This chapter proceeds with an exploration of essential psychological concepts that are crucial for understanding the experiences of individuals facing breast cancer. It begins by examining disease acceptance, vital in how patients cope with the condition and adjust emotionally. Next, this chapter delves into psychological flexibility, emphasizing its significance in enabling individuals to adapt the thoughts and behaviors in response to health challenges. The discussion then highlights the importance of social support, illustrating how relationships with family, friends, and significant others can enhance emotional well-being and resilience. Additionally, this chapter addresses QoL, focusing on its multifaceted nature and its relevance in the context of breast cancer. Subsequent sections will detail the effects of psychological interventions, drawing on findings from systematic reviews and meta-analyses, and introduce ACT as a promising therapeutic approach. This chapter offers a comprehensive foundation for understanding the interplay between psychological factors and health outcomes by providing theoretical and conceptual frameworks and operational definitions for key terms.

2.2 Disease Acceptance

Disease acceptance is a critical component of psychological adjustment in patients facing chronic or life-threatening illnesses. McCracken and Eccleston (2003) define acceptance as an adaptive process in which individuals stop struggling against the illness and shift focus toward living a meaningful life despite the diagnosis. This

stands in contrast to other coping mechanisms like resignation and fighting spirit. Resignation, also called fatalism, involves a sense of helplessness and passivity, where individuals believe that little can be done to change the circumstances (Gillanders et al., 2015; Livneh, 2000). Williams and Lynn (2010) argue that resignation is linked to higher levels of psychological distress, including depression and anxiety symptoms. Supporting this, Andreu et al. (2012) found that resignation is associated with increased stress and depressive symptoms, suggesting that resignation is a maladaptive response to illness.

In contrast, acceptance has been shown to promote better psychological outcomes. Stanton et al. (2018) report that acceptance correlates with lower levels of anxiety and depression, allowing individuals to manage the emotions and maintain engagement in meaningful activities. Acceptance fosters emotional regulation and helps patients focus on aspects of life they can control, contributing to improved QoL (Ribeyron et al., 2024). While acceptance is generally seen as adaptive, more research is needed to explore how factors such as cultural context and available psychological support influence the sustainability of this coping mechanism.

A fighting spirit is often characterized by optimism and a proactive attitude toward confronting illness, especially in cancer patients (Sharma et al., 2020). Unlike resignation, a fighting spirit involves an active and combative stance against the disease, typically with the hope of overcoming it. However, research on its effectiveness has yielded mixed results. Rand et al. (2016) found that while a fighting spirit may reduce psychological distress in the early stages of illness, it can lead to increased distress when patients face terminal stages or when treatments fail. This raises concerns about the long-term effectiveness of encouraging a fighting spirit, particularly in advanced or terminal cases, where it might create unrealistic

expectations or feelings of guilt if the illness progresses despite patients' best efforts (Zacharia & Karekla, 2022). Thus, while a fighting spirit can provide initial motivation, there may be psychological benefits to integrating it with acceptance as the disease progresses, allowing patients to maintain hope without unrealistic expectations.

Denial is another common coping strategy seen in patients, particularly in the initial stages following a diagnosis. Zhang et al. (2017) describe denial as a protective mechanism that helps buffer the emotional shock of receiving bad news. However, prolonged denial can have negative consequences, such as delaying treatment or preventing individuals from emotionally processing the illness. Ng et al. 's (2017) survey of cancer patients in Japan found that while most patients experience denial shortly after diagnosis, many gradually shift toward acceptance as they come to terms with the condition. The trajectory of denial is still underexplored, particularly across different cultural contexts. In societies where emotional restraint or optimism is highly valued, denial may be more socially reinforced, leading to delays in seeking treatment or emotional adjustment. Understanding the role of cultural norms in shaping denial is crucial for developing appropriate interventions.

Disease acceptance remains a significant challenge for many breast cancer patients, with recent research indicating that 20 percent of individuals following mastectomy still struggle to accept the diagnosis (Han et al., 2022). This highlights the ongoing psychological hurdles in the adaptation process. Empirical studies have shown that acceptance interventions, particularly those involving exposure to unpleasant interoceptive stimuli, can effectively reduce behavioral avoidance, cognitive panic symptoms, and catastrophic thoughts, suggesting that confronting distressing sensations can enhance psychological flexibility (A-tjak et al., 2015). Furthermore, individuals who achieve better acceptance tend to experience lower

anxiety levels, which contributes to more positive health outcomes (Diego et al., 2016). Ultimately, accepting one's diagnosis plays a crucial role in the adaptation process, as it is associated with reduced stress, improved self-esteem, and a smoother transition to new health statuses, underscoring its importance in the overall psychological well-being of patients.

Although some studies suggest that resignation and a fighting spirit may serve as relevant coping strategies for breast cancer patients (Ekwall et al., 2012), research consistently identifies acceptance as a crucial mediator of psychological well-being (Zamanian et al., 2021). This literature highlights a gap in understanding the specific role of disease acceptance in enhancing the QoL among breast cancer patients. While previous studies have focused on resilience resources and emotional support (Gonzales et al., 2016), stronger empirical evidence is needed to isolate disease acceptance as a key factor in improving psychological well-being in this population.

The ICQ, developed by Evers et al. (2001), is recognized as a reliable and valuable measure to deepen the exploration of disease acceptance. The ICQ and the Brief Illness Perception Questionnaire (B-IPQ) (Verhoof et al., 2014) are common tools for assessing illness cognition and cognitive perception. The B-IPQ consists of 9 items with scores from 0 to 10 and is a simplified version of the original IPQ based on the self-regulation model (SRM). The SRM captures patients' cognition perceptions in five dimensions: disease identity, disease persistence, disease control, pathogenic factors, and serious consequences (Basu & Poole, 2016; Chew et al., 2017). On the other hand, the ICQ includes 18 items that focus specifically on disease acceptance, perceived benefits, and feelings of helplessness. It has demonstrated strong reliability and validity across chronic conditions (Lauwerier et al., 2010; Sint Nicolaas et al., 2016). A key difference between these instruments lies in the applications: the B-IPQ

is primarily well-suited for research settings, whereas the ICQ is adaptable for research and clinical use (Lauwerier et al., 2010).

Given the lack of data on the ICQ's reliability and validity among cancer patients in Malaysia, cultural adaptation and validation are crucial. The unique sociocultural context of Malaysia underscores the need for the ICQ-M, which would enhance accessibility and understanding for Malay-speaking individuals. This translation ensures cultural relevance and enables healthcare providers to address cognitive distortions effectively. Ultimately, validating ICQ-M facilitates research on illness cognition and improves care quality for cancer patients in Malaysia.

2.3 Psychological Flexibility

Psychological flexibility, defined as the ability to fully engage with the present moment while allowing space for thoughts and emotions without unnecessary defense, is critical in understanding psychological health (Hayes et al., 2006). It highlights the capacity to adapt to changing circumstances, shift strategies as needed, and maintain a balance across different life domains while aligning behaviors with core values (Kashdan & Rottenberg, 2010). The six core components of psychological flexibility acceptance, cognitive defusion, self-as-context, being present, identifying values, and committed action form a comprehensive framework for evaluating mental resilience. Despite the comprehensive nature of this definition, subsequent descriptions have often selectively incorporated its elements. For example, Harris (2022) narrows the focus to awareness, openness, and practical value-driven actions, offering a simplified but actionable understanding of psychological flexibility. In contrast, psychological inflexibility, as described by Ciarrochi et al. (2010), emphasizes the detrimental effects of experiential avoidance and cognitive fusion. Inflexibility manifests in difficulties

accepting distressing thoughts, staying present, and engaging in behaviors that align with personal values, often leading to maladaptive coping mechanisms.

Empirical evidence supports the efficacy of ACT interventions in enhancing psychological flexibility, particularly among vulnerable populations. For instance, Ghorbani et al. (2021) demonstrated that ACT significantly improved mental health outcomes for breast cancer patients, aligning with a broader body of research showing ACT's effectiveness in diverse contexts, such as chronic pain (Wicksell et al., 2010), early life trauma (Richardson & Jost, 2019), internet gaming disorder (Yang et al., 2023), and depression and anxiety (Davis et al., 2020). However, while these studies illustrate ACT's utility in improving psychological flexibility, they primarily focus on symptom reduction rather than the broader, value-driven adaptation processes. The critical challenge moving forward is understanding the nuances of how psychological flexibility can serve not only as a therapeutic outcome but also as a dynamic process that influences how individuals engage with long-term stressors, such as cancer diagnosis and treatment.

In the context of breast cancer, psychological flexibility is increasingly recognized as a crucial factor influencing patients' mental health outcomes and overall QoL. Individuals with higher psychological flexibility are better equipped to adopt adaptive coping strategies, which can mitigate the emotional challenges associated with a cancer diagnosis and its treatment. Research has demonstrated a strong relationship between psychological flexibility and chronic cancer-related pain management, where higher flexibility, mainly through pain acceptance, correlates with reduced emotional distress, improved functioning, and lower levels of depression and fatigue (Duarte et al., 2023). This adaptability enables breast cancer patients to accept the diagnosis, reframe the thoughts, and engage in meaningful activities despite

significant challenges. By allowing patients to navigate the illness in a more adaptive and value-driven manner, psychological flexibility serves as a vital component in enhancing mental health outcomes and improving QoL in breast cancer patients.

2.4 Social Support

Social support, defined as the perception of assistance, care, and understanding from others, is vital in alleviating the psychosocial burden associated with cancer. It acts as a buffer against stress (Rueger et al., 2016), encompassing three key areas: emotional support (fostering feelings of love and trust), informational support (providing advice and guidance), and instrumental support (offering practical help) (Ruiz-Rodríguez et al., 2022a). Adequate social support is crucial for maintaining mental health among cancer patients and reducing anxiety, depression, stress, QoL, and loneliness while aiding adaptation to treatment challenges (Fong et al., 2017; Wells et al., 2014). It is widely recognized as a key indicator of well-being, with various measurement tools developed for its assessment. The source of social support significantly influences how it is perceived. The period following a breast cancer diagnosis is particularly challenging, as relationships often strain under the demands of treatment, exacerbating emotional distress and leading to poorer health outcomes. Strengthening social support systems is essential for enhancing emotional well-being during this critical time (Fong et al., 2017). Beyond alleviating negative emotions, social support fosters positive experiences, adaptive coping strategies, cognitive understanding of illness, and improved self-esteem, ultimately contributing to a better QoL. The period immediately following a breast cancer diagnosis and treatment is particularly challenging for many women, highlighting the critical role of social support during this time. However, access to social support often becomes strained as

relationships with family, friends, and colleagues may be disrupted by the physical and emotional demands of treatment and recovery. This disruption can exacerbate emotional distress and contribute to poorer health outcomes, as observed in breast cancer patients experiencing changes in social support networks (Boinon et al., 2014). Strengthening social support systems is consistently identified as a key strategy for improving emotional well-being during this critical period (Fong et al., 2017). Social support alleviates stress and negative emotions and offers positive social experiences that directly enhance well-being and QoL (McDonough et al., 2014). Furthermore, it plays a significant role in fostering adaptive coping strategies, promoting a more profound cognitive understanding of illness, enhancing self-esteem, and ultimately improving QoL (Janowski et al., 2020).

The moderating effect of social support on various health-related challenges is well-documented, from its role in buffering the impact of functional difficulties (Muhammad & Maurya, 2022) to mitigating death anxiety (Kagan, 2021) and wound pain (Ren et al., 2021). Its ability to moderate mental health symptoms (Hoffmire et al., 2024) and strengthen social relationships (Egan & Bull, 2020) further underscores its importance. These studies collectively illustrate the multifaceted role of social support in moderating the adverse effects of physical and psychological stressors, contributing to improved mental health and overall well-being across diverse populations.

However, despite the extensive evidence supporting the beneficial role of social support, the specific mechanisms through which it enhances psychological flexibility and QoL in breast cancer patients remain underexplored. While social support is widely recognized for its buffering effects on distress, its interaction with interventions like ACT has not been thoroughly examined. ACT, which focuses on

increasing psychological flexibility, may be particularly effective when reinforced by strong social support networks.

Patients with cancer often identify family, friends, and significant others as crucial sources of social support. This support is vital for coping with the challenges of living with cancer and undergoing treatment (Ruiz-Rodríguez et al., 2022a). While the MSPSS-M has not yet been validated specifically for cancer patients, some studies have applied this scale to this population. These studies indicate that social support significantly influences cancer patients' psychological well-being and QoL (Nurasyikin et al., 2018). Although using an unvalidated scale may present limitations, existing literature suggests that the MSPSS-M has potential validity in assessing perceived social support among cancer patients (Ng et al., 2015).

In contrast, the Sources of Social Support Scale (SSSS), which focuses on partner support, has been validated for Malaysian cancer patients (Leong Abdullah et al., 2017). However, validation of the MSPSS-M remains essential because it encompasses multidimensional support from family, friends, and other social networks rather than solely focusing on partner support (Ng et al., 2010).

To accurately assess and understand the impact of social support on cancer patients, it is critical to utilize validated measurement tools. The MSPSS, developed by Zimet et al. (1988), is widely recognized for this purpose. It evaluates perceived social support from family, friends, and significant others, making it particularly suitable for cancer patients. The MSPSS has undergone considerable validation across various demographics, proving its reliability and usefulness in evaluating perceived social support. The original version of the scale features a three-factor structure with adequate internal consistency and stability (Zimet et al., 1990).

The MSPSS has been translated into multiple languages, with successful adaptations including the Arabic female version in the United States (Aroian et al., 2010), the Arabic version in Lebanon (Fekih-Romdhane et al., 2023), the French version in France (Denis et al., 2015), the Hausa version in Nigeria (Mohammad et al., 2015), the Korean version in South Korea (Park et al., 2022), and the revised Russian version (Pushkarev et al., 2020), among others (Dambi et al., 2018). These numerous translations highlight the scale's importance in examining social support across diverse cultural contexts.

Given this context, conducting cultural adaptation and validation studies for the MSPSS-M is essential to ensure its applicability and accuracy in different cultural contexts. Previous validation efforts in Malaysia have demonstrated robust psychometric properties of the MSPSS. For instance, Ng et al. (2010) translated and validated the MSPSS with medical students from the Faculty of Medicine, University Malaya. This was further supported by factorial validation among psychiatric patients in Malaysia (Ng et al., 2012) and adaptation among teachers (Lee et al., 2017). Additionally, the MSPSS-M has shown promising psychometric properties among older individuals living in a community in Selangor (Mat Din et al., 2018). However, the scale has not yet been validated, specifically within cancer patient cohorts in Malaysia.

Given the unique social dynamics and the rising prevalence of cancer in Malaysia, this presents a compelling opportunity to assess the MSPSS among cancer patients. A culturally relevant and linguistically valid tool is needed to measure perceived social support among Malay-speaking cancer patients in Malaysia. The cultural adaptation process ensures that the MSPSS-M captures the nuances of social

support within the Malay-speaking community, enhancing its relevance and applicability in this context.

2.5 QoL

QoL is a critical indicator of well-being in breast cancer patients, encompassing physical, emotional, social, and functional dimensions of health. Breast cancer and its treatments (e.g., surgery, chemotherapy, radiation) often lead to physical symptoms such as pain, fatigue, and lymphedema, as well as emotional distress like anxiety and depression, which have profound effects on QoL (Jansen et al., 2011). However, understanding the complexity of QoL goes beyond merely measuring these symptoms; it requires a comprehensive evaluation of how psychological factors, coping mechanisms and social support systems interact to buffer or exacerbate the negative impacts of the disease on patients' overall well-being (Paraskevi, 2012).

The emotional response to a breast cancer diagnosis is often severe, marked by fear, anxiety, and uncertainty. Such responses are not only short-term reactions to the diagnosis but can persist throughout treatment and even into survivorship, affecting QoL long after medical interventions conclude (Yeh et al., 2014). While many women adapt over time, research shows that some patients experience chronic distress, impairing the mental health and reducing the QoL (Brandão et al., 2017). This variability in psychological outcomes suggests that other moderating factors, such as disease acceptance and psychological flexibility, play essential roles in how patients cope with the diagnosis and treatment (Wolff et al., 2022).

Disease acceptance is a key factor in improving psychological outcomes and QoL among breast cancer patients. Women who demonstrate higher levels of acceptance often report lower levels of psychological distress, as they can engage in