



Examining Predictors of Mindfulness-Based Stress Reduction Participation Among Breast Cancer Patients: Insights From the Theory of Planned Behavior

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Abstract

The current study explored the factors influencing female breast cancer patients' intentions to attend mindfulness-based stress reduction (MBSR) programs in Texas, utilizing the Theory of Planned Behavior (TPB) as the guiding framework. MBSR is a widely recognized stress management intervention shown to improve psychological well-being, yet its adoption among this population remains limited. The current study specifically examined the relationships between attitudes, subjective norms, and perceived behavioral control in predicting intentions to participate. A quantitative, cross-sectional survey design was employed, with 60 participants recruited via social media and support groups (see Appendix A). Data were collected using a validated TPB-based questionnaire and analyzed with multiple regression analysis in SPSS. Results revealed that attitudes significantly predicted intention ($\beta = 0.338$, $p = 0.041$), accounting for 18.4% of the variance. However, subjective norms ($p = 0.492$) and perceived behavioral control ($p = 0.569$) were not significant predictors. The findings underscore the critical role of positive attitudes in promoting MBSR participation while highlighting the need for tailored interventions to address social influences and logistical barriers. The current study provides actionable insights for health professionals seeking to design evidence-based programs that improve participation rates, enhancing the quality of life for breast cancer patients. Future studies should explore the role of cultural and socioeconomic factors in shaping these intentions.

Keywords: *mindfulness-based stress reduction, breast cancer, Theory of Planned Behavior, participation, psychological well-being, telehealth, interventions, stress management, health behavior, patient engagement, chronic illness, attitudes, subjective norms, perceived behavioral control, resilience, cancer care, healthcare accessibility*

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Introduction

Breast cancer represents a critical public health concern, particularly in Texas, where it ranks as the second leading cause of cancer-related deaths among women (Texas Health and Human Services Commission, 2023). From 2015 to 2019, Texas reported an incidence rate of invasive breast cancer at 116.9 cases per 100,000 women and a mortality rate of 19.8 deaths per 100,000 women (Texas Department of State Health Services, 2022). These statistics reflect the persistent threat of breast cancer to women's health, compounded by projections in 2022, estimating 19,921 new diagnoses and 3,415 deaths (Texas Department of State Health Services, 2023). Such alarming figures underscore the urgency of identifying and implementing effective interventions that address both the physical and psychological challenges faced by breast cancer patients.

The Gulf Coast region of Texas, encompassing Houston and its rapidly expanding population, adds further complexity to the healthcare landscape. Population growth increases the demand for targeted and accessible healthcare solutions, particularly for chronic illnesses, such as breast cancer (Texas Comptroller of Public Accounts, n.d.). Amid this growth, it becomes imperative to explore innovative approaches to stress management for breast cancer patients. Mindfulness-based stress reduction (MBSR) has emerged as a promising intervention for alleviating psychological distress, fostering resilience, and improving overall quality of life. Studies have highlighted the effectiveness of MBSR in managing stress across diverse populations, including those living with chronic illnesses, such as cancer (Brown University School of Public Health, n.d.; Bui et al., 2020; Moulton-Perkins et al., 2020). Yet, research remains limited in examining breast cancer patients' intentions to participate in MBSR, particularly within the sociocultural and logistical context of Texas.

The current study addressed this gap by investigating factors that influenced the participation of female breast cancer patients in MBSR programs delivered via telehealth or in-person formats. Grounded in the Theory of Planned Behavior (TPB), the study examines how attitudes, subjective norms, and perceived behavioral control shape these intentions (Ajzen, 1991). Understanding these relationships is crucial, as MBSR not only equips patients with tools for emotional regulation and resilience but also addresses broader health disparities by offering accessible stress management strategies. While the benefits of MBSR, including mindfulness practices like yoga, body scanning, and meditation, are well-documented (Kabat-Zinn, 1990), little is known about how breast cancer patients perceive and prioritize these programs, especially when faced with barriers, such as treatment-related fatigue and psychological distress.

The need for the present study is further emphasized by the logistical and psychological challenges breast cancer patients face. Many patients experience difficulties accessing care due to transportation issues, time constraints, and financial burdens, which can hinder their ability to participate in programs, such as MBSR. Tailored strategies are needed to overcome these barriers, such as providing free computer classes to facilitate telehealth participation, offering transportation assistance, and incentivizing attendance with gift cards or meal vouchers. Addressing these practical challenges is essential to improving access and fostering greater engagement among female breast cancer patients in the Gulf Coast region of Texas.

Lastly, this study aims to bridge critical gaps in understanding the intentions of female breast cancer patients to participate in MBSR programs within the unique context of Texas. By applying the TPB framework, it offers actionable insights for health professionals to design interventions that empower patients to engage in stress management practices, enhance their psychological well-being, and foster resilience. As breast cancer continues to pose significant health challenges, research like this provides an essential foundation for advancing health education and promotion efforts in cancer care.

Literature Review

Breast cancer remains a critical public health issue, significantly impacting women's physical and psychological well-being. Stress, anxiety, and depression are common among breast cancer patients, highlighting the need for interventions that address these psychological challenges while promoting resilience. Mindfulness-based stress reduction (MBSR) is an evidence-based program that incorporates mindfulness techniques, such as Hatha yoga, body scanning, and relaxation exercises (Lai et al., 2021). These techniques foster present-moment awareness and emotional regulation, making MBSR particularly effective in managing stress-related morbidity and mortality among breast cancer patients (Langer, 2000; Moulton-Perkins et al., 2020). Given its documented benefits, MBSR presents a promising complementary approach to support the psychological health of the female breast cancer population.

Despite its demonstrated efficacy, participation in MBSR programs remains inconsistent, with barriers including limited awareness, logistical challenges, and technological constraints (Duncan, 2024). These barriers are particularly pronounced in underserved populations, such as low-socioeconomic communities in Texas, where access to healthcare resources can be limited (Williams & Shang, 2023). Telehealth has emerged as a promising solution for overcoming these barriers by providing accessible and convenient options for delivering MBSR programs. Telehealth-based interventions not only offer flexibility but also extend access to patients in rural or low-resource areas. However, implementing telehealth successfully requires addressing challenges, such as technological literacy, availability of reliable internet, and user confidence with virtual platforms (Bui et al., 2020). Designing inclusive telehealth programs that address these specific barriers can ensure broader healthcare accessibility and patient engagement, particularly for underserved populations (Duncan, 2024). Understanding and mitigating these access challenges is essential to the equitable delivery of MBSR interventions.

The application of theoretical frameworks, such as the Theory of Planned Behavior (TPB), provides a valuable lens for understanding participation in MBSR programs. TPB emphasizes the influence of attitudes, subjective norms, and perceived behavioral control on behavioral intentions (Ajzen, 1991). Research indicates that attitudes toward behavior, supportive social norms, and confidence in one's ability to perform the behavior are predictors of participation in health-promoting activities (Ajzen, 1985; Beyera et al., 2022). However, research specifically applying TPB to understand breast cancer patients' participation in MBSR programs remains underexplored. This highlights the need for further empirical exploration into how TPB constructs operate within this specific context.

Attitudes

Participants' attitudes toward attending a mindfulness-based stress reduction (MBSR) program played a central role in this study. Past research has shown that individuals who hold positive attitudes toward health behavior are more likely to form strong intentions to engage in it (Ajzen, 1991). In this case, participants' beliefs about the effectiveness of MBSR in reducing stress and improving quality of life influenced their willingness to participate. Educational efforts and public awareness campaigns have proven useful in shaping these positive attitudes by emphasizing the scientifically supported benefits of mindfulness practices (Kabat-Zinn, 1990; Lai et al., 2021). Supporting this body of evidence Duncan (2024) found that attitude was the only variable that significantly predicted intention among female breast cancer patients in Texas. This finding reinforces the idea that promoting positive perceptions of MBSR is key to increasing participation.

Subjective Norms

Subjective norms refer to the influence of perceived social expectations, whether from family, peers, or healthcare providers on an individual's decision making (Ajzen, 1991; Beyera et al., 2022). In the context of

this study, the extent to which social support shaped participants' intentions to attend MBSR was examined. While previous studies highlight that strong social encouragement can improve engagement in health programs (Natan et al., 2019; Wang & Cheng, 2020), this research found no significant relationship between subjective norms and the intention to participate in MBSR programs (Duncan, 2024). Nevertheless, Ajzen's (1991) theoretical model maintains that subjective norms remain important in shaping intention, indicating that continued attention to family and provider support may still play a valuable supplementary role.

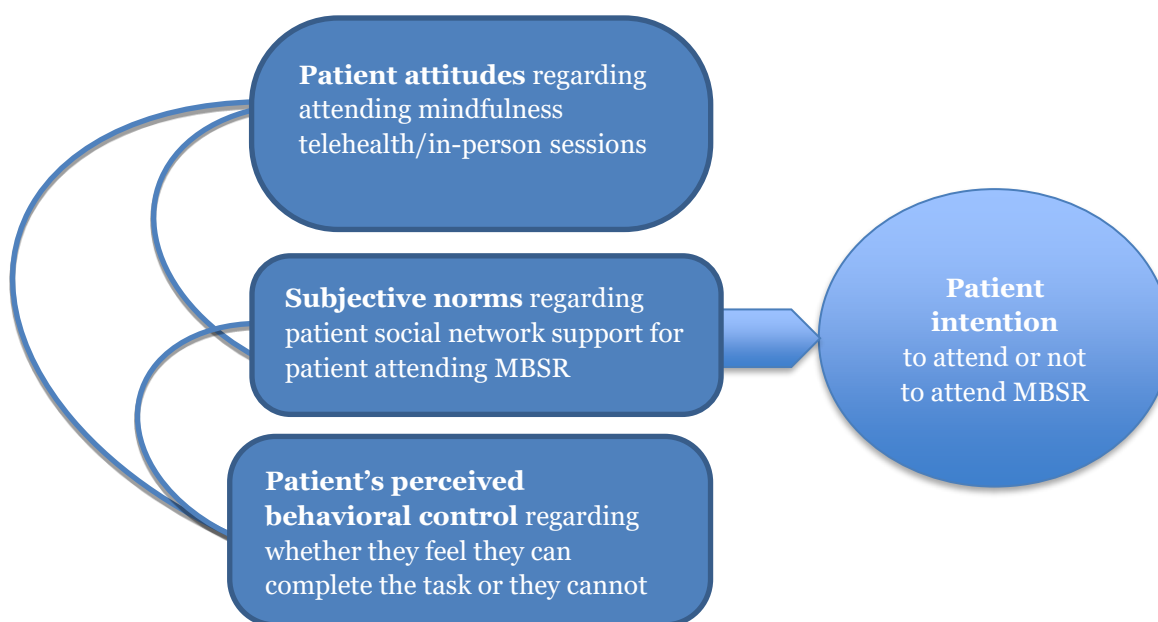
Perceived Behavioral Control

Perceived behavioral control relates to an individual's belief in their capacity to perform a behavior, especially in the face of obstacles (Ajzen, 1991). The current study explored whether participants felt capable of attending an MBSR program, particularly in telehealth settings. Key barriers included limited technological skills, inconsistent internet access, and physical limitations. Prior research supports implementing strategies, such as technology training and transportation assistance, to reduce these challenges (Bui et al., 2020; Williams & Shang, 2023). Although this study did not find a statistically significant relationship between perceived behavioral control and intention (Duncan, 2024), the construct remains relevant. According to Ajzen (1991), perceived control contributes to the strength of intention and may ultimately influence behavior. Therefore, addressing control-related barriers is still important for ensuring broader participation in MBSR programs.

Theoretical Framework

The Theory of Planned Behavior (TPB) provides a robust model for understanding behavioral intentions, emphasizing three constructs: attitudes, subjective norms, and perceived behavioral control (Ajzen, 1991). While attitudes reflect an individual's evaluation of the behavior, subjective norms capture perceived social pressures, and perceived behavioral control assesses the confidence to perform the behavior. See Figure 1.

Figure 1. *Theoretical Framework for the Study*



Note. Figure created by the author using terminology adapted from: Ajzen, I. (1985). From intentions to actions: A theory of planned behavior. In J. Kuhl & J. Beckmann (Eds.), *Action control: From cognition to behavior* (pp. 11–39). Springer. https://doi.org/10.1007/978-3-642-69746-3_2

Purpose of the Study

The purpose of this study was to examine female breast cancer patients' intentions to attend a mindfulness-based stress reduction (MBSR) program that uses the Theory of Planned Behavior (TPB) as the guiding framework. MBSR is a proven, evidence-based intervention for managing cancer-related stress and enhancing emotional well-being. This study aimed to identify how attitudes, subjective norms, and perceived behavioral control contribute to patients' willingness to engage in such programs. By focusing on a diverse sample from the Gulf Coast region of Texas, the research sought to provide actionable insights for healthcare professionals to determine which components of the TPB best predict patients' intentions to participate in MBSR interventions.

Moreover, the findings of this study have broader implications for healthcare professionals, educators, and policymakers. By identifying the predictors of MBSR participation, this research informs the development of culturally sensitive and contextually relevant interventions that align with the specific needs of diverse populations. Integrating stress management programs into comprehensive cancer care plans can significantly enhance patients' quality of life. As Langer (2000) emphasized, mindfulness enables individuals to overcome self-imposed limitations, embrace adaptability, and mitigate the impact of stressors. Similarly, Dempsey (2020) and Werdani (2022) highlight mindfulness as a transformative practice that helps patients navigate the psychological challenges posed by life-threatening illnesses such as cancer.

Research Questions, and Hypotheses

1. How do attitudes influence female breast cancer patients' intentions to attend an MBSR program?
2. What role do subjective norms play in shaping these intentions?
3. How does perceived behavioral control impact participation intentions for MBSR programs?

Methods

Data collection was conducted over a 1-month period following Institutional Review Board (IRB) approval from Walden University (Duncan, 2024). Participants were invited to complete the survey online via SurveyMonkey, which ensured convenience and anonymity. Recruitment materials emphasized voluntary participation and provided clear instructions for accessing and completing the survey. To recruit participants, flyers were distributed at local hospitals and breast cancer support groups, and announcements were posted on social media platforms.

No specific accommodation was made for individuals with limited technology access or skills because participation required basic computer literacy, and identities remained anonymous. The study employed a cross-sectional design to examine relationships between the Theory of Planned Behavior (TPB) constructs and participants' intentions to attend MBSR programs. Data were analyzed in aggregate using SPSS, Version 29, and multiple regression analysis was conducted to identify significant predictors of intention (Duncan, 2024).

Results

Pilot Study

All pilot study participants ($N = 8$) provided informed consent. The pilot study assessed the feasibility and clarity of the survey instrument. The initial instrument demonstrated high internal consistency, with a Cronbach's alpha of 0.843. Following item analysis, three questions were removed to improve reliability: (1) recommending MBSR to others; (2) anticipated family-related barriers; and (3) preferred session duration. After these revisions, Cronbach's alpha increased to 0.930, indicating excellent reliability (Duncan, 2024). The pilot study also informed data cleaning protocols later applied in the main study. Table 1 presents the reliability statistics from the pilot phase.

Table 1. Regression Model Summary

Module	R	R^2	Adjusted R^2	SE of the estimate	Durbin-Watson
1	.516 ^a	.267	.184	1.720	2.103

Note. Model 1 summary for the regression analysis.

Main Study

The main study included $N = 60$ female breast cancer patients and survivors residing in the Gulf Coast region of Texas, with a mean age of 54 years ($SD = 9.3$) (Duncan, 2024). Most participants (85%) reported living in urban areas, reflecting the region's metropolitan demographics and access to healthcare services.

The sample was diverse in income, education, and race:

- **Income:** 40% reported annual household income between \$20,001 and \$40,000, while 28.3% reported income was below \$20,000.
- **Education:** 38.98% had some college education or a college degree, and 28.81% reported a high school diploma as their highest level of education.
- **Race:** 36.7% ($n = 22$) identified as White, 26.7% ($n = 16$) as Hispanic, 20% ($n = 12$) as Black or African American, and 15% ($n = 9$) as Asian. These figures align closely with U.S. Census Bureau estimates for the Gulf Coast region, which report approximately 38% White (non-Hispanic), 36% Hispanic or Latino, 17% Black or African American, and 9% Asian or multiracial (Texas Comptroller of Public Accounts, n.d.). This demographic alignment strengthens the external validity of the findings and underscores their relevance to urban female breast cancer patients in the Gulf Coast region (Duncan, 2024).

Data Analysis

Multiple regression analysis examined the effects of attitudes, subjective norms, and perceived behavioral control (PBC) on participants' intentions to attend MBSR programs. Attitudes emerged as a significant predictor of intention ($\beta = 0.338$, $p = .041$), explaining 18.4% of the variance. Subjective norms ($\beta = 0.142$, $p = .492$) and PBC ($\beta = 0.107$, $p = .569$) were not significant predictors, indicating that social influences and perceived control were less influential in this context.

The overall regression model was significant, $F(3, 56) = 3.146$, $p = .031$, with the three predictors collectively explaining 26.7% of the variance ($R^2 = 0.267$, adjusted $R^2 = 0.184$). The Durbin-Watson statistics (2.103) confirmed the independence of residuals. These findings emphasize the critical role of attitudes in shaping

intentions to participate in MBSR programs, suggesting that interventions aimed at improving patients' perceptions of MBSR may increase program uptake (Duncan, 2024).

Discussion

This study provides valuable insights into the factors influencing breast cancer patients' intentions to attend mindfulness-based stress reduction (MBSR) programs, focusing specifically on a diverse population from the Gulf Coast region of Texas. Grounded in the Theory of Planned Behavior (TPB), this research examined how attitudes, subjective norms, and perceived behavioral control (PBC) interact to shape behavioral intentions. The findings underscore the critical role that attitudes play in predicting these intentions, suggesting that fostering positive perceptions of MBSR programs may be pivotal to increasing participation rates. In addition to validating the importance of TPB in health behavior research, the study offers a nuanced understanding of how sociodemographic and psychological factors may intersect to influence decision-making processes. By providing evidence-based insights, this research contributes not only to the design of targeted interventions but also to broader efforts aimed at improving health outcomes and quality of life for breast cancer patients through accessible and effective stress management solutions (Duncan, 2024).

Social Change/Significance

The social significance of integrating mindfulness-based stress reduction (MBSR) into breast cancer care lies in its ability to redefine healing beyond traditional biomedical outcomes. While remission and tumor reduction are critical indicators of success, patients consistently express a desire for improved quality of life through reduced anxiety, emotional regulation, better sleep, and spiritual resilience (Lengacher et al., 2021). MBSR supports these outcomes by fostering inner awareness, self-compassion, and a sense of agency during and after treatment (Langer, 2000). This intervention recognizes that breast cancer is not only a physical illness but also a life-altering experience that requires psychological, emotional, and spiritual support. By promoting healing that centers the whole person, MBSR contributes to a broader cultural shift in how breast cancer is treated and understood (Loh et al., 2021).

Health professionals must begin to change the culture of breast cancer care by acknowledging that healing often emerges from within—even when a cure may not be possible. This cultural transformation involves moving beyond strictly Western biomedical approaches, and embracing complementary, evidence-based modalities, such as MBSR. Holistic care models can be supported by establishing community-based support groups, training healthcare professionals to facilitate these groups, and embedding mindfulness education and referrals within oncology and primary care settings. Normalizing mindfulness as a legitimate care option also requires educating physicians, nurses, and allied health professionals about its evidence base and practical application. When providers understand the science and value of mindfulness, they are more likely to recommend and integrate it into patient care pathways.

Mindfulness-based stress reduction (MBSR) provides patients with tools to process fear, uncertainty, and trauma, while reinforcing personal strengths and values (Yildirim et al., 2024). MBSR models a form of healing that honors patient autonomy, respects cultural diversity, and supports emotional recovery as a core component of survivorship (Kabat-Zinn, 1990). Healing is no longer confined to hospitals or clinical settings; it can take place in homes, gardens, community centers, and digital spaces—wherever patients can access stillness, support, and self-awareness. Expanding the accessibility of mindfulness in these diverse contexts has the potential to reach patients who may otherwise be overlooked by conventional systems.

This study specifically contributes to understanding factors that influence participation in MBSR programs among female breast cancer patients in Texas. Utilizing the Theory of Planned Behavior (TPB), the research identifies key predictors, such as attitudes, subjective norms, and perceived behavioral control that shape

intentions to participate in mindfulness-based interventions. Understanding these variables offers actionable insights for designing targeted strategies that enhance accessibility and promote engagement, especially among underserved populations.

Breast cancer remains a major public health concern and a leading cause of death among women worldwide, with particularly high rates in the United States. In Texas, it is the second-leading cause of cancer-related mortality among women, highlighting the urgent need for interventions that address both the physical and psychological dimensions of the disease (Texas Department of State Health Services, 2022). The psychological burden—manifesting as stress, anxiety, and depression—can significantly diminish patients' quality of life. MBSR has been shown to alleviate these challenges, yet the reasons that some patients engage in MBSR, while others do not, are not fully understood. This study addresses this gap by examining the psychosocial and logistical barriers influencing MBSR participation.

MBSR incorporates a variety of techniques, such as mindful eating, body scanning, and Hatha yoga, all of which are designed to cultivate present-moment awareness and self-acceptance (Lai et al., 2021). These practices help mitigate the harmful effects of chronic stress on the body and mind. Understanding what influences patient engagement—especially in vulnerable populations—can help tailor more effective outreach and delivery models. Without addressing these barriers, many patients will continue to miss the benefits of mindfulness-based care.

The Theory of Planned Behavior (TPB) offers a robust framework for exploring why some patients choose to engage in MBSR while others do not. According to this theory, health-related behaviors are influenced by three core constructs: attitudes toward the behavior, perceived social norms, and perceived control over one's ability to perform the behavior (Ajzen, 1985, 1991). When these factors align positively, individuals are more likely to follow through on their behavioral intentions (Beyera et al., 2022). Applying this theory to MBSR participation allows researchers to identify which psychological and social levers can be targeted to improve enrollment and retention. It also opens avenues for personalized, culturally sensitive interventions.

Despite the widespread application of the TPB in health behavior research, few studies have explored its utility in predicting MBSR participation among breast cancer patients (Beyera et al., 2022). While previous work has demonstrated the benefits of mindfulness in reducing stress, there remains a lack of clarity around what drives the intention to participate, particularly when programs are offered through telehealth. Factors, such as treatment-related fatigue, geographic isolation, transportation issues, and limited access to care, may all hinder participation (Duncan, 2024). By studying TPB variables in this context, this research helps clarify how to support patient decision making and remove participation barriers.

Telehealth offers a promising solution to healthcare accessibility challenges, especially for patients in rural or underserved areas. However, sociocultural and technological factors—such as internet access, digital literacy, and skepticism toward virtual care—can influence willingness to engage with telehealth-based MBSR (Bui et al., 2020; Williams & Shang, 2023). Incorporating TPB constructs into telehealth research allows for a more nuanced understanding of these barriers. By doing so, we can design telehealth programs that not only reach more people but also resonate with their lived experiences and expectations. This approach strengthens the bridge between innovation and inclusivity in cancer care.

The insights from this research can inform the development of evidence-based, targeted strategies to expand MBSR access and participation. Educators and healthcare providers can use these findings to create interventions that are both culturally relevant and behaviorally effective. Collaboration with community organizations, local leaders, and health institutions will be critical in extending the reach of MBSR, especially among marginalized groups. Integrating mindfulness into standard care pathways and making it a part of routine wellness planning can normalize its use and amplify its impact. The ultimate goal is to embed

mindfulness into the infrastructure of survivorship care, ensuring all patients have access to tools that support whole-person healing.

As the healthcare field moves toward a more integrative model, it must also evolve its language and cultural metaphors. Terms like “fighting cancer” or “winning the battle” may not resonate with all patients and, in some cases, can exacerbate stress. Mindfulness reframes healing as an internal journey grounded in presence, resilience, and connection, allowing for growth and peace even amid suffering (Kriakous et al., 2021; Langer, 2000). Centering patient voices in both program development and policy design is essential to this transformation. Survivors often stress the importance of community, cultural relevance, and creating meaning in their healing journey. Equity-driven, patient-informed MBSR programs can help meet these needs while promoting sustainable well-being.

By supporting the widespread implementation and funding of mindfulness-based programs, health systems have the opportunity to foster a more humane and holistic approach to cancer care. Such programs affirm the dignity and complexity of each individual’s journey, recognizing that healing extends beyond the eradication of disease. This study adds to the growing movement that values integrative, compassionate care and challenges us to build systems that reflect those values. With proper support, MBSR can become not just an intervention but a catalyst for cultural change in how we treat, understand, and live with breast cancer. It is through these intentional shifts that lasting social change can take root.

Key Findings

The results of the regression analysis revealed that attitudes were the only significant predictor of intention, with more positive attitudes toward mindfulness-based stress reduction (MBSR) being associated with a greater likelihood of participation. This finding aligns with previous research demonstrating that individuals’ beliefs about the efficacy and benefits of behavioral change interventions significantly influence their decision to engage in them (Ajzen, 1991; Kabat-Zinn, 1990). Among breast cancer patients, the perception that MBSR can reduce stress, improve emotional regulation, and enhance overall well-being appears to be a primary motivating factor behind participation intentions (Duncan, 2024). These results highlight the importance of focusing on how patients perceive the outcomes of interventions like MBSR. By emphasizing the practical and emotional benefits of MBSR, healthcare providers may be able to influence patients’ attitudes and increase program engagement.

Interestingly, subjective norms and perceived behavioral control were not found to be significant predictors of intention in this study. This stands in contrast to much of the health behavior literature, where social influence and self-efficacy are frequently cited as key determinants of behavioral intentions (Ajzen, 1991; Natan et al., 2019). One possible explanation for this difference may lie in the unique challenges faced by breast cancer patients, such as treatment-related fatigue, psychological distress, and physical limitations, which may reduce the influence of social pressures or diminish patients’ confidence in their ability to engage in new activities (Duncan, 2024). In addition, the delivery format of MBSR—particularly telehealth—could impact these constructs differently than in-person formats. Further research is needed to explore how delivery mode and patient-specific barriers interact with the broader constructs of the Theory of Planned Behavior (TPB).

Despite their lack of statistical significance in this study, subjective norms and perceived behavioral control remain important in designing effective interventions. Health professionals should actively involve family, friends, and caregivers, as their encouragement can enhance motivation to participate in MBSR. Moreover, improving perceived behavioral control—especially in the context of telehealth—requires proactive support. Technological barriers can be addressed through initiatives, such as community-based digital literacy programs, which equip patients with the skills necessary to participate in virtual interventions. These efforts may also help reduce broader disparities in healthcare access by bridging the digital divide (Duncan, 2024).

Telehealth has proven to be a convenient and accessible format for delivering MBSR, especially for breast cancer patients who face transportation or mobility challenges. The rapid expansion of telehealth during the COVID-19 pandemic demonstrated its feasibility as a platform for interventions, such as MBSR (Hsieh et al., 2022). Moving forward, it is essential that future research investigate the effectiveness of both telehealth and in-person delivery formats using TPB constructs as a guiding framework. Such studies could offer valuable insights into how patients with different needs and capabilities engage with MBSR and how healthcare providers can design tailored interventions that strengthen perceived behavioral control and harness social support (Duncan, 2024).

Limitations

While this study offers meaningful contributions to the understanding of behavioral intentions toward MBSR among breast cancer patients, several limitations should be acknowledged. First, the prominence of attitudes as the only significant predictor may reflect characteristics of the sample, such as prior exposure to mindfulness or openness to complementary therapies. These findings may not be generalizable to more diverse populations with less familiarity or with more skepticism toward such interventions.

Second, the study relied on self-reported intentions rather than actual MBSR participation. Although behavioral intention is a central construct in the Theory of Planned Behavior (TPB), it does not always lead to action. Without follow-up data, it is unclear to what extent intention translated into behavior, limiting the study's ability to predict real-world outcomes.

Third, the nonsignificant role of subjective norms and perceived behavioral control may be partially explained by unmeasured contextual variables, such as emotional distress, logistical burdens, or limited technological access. These factors are especially relevant in clinical populations and may interact with TPB constructs in complex ways that were not fully captured in this study.

Finally, the cross-sectional design limits the ability to infer causality or assess changes over time. A longitudinal approach would offer stronger evidence for how attitudes, norms, and control perceptions evolve throughout the cancer care continuum. Future research should address these gaps by examining actual behavior, considering individual-level and technological barriers, and exploring the role of delivery format in shaping behavioral intention.

Implications for Theory and Practice

Given that attitudes were the only significant predictor of intention, health professionals should prioritize strategies that strengthen positive perceptions of MBSR. Educational efforts can highlight the psychological and physical benefits of MBSR, supported by testimonials from breast cancer patients who have experienced positive outcomes. Personal narratives can humanize intervention, build trust, and reduce stigma, all of which can help patients view mindfulness as a credible, evidence-based method for managing cancer-related stress. Messages tailored to patients' lived experiences are more likely to resonate and may improve receptivity to complementary care approaches.

Integrating mindfulness education into routine oncology care provides another opportunity to foster favorable attitudes. For example, providers might incorporate brief mindfulness exercises—such as deep breathing or short guided meditations—during treatment visits. These low-effort practices can be introduced in a supportive familiar setting and reinforced through patient portal resources, handouts, or video content. When mindfulness is endorsed by trusted healthcare providers—such as nurses, oncologists, or social workers—it is more likely to be accepted and integrated into patients' self-care routines (Duncan, 2024).

Addressing logistical and technological barriers is equally important to ensuring equitable participation in MBSR. Even patients with positive attitudes may face challenges, such as transportation, limited time, or caregiving responsibilities. Health systems can increase access by offering flexible scheduling, transportation support, or childcare assistance. For those engaging in telehealth, platforms must be user-friendly, supported by reliable technical help, and include digital literacy training for patients with limited experience. Small incentives—such as gift cards or meal vouchers—may further reduce barriers, especially for low-income patients who might deprioritize self-care due to financial or caregiving pressures (Duncan, 2024; University of Guelph Office of Research, n.d.).

Together, these findings highlight the need for patient-centered, flexible, and inclusive approaches to implementation of MBSR. By focusing on attitudes while also addressing control-related and logistical factors, healthcare professionals can help ensure that mindfulness interventions are both effective and accessible for breast cancer patients across diverse settings.

Conclusion

This study highlights the importance of positive attitudes in predicting participation in MBSR programs among female breast cancer patients in Texas. While subjective norms and perceived behavioral control were not significant predictors, these factors should not be overlooked in practice. Initiatives to improve perceived behavioral control, such as community technology programs and efforts to foster supportive social environments, could enhance participation rates. Telehealth has emerged as a valuable tool for delivering MBSR programs, particularly for patients facing logistical barriers, while in-person formats remain essential for those who prefer face-to-face interactions. Healthcare providers and policymakers can leverage these insights to design more effective interventions, reducing barriers and increasing accessibility to MBSR programs. Such efforts can improve psychological well-being and quality of life for breast cancer patients, particularly in low socioeconomic areas within the Gulf Coast region of Texas.

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Appendix

TPB Survey Construction

A. ATTITUDE

1. How positive do you feel about attending the MBSR program?

Extremely positive: ___1___: ___2___: ___3___: ___4___: ___5___: ___6___: ___7___: Extremely not positive

Extremely positive= 1, Slightly positive = 3, Quite positive = 6, positive = 3, Neither positive nor not positive = 4, Extremely not positive = 7

2. How likely do you think attending the MBSR program will help reduce stress and improve your well-being?

Extremely Likely: ___1___: ___2___: ___3___: ___4___: ___5___: ___6___: ___7___: Extremely Unlikely

Extremely Likely= 1, =2, Slightly Likely = 3, Neither Likely nor Unlikely = 4, Unlikely= 5, Quite Unlikely = 6, Extremely unlikely = 7

3. How important do you believe it is to prioritize mindfulness and self-care in your daily life?

Extremely Important: ___1___: ___2___: ___3___: ___4___: ___5___: ___6___: ___7___: Extremely unimportant

Extremely important= 1, Important = 2, Slightly important = 3, Neither Important nor Unimportant = 4, Unimportant =5, Slightly unimportant, =6, Extremely Unimportant = 7

B. SUBJECTIVE NORMS

4. How much support will your close friends and family provide for your decision to attend the MBSR program?

Extremely Unsupportive: ___7___: ___6___: ___5___: ___4___: ___3___: ___2___: ___1___: Extremely supportive

Extremely Unlikely = 7, Slightly Unsupportive = 6, Unsupportive = 5, Unlikely = 4, Neither Supportive nor Unsupportive, Slightly Supportive = 3, Supportive= 2, Extremely Supportive = 1

5. How much influence do you perceive that society has on people attending mindfulness programs like MBSR?

Extremely No Influence: ___7___: ___6___: ___5___: ___4___: ___3___: ___2___: ___1___: Extremely High Influence

Extremely high Influence = 1, Strong Influence = 2, Influential = 3, Neither Influential nor not Influential =4, Low Influence = 5, - No Influence = 6, Extremely no Influence = 7

6. To what extent do you anticipate receiving support from your close friends and family for your decision to attend the MBSR program?

Extremely likely: ___1___: ___2___: ___3___: ___4___: ___5___: ___6___: ___7___: Extremely Unlikely

Extremely Unlikely = 7, Slightly Unlikely = 6, Unlikely = 5, Neither Nor Unlikely = 4, =Slightly Likely= 3, =2, Extremely Likely = 1

C. PERCEIVED BEHAVIORAL CONTROL

7. How confident are you in your ability to actively participate in the MBSR program?

Extremely Confident: ___1___: ___2___: ___3___: ___4___: ___5___: ___6___: ___7___: Extremely not Confident

Extremely Confident = 1, Confident = 2, slightly confident = 3, Neither Confident nor Unconfident = 4, Somewhat Not Confident = 5, Not Confident= 6, Extremely not Confident = 7

8. Do you think external factors such as time commitments or financial constraints might hinder your ability to attend the MBSR program?

Extremely unlikely: ___1___: ___2___: ___3___: ___4___: ___5___: ___6___: ___7___: Extremely Likely

Extremely Likely= 7, Slightly Likely = 6, = 5, Neither Nor Unlikely = 4, Unlikely =1, Slightly Unlikely=3, Extremely Unlikely=1

9. How much control do you believe you have over introduced mindfulness practices into your daily routine?

Extremely No Control: ___7___: ___5___: ___4___: ___3___: ___2___: ___1___: Extreme Total Control

1 = Extreme Total control, 2 = Slight Control, 3 = Control, 4 = Neither control nor no control, 5 = No Control= 6 = Slightly No Control, Extremely No Control= 7

D. INTENTIONS

Participants rated their agreement with one item regarding their intentions to attend the MBSR program for 3 days, 2 hours per day for 8 weeks.

10. "I am . . ."

Extremely motivated: ___1___: ___2___: ___3___: ___4___: ___5___: ___6___: ___7___: Extremely not motivated.

Extremely motivated= 1, Slightly Motivated=3, Motivated=2, Extremely not motivated=7, Neither motivated nor not motivated =4, Somewhat Not motivated=5, Not motivated=6, Extremely Not Motivated

Evaluation Criteria: How the variables/scale is calculated. What the scores represent, and an example item

To calculate (TPB) survey scores: Use the survey Likert scale data, enter the results of the survey data into SPSS and perform a multiple regression analysis as recommended by Ajzen (1991).



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