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Social Media Influence on Factors Affecting Quality of Life among Breast Cancer Survivors: A Conceptual Study

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Abstract: Breast cancer disease remains a significant burden in global public health, affecting women with new cases and mortality. In 2018, Malaysian women of different races, like Malays, Chinese, and Indians, were diagnosed with breast cancer, approximately 17,000 in total. The consequence is that their quality of life was affected, especially in physical and emotional health. Nowadays, the use of social media among users is increasing, and in healthcare, it examines the role of social media in patient education and social support, which highlights the importance of modern digital technology. This conceptual study examines the factors affecting quality of life, moderated by the role of social media influence. Sociodemographic, psychological state, self-care behaviors, social support, and healthcare support systems were among the factors identified. The study relies on the integration of the quality-of-life model and social cognitive theory in conducting the literature review. Furthermore, this study has implications for improving the quality of life through social media, promoting patient-doctor engagement with social media, supporting policymakers in improving public health outcomes, and identifying potential future research topics. Theoretical contributions with integrated frameworks and an innovative approach to breast cancer survivorship were also identified. Policymakers and healthcare professionals have an opportunity to make practical contributions through the use of social media. The study's limitations were a narrow focus on cancer research, limited generalisability, and a broad range of social media investigations

Keywords: *Quality of life, social media, education, support, breast cancer*

1. Introduction and Background

Breast cancer is the most common type of cancer among women worldwide. Similar to the majority of developing countries, Malaysia is currently experiencing an epidemiologic transition in which lifestyle-related diseases, particularly cancer and cardiovascular disease, have become more prevalent (Ministry of Health Malaysia, 2021). Malaysia is also included in the list of countries that are affected by breast cancer (International Agency for Research on Cancer, 2022). A study from Malaysia on cancer survivors identified the top five cancers with high chances of 5-year relative survival rates namely thyroid at 82.3%, prostate at 73.0%, corpus uteri at 70.6%, breast at 66.8% and colon cancer at 56.8%. In the meantime, cancers of the lung, trachea and bronchus were found to be slow in survival time with 11.0%. Among ethnic populations, Chinese women (76.5%) have the highest 5-year relative survival rate for breast cancer, followed by Indians (70.5%) and Malays (57.9%) (National Cancer Registry Department, 2018a). The quality of life (QOL) of breast cancer survivors has emerged as a matter of concern. The quality of life for breast cancer survivors can be substantially influenced by the transition from patient to survivor. It is important to offer active support and assistance to help these individuals regain their previous lifestyles and improve their overall well-being (Park et al., 2021). Quality of life is associated with a variety of factors, such as sociodemographic, psychological factors, self-care behaviors, social support, and healthcare support. People perceive social media as a personal communication tool making it essential to protect the information shared on any platform. Women can utilize social media to facilitate the management of specific aspects of their self-care. On the other hand, this is frequently overlooked (Jain et al., 2021; Ure et al., 2020)

2. Literature Review

Quality of Life in Breast Cancer

Quality of life establishes a foundation for the patient's health requirements, therapeutic objectives, and patient-centered treatment by taking into account the patient's feelings, attitudes, and opinions during the

decision-making process (Elegbede et al., 2019). Costa et al. (2017) Conducted a study on the quality of life of breast cancer survivors and discovered that patients with distant metastases have a lower functional capacity (mean = 75.3), a lower functional scale (mean = 57.0), lower global health (mean = 51.3), and a higher number of symptoms (mean = 37.0) compared to those without distant metastases (mean = 90.5). A previous study in Malaysia assessed a study related to quality of life using the QLQ-C-30 survey. It has resulted that Chinese individuals reported the highest overall health, followed by Malay and Indian. The survey also revealed that respondents gave positive feedback on the quality of life in terms of functionality but not on the symptom scale. Common symptoms included dyspnoea, constipation, diarrhea, vomiting, and discomfort (Ganesh et al., 2016a). Lua et al. (2020) conducted a more recent study on the quality of life of breast cancer survivors in a public hospital. Most of the participants reported a high quality of life in all dimensions, including global health status ($p = 0.261$), functional measures ($p = 0.926$), and symptom scales ($p = 0.477$).

The survival rates for breast cancer cases in Malaysia are unsatisfactory, due to the increasing number of new cases and deaths. In comparison, Australia (89.5%), China (83.2%), Hong Kong China (83.3%), Japan (89.4%), Korea (86.6%), New Zealand (87.6%), and Singapore (80.3%) achieved 5-year net survival rates that exceeded 80% from 2010 to 2014. In contrast, Malaysia (65.0), India (66.1), and Thailand (68.7) achieved survival rates that were less than 70% (OECD/WHO, 2020).

Factors Influencing Quality of Life

Breast cancer survivors encounter a multitude of obstacles in their pursuit of recovery and the preservation of a high quality of life (Cimprich et al., 2002). Many contributing factors lead to the challenges. One of the primary factors that can have a substantial impact on the quality of life of breast cancer survivors is their demographic profile, which encompasses age, marital status, education level, financial status, and occupation. While the number of survivors has slightly increased as a result of technological advancements in cancer treatments, the quality of life outcome for each patient varies based on the cancer stage, long-term disease-free survivorship, and first recurrence of the cancer (Chopra & Kamal, 2012; Costa et al., 2017). The quality-of-life scores of breast cancer survivors were found to be higher when they were elderly, Chinese, single/divorced/widowed, and had permanent employment, according to a study conducted in Malaysia. Conversely, a comparable investigation conducted in Vietnam discovered that breast cancer patients who were younger, married, had a moderate income, and had concluded at least six months of treatment had a superior quality of life. These results indicate that the quality of life of breast cancer survivors in various countries may be influenced by cultural and socioeconomic factors (Ganesh et al., 2016a; Tran et al., 2019).

Fear is another psychological factor that influences the quality of existence. There are numerous varieties of fears that may arise, and this is the point at which patients may experience emotional and physical challenges. Previous research has indicated that certain women are apprehensive about mastectomy and surgery, which can negatively impact their body image and create the impression that their companions will abandon them (Brinton et al., 2014; Koboto et al., 2020). Additional instances of fear have been documented, such as the dread of a cancer diagnosis and the fear of the proposed treatment. Depending on the patient's condition, this may involve the decision to undergo a lumpectomy, axillary dissection, or other related procedures. One of the reasons for patient delays to the hospital and reduced effort to perform BSE, CBE, or mammograms is the fear of discovering a tumor. Consequently, they may maintain a denial regarding their connection to cancer. To maintain the patient's psychological well-being, they must be assisted in comprehending the recovery process, which may require a longer time to enhance their quality of life (Paraskevi, 2012; Salem & Daher-Nashif, 2020). Additionally, the dread of breast cancer has influenced the decision of women to forgo early screening, as the disease is commonly perceived as a cause of death, as per Kissal et al. (2018) and Lexshimi et al. (2014). Moreover, the patient's low self-esteem is a result of their dread of social stigma, which can delay screening and affect their psychological well-being and quality of life.

Next, these cancer patients must acquire knowledge in health literacy, as they must be informed about the cancer that has affected them. A survey was conducted in Turkey to evaluate the level of knowledge of gynecological cancer patients regarding cancer prevention. It was found that the majority of respondents (87.9%) concurred that early screening can save lives, that 57.3% comprehend that being obese increases their likelihood of developing cancer and that over 50% were unaware of the symptoms of gynecological cancer, which include bleeding between two menstrual periods. A higher quality of life was observed among

respondents who scored high on cancer knowledge, as indicated by an additional study (Adamowicz et al., 2020; Evcili & Bekar, 2020). In another instance from Malaysia, it was asserted that breast cancer awareness is inadequate, despite the existence of a variety of media platforms that are employed to enhance knowledge, including technological platforms like WhatsApp and smartphone applications (Nasution et al., 2021). There is still room to enhance the awareness of breast cancer and its knowledge among local women, as there are numerous clinical presentations and risk factors (Lee et al., 2019).

In addition to possessing knowledge about breast cancer, weight should also be considered a factor in self-care behavior. Another risk factor for the development of breast cancer is obesity (Gnagnarella et al., 2016; Lajtman, 2020; Lee et al., 2019). Numerous prior investigations investigating the relationship between obesity and cancer patients have determined that individuals who are obese or overweight are less inclined to pursue early cancer detection screening and maintain a healthy lifestyle. This is because prior research has demonstrated that the density of women's breasts decreases as their adipose tissue content increases, thereby simplifying the process of detecting cancer (Lee et al., 2019). A study in Slovakia examined the relationship between quality of life and obesity among endometrial cancer survivors. The findings showed that patients with level III obesity had a low level of quality of life compared to those with normal weight. This encompassed physical, emotional and social functioning. In the interim, they endure dyspnoea, fatigue, and pain, which are prevalent among obese cancer patients (Lajtman, 2020).

Social support is the fourth factor that influences quality of life. It can be interpreted as a cognitive evaluation of the sense of connection to others and the knowledge that assistance is available in the event of a need. This support can be provided by both informal networks of friends and family and formal networks of health care or social work practitioners (Shen et al., 2020). A robust bond of support has been identified between patients and their families and acquaintances in previous research. The investigation did indicate that the relationship is strong regardless of the presence of the disease. Consequently, it is advised that patients enhance their relationships with their family and acquaintances to enhance their quality of life (Lewandowska et al., 2020; Zhang et al., 2020). Additionally, the same results were identified with the assistance of the group's intervention. Group support roles have been shown to improve the patient's quality of life by offering them additional information, appropriate knowledge from medical doctors and nurses, and support from friends. The investigation also demonstrated substantial modifications that were implemented before and following the intervention, which significantly improved their quality of life (Dominic et al., 2018; Smith et al., 2018).

Many empirical studies have demonstrated that healthcare support, which is listed as the fifth factor, in addition to family and acquaintances, contributes to the development of positive social support. By utilizing technological platforms such as WeChat or other social media, healthcare professionals and patients can enhance patient interaction and, as a result, increase medical adherence. This is because certain patients may struggle to communicate in person but may thrive when utilizing this medium through messaging. The presence of healthcare professionals can enhance the level of knowledge among patients, thereby facilitating a more comprehensive comprehension of the disease (Benjamin, 2020; Wu et al., 2020). Additionally, numerous studies asserted that a positive relationship between a patient and a physician can result in increased treatment effectiveness, reduced recovery times, and enhanced physical and mental health. The patients' perceptions of their healthcare were also influenced by their interactions with healthcare professionals. These advantages are primarily associated with the quality of life of patients (Lubasch et al., 2022).

How Social Media Help

Social media has the opportunity to alter health behaviors, thereby enhancing the quality of life for its consumers. For instance, a prior study conducted in the United States that examined the use of the Internet for health-related purposes among adults revealed that 80% of them utilized the Internet to locate information. Nevertheless, only 20% of respondents reported utilizing social media to access health-related information. The same is true in Malaysia, where the general public prefers to consult with doctors rather than pursue health information (Calixte et al., 2020; Dawood et al., 2017). However, prior research has shown that social media can have a positive impact on the changes in the health-related behavior of users. For example, a study conducted in Turkey to gather perspectives from cancer patients regarding COVID-19 revealed that the media used to obtain information is primarily television (91.9%) and social media (43.8%) (Guven et al., 2020; Korda & Itani, 2013).

In particular, social media is crucial for sharing online health education with all people, including those affected by cancers, as a result of its extensive resources and beneficial content. For example, the majority of Twitter users agreed with the concept of creating a welcoming forum for education and support, and their understanding of breast cancer significantly increased. Besides disseminating valuable information, social media platforms can also distribute immediate results to the community at a quicker pace than traditional methods. Consequently, it encourages users to spend more time on social media, and a higher quality of life can be accomplished by fully utilizing it as an educational platform (Attai et al., 2015; M.-K. Smith & Denali, 2014). The majority of respondents in a previous survey regarding the efficacy of social media as an educational tool concurred that it can be effective. They identified Facebook, Pinterest, and Instagram as the most frequently used platforms for education (Pizzuti et al., 2020). Even though users in Malaysia demonstrated a satisfactory level of social media usage, particularly on Facebook, there is a dearth of prior research that has examined the potential of social media to enhance factors affecting the quality of life for breast cancer patients (Malaysian Communications and Multimedia Commission, 2018; Tobi et al., 2017).

Online support is highly significant in addition to the pursuit of online patient education. Some patients reported that face-to-face support was either unavailable or ineffective in satisfying their requirements (Mikal et al., 2019). In the past, breast cancer survivors who participated in semi-structured interviews regarding the use of online mediums to care for themselves and seek support expressed their reluctance to disturb nurses, as they were busy with clinical routines. Rather, they utilized it to solicit the guidance of other cancer survivors. Other than that, they can obtain a speedier response by participating in virtual communities on social media. Not only can they feel empowered, but they can also supplement additional social support without having to rely solely on healthcare providers by utilizing online social media (Ure et al., 2020). Through the virtual presentation of embraces, expressions of warmth, and the delivery of strong comments, emotional support was demonstrated (Harkin, 2017).

The factors that influence quality of life underscore the importance of social media. The sociodemographic profile which encompassed age, educational background, various occupations, and income, was used to demonstrate their willingness to become one of the respondents for treatment of HR+/HER2 preferences and strategy to seek health information. This is attributable to the women's robust self-efficacy in utilizing and gaining knowledge from social media to enhance their quality of life (Calixte et al., 2020; Stellato et al., 2021).

Psychological issues, including foreboding and seeking support from other cancer users, can also be discussed by cancer patients on social media. Informational, emotional, general guidance and resource support are among the recognized forms of assistance that are accepted. The vast majority of cancer patients employ social media platforms to articulate their anxiety regarding the disease, as indicated by prior research. Posting and hashtags are employed to disseminate information (Bergerot et al., 2020; Cho et al., 2018; Lee et al., 2020; Mikal et al., 2019).

Additionally, the utilization of this virtual social media has the advantage of enhancing self-care behaviors in terms of weight management and knowledge. The virtual medium can be used to enhance the knowledge of users in the knowledge domain through e-health learning. A Facebook program for adolescents with cancer was the subject of a prior study conducted in Korea. This mixed-method study determined that the intervention program is usable and that users can become more familiar with the program's navigation, improve their knowledge of the program, reduce costs for developers, and improve intervention program management through social media by utilizing Facebook (Park et al., 2020; Smith & Denali, 2014). According to certain research, the majority of breast cancer patients are obese. (Gnagnarella et al., 2016; Pakiz et al., 2016; Smith et al., 2018). The role of social media in helping them lose weight through a weight-loss program is implemented. Previous research has shown that social media can help patients become more engaged, track their progress within groups, and be a cost-effective tool for improving their health and quality of life (Hopkinson et al., 2020; Lozano-Chacon et al., 2021; Rumbo-Rodríguez et al., 2020).

In addition to self-care behaviors, the function of social media can be evaluated in terms of its potential to enhance the patient's online support. A study was conducted in support of National Cancer Survivors Day 2018 to examine what survivors shared on content on Twitter and Instagram. It was found that breast cancer survivors were more active on social media (16%) than other types of cancer survivors like prostate and

ovarian both with 3%, colorectal 2%, cervical and lung cancer both with 1% and the rest like oesophageal and eye both have 0.5%. Moreover, about 74% of image content shared by Instagram, followed by textual content on Twitter at 56% and video content on Instagram at only 9%. On the support system, the support group (11%) made the most significant contribution to information exchange, followed by family and friends (6%) and medical doctors and nurses (6%). (2%). This support has several positive effects, such as the fact that they have individuals who can assist during challenging periods, the enhancement of their self-efficacy through the bonding process, and the positive motivation that is derived from the comprehension of family and friends (Cherian et al., 2020). In three consecutive years, from 2011 (28,275 tweets) to 2014, online participation, such as on Twitter with the hashtag #BREAST CANCER, exhibited a positive trend, as concurred upon by Attai et al. (2015). Although previous research has been conducted on the use of social media to communicate with cancer patients (Mikal et al., 2020; Oh et al., 2020; Shen et al., 2020; Williams et al., 2018) and how social media enhances one's quality of life (Afsar, 2013; Basirat et al., 2020; Makady et al., 2018), there is a lack of research on the most effective use of social media to guide users, including patients, carers, and physicians (Han et al., 2018; Stellefson et al., 2020). In Malaysia, even though users showed satisfactory usage of social media, especially on Facebook, there was a lack of past research investigating how social media can improve the quality of life among breast cancer patients (Malaysian Communications and Multimedia Commission, 2018; Tobi et al., 2017), and few past studies discussed the role of social media as a mediator between factors affecting quality of life, especially among Malaysian breast cancer survivors.

Underpinning Theory: Quality of Life Model

Breast cancer cases have been responsible for a high prevalence in women worldwide for over a decade. Women who are diagnosed with breast cancer may find it difficult to carry out their daily responsibilities, such as working and spending leisure time with family and friends. Breast cancer is one of the chronic diseases in which patients must wait longer for treatment to be completed; thus, the adverse effects and radiation exposure they receive may have an impact on their overall quality of life. As a result, improving quality of life became the primary goal for the majority of cancer patients in the cancer and survivorship studies (Lavdaniti, dan Tsitsis, 2015; Mokhatri-Hesari & Montazeri, 2020) Even though the number of survivors has increased slightly due to technological advancements in cancer treatments, the quality of life outcome for each patient differed due to cancer stage, long-term disease-free survivorship, and first recurrence of cancer (Chopra & Kamal, 2012; Costa et al., 2017).

Since the concept of quality of life first emerged in the 1920s, there has been no specific way to define quality of life. Those existing definitions are always derived from the impact of patients' health status on their normal routine (Lavdaniti, dan Tsitsis, 2015). In general, quality of life has been defined as a subjective measurement or indicator of the health status of cancer survivors (Firouzbakht et al., 2020). The World Health Organization (2019) provided another well-known concept for quality of life. It is concerned with the perception of individuals of their position in life in terms of the culture and value system they lived in and about their goals, expectations, standards, and concerns. This can be explained by a cancer patient's journey of recovery, which includes emotional exhaustion, pain, frequent follow-up appointments, loss of appetite, nausea, breathing difficulty, and other related factors such as changes in body image and low self-confidence. This multifaceted concept of quality of life was related to their personal goals, expectations, standard norms, and concerns. All the patient's side effects had a significant impact on his or her quality of life.

The WHO Quality of Life was developed by expert teams from various countries to be applicable in any part of the world, and it is available in nearly 40 languages. This 26-item questionnaire included a 5-point Likert scale for each of the tested domains. The reliability and validity checks were also successful. The overall concept of quality of life is well-defined, with excellent proposals (Bakas et al., 2012; Huang et al., 2017; Theofilou, 2013).
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Table 1: Quality of Life Model by the World Health Organization

Domain	Facets incorporated within domains
Physical Health	Activities of daily living
	Dependence on medical substances and medical aids
	Energy and fatigue
	Mobility
	Pain and discomfort
	Sleep and rest
	Work capacity
Psychological	Bodily image and appearance
	Negative feelings
	Positive feelings
	Self-esteem
	Spirituality/religion/personal belief
	Thinking, learning, memory, and concentration
Social Relationships	Personal relationships
	Social support
	Sexual activity
Environment	Financial resources
	Freedom, physical safety, and security
	Health and social care; accessibility and quality
	Home environment
	Opportunities for acquiring new information and skills
	Participation in and opportunities for recreation/leisure activities
	Physical environment (pollution/noise/traffic/climate)
	Transport

(World Health Organization, 1996)

Previous research has revealed how some factors relating to cancer patients positively or negatively impact their quality of life, which serves as the foundation for the quality of life model fit into this study. The study, which was conducted in Malaysia, sought quality of life among 223 breast cancer patients from oncology clinics, wards, and a daycare center in a public hospital. It was discovered that sociodemographic factors such as older age (55 years old and above) (mean score = 66.7), Chinese patients (mean score = 67.8), marital status of single, divorced, or widowed (mean score = 66.7), and having permanent better employment (mean score = 72.6) resulted in a higher quality of life score in comparison to other groups. (Ganesh et al., 2016b). The same study was also conducted among Vietnamese breast cancer patients in 2019. However, some differences in results were observed from the same type of study. This study was conducted in Vietnam, and it looked at the quality of life of Vietnamese breast cancer patients. It was discovered that being younger (mean score = 55.0), married (mean score = 55.2), having a moderate income (mean score = 55.7), and having completed at least 6 months of treatment (mean score = 55.6) were all associated with good quality of life (Tran et al., 2019).

Fear is the second factor that falls under the psychological state that affects the woman's quality of life. Several types of fears are involved, and this is where it may challenge the patient both physically and emotionally. According to previous research, some women are afraid of surgery and mastectomy, which can hurt their body image and give them the impression that their partners will leave them (Brinton et al., 2014; Koboto et al., 2020). Another type of fear also has been reported including the fear of cancer diagnosis and the planned treatments, including lumpectomy, axillary dissection, or other related surgeries based on the patient's condition. Fear of finding a lump also can become one of the reasons why the patient delays seeking help, other than less effort on performing BSE, CBE or mammogram. As a result, they may live in denial about their association with cancer. To keep the patient's psychological state in good shape, they must be helped to understand the recovery process, which may take longer than expected to improve their quality of life (Paraskevi, 2012; Salem & Daher-Nashif, 2020). Furthermore, women's fear of breast cancer has influenced their decision to forego early screening because the disease has a common perception of death. Furthermore,

the patient's fear of social stigma leads to low self-esteem, which delays screening and has an impact on their psychological well-being and quality of life (Kissal et al., 2018; Lexshimi et al., 2014).

Next, learning knowledge in health literacy is important because these cancer patients must notice and be aware of information about the cancer that has attacked them. For example, in Turkey, a survey was implemented among gynecological cancer patients to assess their level of knowledge about cancer prevention. It was found out 87.9% of the majority of respondents agreed that early screening can save lives, 57.3% understand that being obese increases their chances of getting cancer, and more than 50% did not know about the signs of gynecological cancer, which is bleeding between two menstrual periods. According to another study, respondents who scored high on cancer knowledge had a higher quality of life (Adamowicz et al., 2020; Evcili & Bekar, 2020).

However, the knowledge level among cancer patients was not always comparable to the outcome of healthy living among them. Obesity is another risk factor for developing breast cancer (Gnagnarella et al., 2016; Lajtman, 2020; Lee et al., 2019). Several previous studies on obese and cancer patients concluded that obese or overweight people are less likely to follow a healthy lifestyle and are less likely to seek early cancer screening. This is because previous research found that the fattier tissue women have, the less dense their breasts are, making cancer detection easier (Lee et al., 2019). A previous study in Slovakia among endometrial cancer survivors investigated the relationship between obese cancer patients and quality of life. The finding revealed class III obese cancer patients had the lowest quality of life as compared to normal weight. Physical, emotional, and social functioning are all included. Meanwhile, they experience pain, fatigue, and dyspnoea, which is common in obese cancer patients (Lajtman, 2020).

Another factor that affects quality of life is social support. It can be interpreted as a cognitive appraisal of being connected to others and knowing that help is available if needed, which can be provided by both informal networks of friends and families and formal networks of health care or social work practitioners. (Shen et al., 2020). Previous research has found a strong bond of support between patients and their families and friends. They did mention in the investigation that the relationship is good whether with or without the disease, and thus it is recommended to improve the relationship between patients and their family and friends to achieve a better quality of life (Lewandowska et al., 2020; Zhang et al., 2020). Furthermore, the same findings were discovered with intervention support from the group. It has been demonstrated that group support roles improve the quality of life among patients by sharing more information, receiving proper education from healthcare professionals, and receiving motivation from peers. The study also revealed significant changes made from pre- to post-intervention and how it greatly aided them in terms of quality of life (Dominic et al., 2018; Smith et al., 2018).

Many previous publications acknowledged good social support is not only found among the nearest circle like family and friends but also in a healthy environment. The relationship between patients and doctors or nurses can improve interaction and thus medical adherence among patients is good by using technological mediums such as WeChat or other social media. This is because some patients may not be able to communicate well in person but may do well when using this medium through texting. Having healthcare professionals on hand raises the level of knowledge among patients, which can lead to a better understanding of the disease (Benjamin, 2020; Wu et al., 2020).

Furthermore, the influence of social networking can lead to the possibility of changing health behavior, thereby improving the quality of life for its users. This also contributes to preventing patient delays because when healthcare professionals agree to share health education online, the possibility of patient delays is reduced. After all, information is shared without delay. In the United States, for example, a previous study that investigated health-related Internet use among adults revealed that 80% relied on the Internet to find information. However, only 20% reported using social media for health-related information. The same is true in Malaysia, where the general public prefers to consult with doctors rather than seek health information. (Calixte et al., 2020; Dawood et al., 2017). Nonetheless, previous research indicates that social media can positively influence users' health-related behavior change; for instance, a study in Turkey was done to seek perspectives among cancer patients on COVID-19, and it highlighted that seeking information is dominated by media such as television (91.9%) and social media (43.8%), respectively (Guven et al., 2020; Korda & Itani, 2013).

In addition, this was proved based on the sociodemographic profile of social media users, consisting of age, education, occupation, and monthly income to participate in the study of treatment HR+/HER2 preferences and the seeking of health information online. This is due to the women's strong self-efficacy in engaging in and learning from social media to improve their quality of life (Calixte et al., 2020; Stellato et al., 2021).

Furthermore, the increased use of social media can undoubtedly improve e-health learning among users to improve knowledge. A previous study in Korea looked into a Facebook intervention program for children with cancer. This mixed methods study found that the intervention program is usable and that by using Facebook, users could become more familiar with the program's navigation, improve knowledge from this program, reduce costs for developers, and researchers can improve intervention program management through social media (Park et al., 2020; Smith & Denali, 2014).

Body weight management via social media and mobile applications can also be viewed as motivating users to make an effort for improved quality of life. Through this medium, they can share their journey to a healthy lifestyle and make people aware of the food choices they can make other than setting goals, such as calorie counting, portion control, and the ability to read and understand nutritional labels. Aside from that, it can help to create a social support environment within the Facebook group to do healthy diet and fitness challenges posted by fitness coaches, such as the challenge of not eating candies for 2 weeks, using stairs to burn some calories, and recording calorie intake and sharing it on the group (Ghelani et al., 2020; Godino et al., 2016).

Last but not least, consider how the use of social media can help patients with online support. In conjunction with National Cancer Survivors Day 2018, a study was conducted to investigate the content shared by survivors on Twitter and Instagram. It was discovered that 16% of breast cancer survivors engaged actively on social media compared to other types of cancer survivors such as prostate (3%), colorectal (2%), lung (1%), cervical (1%), ovarian (3%), kidney, oesophageal, and eye, each of which is 0.5%. Instagram showed the highest rate for image content (74%) and video content with 9%. This result was followed by Twitter with textual content of 56%. On the support system, the support group (11%) contributed the most to information sharing, followed by family and friends (6%) and healthcare professionals (6%). (2%). Some of the positive outcomes of this support include the fact that they have people who can support them during difficult times, that the bonding created improves their self-efficacy, and that the understanding shown by family and friends brings positive motivation (Cherian et al., 2020). This is agreed by Attai et al. (2015) Online participation, such as Twitter with the hashtag #BREAST CANCER, demonstrated a positive trend in three consecutive years, from 2011 (28,275 tweets) to 2014 (85, 972 tweets).

Social Cognitive Theory

Albert Bandura's Social Cognitive Theory (SCT) is an interpersonal behavior theory that employs the concept of reciprocal determinism to explain how personal factors such as beliefs and attitudes, as well as environmental and behavioral factors, interact with one another. That does not imply that reciprocal causation contributed equally because one factor may have a greater influence than others at times (Bandura, 1989). In other words, SCT is a term used to describe how people learn behavior by observing others.

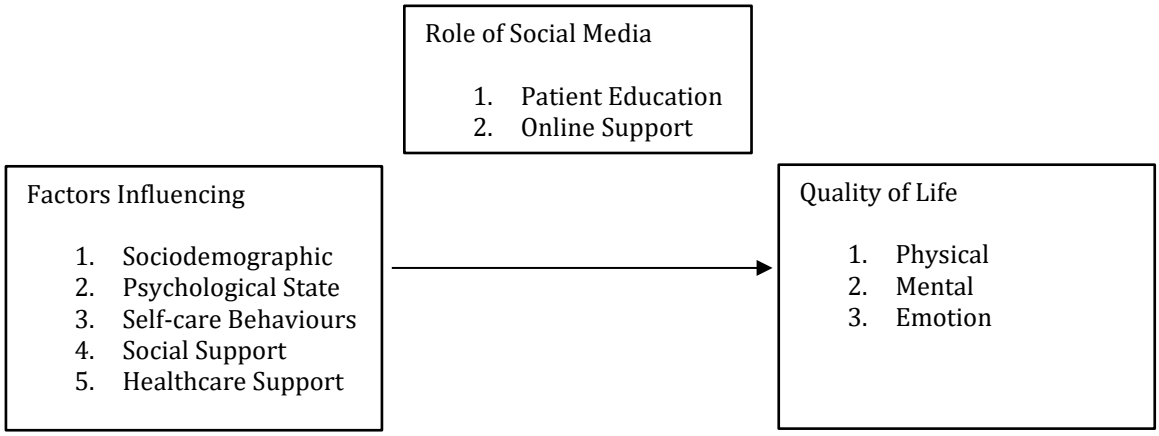
This theory was proposed for this study because it provides an understanding of how social media influences people's behavior to act in a certain way. By sending communication in two different ways, social media leads to behavioral change. The first involves guiding users to cope with new behavioral actions by informing, sharing, and motivating them to act with them; the second involves users adopting, supporting, and sharing the behaviors they adopted with others. This social media role has evolved into an environmental factor that influences both the user's personal beliefs and attitudes toward receiving health education and support, as well as shaping the behavioral outcome through observational learning (Li & Liu, 2020). Through observational learning, SCT is said to emphasize peer influences and social norms for behavioral outcomes(Healy & Marchand, 2020). The healthcare domains have expanded their investigation into the use of SCT in social media, particularly behavior analysis. A portion of them was to investigate the causes of online engagement, health promotion, and disease prevention (Bashir, 2020; Yoon & Tourassi, 2014). SCT has been used to study behavior in non-healthcare areas, with a particular focus on Chinese social media discontinuance. SCT is a suitable tool for examining online behavior on social media (Gan et al., 2024).

Previous research demonstrated how this theory aided social media or application influence for behavioral change for better health status. The use of the MapMyFitness mobile application and Facebook by breast cancer survivors in preventing recurrence has shown self-regulation in improving their quality of life by performing physical activities. It is also discovered that this technologically-based medium provides survivors with health education and support for them to care for themselves(Pope et al., 2019). Nevertheless, the majority of previous research on using SCT has focused on Western countries, leaving a significant knowledge gap about the topic in the Malaysian context. Moreover, there is a lack of consistency in the advantages of social media across studies, making it difficult to generalize the findings. This review aims to bridge these gaps by implementing behavior analysis in social media among Malaysian breast cancer survivors. In addition to supporting the application of the theory in this investigation, this study can offer insightful results regarding the influence of social media on the quality of life of breast cancer survivors. Furthermore, the study might provide information regarding the various factors that contribute to the inconsistent use of social media. In simpler terms, the use of social media by users, particularly patients, may or may not be useful.

Proposed Conceptual Framework

In this study, we introduced a conceptual framework to ascertain the factors that influence quality of life in the context of breast cancer and the impact of social media. Our framework posits that the quality of life of Malaysian breast cancer survivors can be influenced by five factors: demographic profiles, healthcare professional support, self-care behavior, psychological state, and social support. Although the relationship between those determinants was investigated, social media has been instrumental in fostering a more positive relationship, which will lead to a higher quality of life for more survivors. Furthermore, the influence of social media in this context is associated with two functions: online support and patient education. The framework assists stakeholders in gaining a more comprehensive understanding of the interactions between factors that influence quality of life and the role of social media in supporting breast cancer survivors in the digital era.

Figure 1: Proposed Conceptual Framework



3. Research Methodology

To respond to designated research objectives, the researcher will use a quantitative research design. This study will use Malaysian breast cancer survivors' data from a non-profit organization's cancer registry to fill out the surveys. The purposive sampling method was applied to this study due to the inclusion and exclusion criteria listed. Inclusion criteria require applicants to be female, over 18 years old, breast cancer survivors, not currently hospitalized, have at least one social media account, be in stages I-IV of breast cancer, have completed conventional treatment, and have survived at least six months post-treatment. Exclusion criteria include being male, under 18, survivors of other cancers, currently hospitalized, lacking a social media account, not having completed conventional treatment, being critically ill, or being unable to participate in the survey. The population of breast cancer survivors in Malaysia as of 2018 is 17,009 (National Cancer Registry Department, 2018b). Green (1991) states that 97 samples can be collected to accommodate the six predictors with a medium-sized effect. This study will run the analysis using SPSS and Smart PLS version 4.

4. Relevant Implications

This study focuses on the important function of social media in moderating the factors that influence the quality of life among breast cancer survivors. The findings imply that social media platforms can be a very effective and promising strategy for improving quality of life in terms of physical, emotional, and mental health through online knowledge sharing and emotional support from the online community. Certain types of information are presented, such as general cancer information, treatment options, and coping strategies. They can also access videos and professional advice through the platform. Other survivors on social media share the same problems and experiences with cancer, and they may help each other to have a better quality of life. It can lead to a reduction in isolated feelings that are not comforting. Support is also provided through online support groups, where members can share stories, express their opinions, and get inspiring words. The study also supports the integration of the Quality-of-Life model and Social Cognitive Theory, which focus on complex patient relationships and the role of social media in examining health outcomes. It will assist in proposing future research and interventions.

Aside from that, two important stakeholders, healthcare providers, and policymakers, may collaborate to promote patient-centered care through the social media platform. Healthcare professionals may create personalized social media accounts connected to their patients. This is intended to increase patient involvement with their providers. Healthcare practitioners can offer instructional materials, reminders for patient visits, and beneficial suggestions for managing chronic diseases. Next, doctors may launch a live video to establish real-time interaction, allowing for a quicker response to the patient's questions. Meanwhile, policymakers can improve their policies by soliciting feedback from social media users, resulting in a better understanding of the current healthcare system's requirements and weaknesses. They can also use this platform for public health campaigns, particularly breast cancer interventions. Despite numerous health efforts, the number of cases remains high. Thus, integration with social media and new campaign ideas is required. The policy can help address the gap in healthcare access by improving accessibility to underserved people, such as those living in rural locations or having difficulty seeking treatment owing to inadequate transportation.

Integrating social media use into healthcare settings may lead to the finding of relevant research topics. The first is to investigate how social media can be used to manage psychological issues such as anxiety and fear. The study could focus on the efficacy of online group support or virtual counselling in reducing patients' anxiety and fear and improving their quality of life. It may help to identify any benefits and drawbacks to using social media in the study. Next, future research can look into how social media might help with weight management by monitoring online behaviors or implementing diet challenges. Studies on the impact of fitness levels among cancer survivors may also be worth investigating. Another interesting area for additional investigation is the role of social media. This research focused on online information and support. Thus, future researchers can explore the impact of these on quality of life. These future studies can provide valuable information on the complex interactions between factors affecting quality of life, which ultimately lead to more effective patient-centred strategies.

5. Conclusion

This conceptual study has revealed significant factors that affect the quality of life among breast cancer survivors. Demographic elements like age, marital status, education level, income, and job type play a significant role in impacting quality of life. Psychological factors can disrupt the quality of life by avoiding the willingness to seek treatment. Self-care behaviors, through knowledge and body weight, are critical aspects in leading to quality of life. Social support from family, friends, and group support is vital for enhancing survivors' emotional and social functioning. Healthcare professional support is also important to motivate the survivors to improve their quality of life through their beneficial advice. Healthcare professionals are also helpful in motivating survivors with health-related concerns. Social media has demonstrated a positive impact on these factors by educating patients and providing online support. Despite these benefits, there is a need for more research on the most effective ways to use social media in guiding relevant parties like patients and carers.
The proposed conceptual framework effectively integrates different factors that affect the quality of life for breast cancer survivors while emphasizing the role of social media in the relationship. It comprehensively

addresses sociodemographic, psychological state, self-care behaviors, social support, and healthcare support on quality of life in terms of physical, mental, and emotional. By leveraging social media for patient education and online support, this framework demonstrates how the platforms can improve understanding of chronic conditions, improve adherence to treatment plans, and provide emotional and psychological support. This comprehensive approach makes a reliable model for enhancing the quality of life among the survivors.

For theoretical contribution, lies in the integration of the Quality-of-Life Model and Social Cognitive Theory in proving a holistic understanding of the factors affecting quality of life, moderated by social media. The Quality of Life offers a structured approach to assess the multifaceted impact of breast cancer on survivors' lives, while the Social Cognitive Theory emphasizes the role of personal (factors affecting the quality of life) and environmental (social media) factors in managing this chronic condition. This dual-framework approach not only introduced the importance of quality of life from the physical and mental perspectives, but it also provided actionable ways for interventions aimed at improving survivors' outcomes. By integrating social media, this study demonstrates how it can enhance patient education, support, and engagement, ultimately leading to a better quality of life. This contributes a novel perspective that can improve future research in the field of health management.

Three practical implications were stated. The Ministry of Health can play an important role in investigating technological advancement. By using its official website, myHealth Portal and developing new social media mainly for cancer survivors, it shows the continuous support for these groups. Some of it is sharing accurate health information, success stories from various cancer survivors, healthy lifestyle tips and a few types of fun physical activities to perform. As more users rely on mobile technology to monitor health, these resources will become useful and valuable.

Ultimately, this investigation would be advantageous to both the general population of young women and the broader community. By expanding their range of alternatives, this investigation will serve to improve the quality of life for young women and the community. Next, healthcare professionals can use social media platforms to continuously deliver accurate and timely health information to patients. This technique is suitable for patient education and support while motivating them to be more concerned with their healthcare. What the professionals can share are important cancer information, cancer updates, and useful prevention care recommendations. Moreover, establishing online support groups can be a practical approach, especially with peers, while encouraging family and friends to join to improve on continuous emotional support and motivation. The combination of peers and family or friends in online support can create a good support system that addresses both the emotional and practical needs of the survivors, which will reduce isolation and sadness and improve quality of life.

The scope of future research for this study has been established. Future researchers can make significant contributions to the field of breast cancer survivorship by conducting several studies. This study can be improved by examining the effects of social media at various points throughout the survival years. Currently, survival rates are counted within one, three, and five years. As a result, future research can look into whether there has been any difference in how people use social media to improve their quality of life throughout the years. Furthermore, specific social media platforms can be analyzed to see the sort of content published and how it corresponds with the survivor's experiences using the platform. The findings will help establish whether a specific platform is the appropriate medium for breast cancer survivors. Finally, examines the efficiency of social media and other offline coping mechanisms about factors affecting survivors' quality of life. In this regard, the study could include cognitive behavioral therapy as an offline strategy for improving quality of life. It can then be compared to the use of social media to evaluate which coping method is most helpful in assisting the survivors. Nevertheless, there are limitations to address. As a conceptual study, this research does not present any empirical data to support the literature review claims. Further research is needed by conducting surveys to compile the data and test the hypotheses. Other than that, this study focused solely on breast cancer, limiting the generalisability of findings and results to other types of cancer. Finally, this research is not specifically focused on a particular social media platform, which may lead to differences in the study for every type of social media platform.

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