

# The Correlation Between Dispositional Optimism and Posttraumatic Growth Among Breast Cancer Patients

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## ABSTRACT

Experiencing breast cancer diagnosis and treatment can be traumatic, but can also facilitate the occurrence of positive changes known as posttraumatic growth. Dispositional optimism is one personal characteristic that may enhance posttraumatic growth. This study was conducted to examine the correlation between dispositional optimism and posttraumatic growth among breast cancer patients. Respondents in this study were women who had breast cancer, had surgery at least two months ago, and were currently undergoing medical treatments. Data were collected using The Life Orientation Test-Revised (LOT-R) scale and the Posttraumatic Growth Inventory (PTGI) scale. Data from 53 respondents were analyzed using Spearman's rank-order correlation analysis. The results revealed that there was a significant positive correlation between dispositional optimism and posttraumatic growth ( $r = 0.331$ ,  $p = 0.008$ ). Patients with higher dispositional optimism were more likely to experience higher posttraumatic growth because they tend to interpret the traumatic experience positively and use adaptive coping strategies. Based on these findings, we recommend positive intervention from medical and mental health professionals to improve optimism and encourage posttraumatic growth in breast cancer patients.

**Keywords:** breast cancer, dispositional optimism, posttraumatic growth.

## 1. INTRODUCTION

Breast cancer is the second most common cancer in women after lung cancer (Global Cancer Observatory, 2018). In 2018, more than two million new cases of breast cancer were diagnosed and more than 600,000 deaths were reported globally (Bray et al., 2018). In Indonesia, breast cancer is the most common type of cancer in women, with an average prevalence of 42.1 cases and 17 deaths per 100,000 women (Kementerian Kesehatan Republik Indonesia, 2019). Breast cancer is perceived as a frightening disease due to

high mortality rates and the probability of cancer cell re-occurrence.

Receiving a breast cancer diagnosis and undergoing treatment can be a traumatic experience. The most common first reactions to breast cancer diagnoses are surprise and denial (Barakat, Abdel-Aziz, & Kandeel, 2018; Gonzalez & Lengacher, 2007). Patients often experience difficulties in emotional regulation and treatment planning, as well as feelings of anxiety about death, the re-occurrence of cancer cells, and the long-term impact of treatments (Barakat et al.,

2018; Hack et al., 2010). The medical treatments for breast cancer also have physical and psychological impacts, including nausea, vomiting, hair loss, weight loss (Kornstein & Clayton, 2002), a decrease in self-esteem, and perception changes regarding femininity and sexuality (Kornstein & Clayton, 2002), especially for women who undergo breast removal surgery. Many women report feeling terrible, sad, ugly, and incomplete after breast removal surgery (Koçan, & Gürsoy, 2016) because breasts are considered a symbol of femininity, motherhood, beauty, body image, and personal confidence (Boyd, 2001).

Along with the negative experiences associated with breast cancer diagnosis and treatment, patients may also experience positive changes as a result of struggling with traumatic experiences (Tedeschi & Calhoun, 1996), a phenomenon termed posttraumatic growth. People who experience posttraumatic growth often report positive changes in their ability to relate to others, find new possibilities, gain personal strength, experience spiritual changes, and have a greater appreciation for life (Tedeschi & Calhoun, 1996). Breast cancer patients often develop a heightened sense of closeness and intimacy with others because they have expressed more emotions while navigating the challenges of the diagnosis (Tedeschi & Calhoun, 2004), adding deeper meaning and value to their relationships (Cordova et al., 2017). They may also experience an increase in empathy toward others (Tedeschi & Calhoun, 2004). In terms of finding new possibilities, breast cancer patients may foster new interests and develop new goals to be achieved (Tedeschi & Calhoun,

2004). Some activities they once enjoyed may be limited by the disease, but cancer patients may explore new activities, which can lead to the discovery of new interests and opportunities. Tedeschi and Calhoun (2004) illustrated that when an individual overcomes a traumatic experience, they may feel stronger and like they can deal with any challenges that arise in the future; thus, gaining personal strength. In terms of spiritual change, a serious diagnosis may lead to questions about one's existential self (Tedeschi & Calhoun, 2004). Someone who previously lacked closeness to God may develop a stronger belief system to cope with traumatic experiences (Tedeschi & Calhoun, 2004). Finally, individuals who experience posttraumatic growth may gain a new perspective on life, seeing everything with a greater appreciation and a sense of gratitude (Tedeschi & Calhoun, 2004). Days that were previously perceived as ordinary become precious and full of meaning.

To experience posttraumatic growth, the individual must perceive an event as traumatic, to a degree that it severely threatens the individual's previous beliefs about the world (Tedeschi & Calhoun, 2004). The individual might gain a new interest in fundamental issues, questioning their identity and the meaning and purpose of life. Posttraumatic growth often involves replacing a previous belief with one that is more relevant to their new condition and resistant to future adversity, allowing the individual to move forward and achieve new goals in life.

Today, patients have better access to health-related information and it is easier than ever to connect to other people. Patients can learn and connect with others through shared experiences and

expressions of emotions and thoughts. Posttraumatic growth can occur when patients better understand their health condition, find meaning in traumatic events, and build a new perspective on life.

Posttraumatic growth is important for breast cancer patients because it can improve their quality of life. Morrill et al. (2008) conducted a study of patients with stage I and II breast cancer and found a positive relationship between posttraumatic growth and quality of life. The results of a meta-analysis conducted by Parikh et al. (2015) also showed that posttraumatic growth is associated with a better lifestyle, happiness, and psychosocial well-being.

Previous studies found that not all patients experienced posttraumatic growth, although it was common among breast cancer patients (Koutrouli, Anagnostopoulos, & Potamianos, 2012; Parikh et al., 2015). Dispositional optimism was identified as a personal characteristic that plays a significant role in posttraumatic growth (Bozo, Gündoğdu, & Büyükaşık-Çolak, 2009; Tedeschi & Calhoun, 1996; Rahmah & Widuri, 2011). Scheier and Carver (1993) defined dispositional optimism as “the belief that good, as opposed to bad, things will generally occur in one's life” (p. 26). People with dispositional optimism will be more likely to experience posttraumatic growth. Optimist patients are more likely to build a positive interpretation and understanding of traumatic events, and also tend to employ more adaptive coping strategies than pessimists (Freres & Gilham, 2016).

A few studies have examined the relationship between dispositional

optimism and posttraumatic growth in Indonesia. One such study reported that optimism was a predictor posttraumatic growth among earthquake survivors who suffered physical disabilities (Harsono, 2015). A qualitative study on breast cancer patients also determined that optimism is one internal factor that supports posttraumatic growth (Rahmah & Widuri, 2017). Nevertheless, it is important to examine the correlation between dispositional optimism and posttraumatic growth in breast cancer patients since breast cancer is the most diagnosed cancer in Indonesia (Kementerian Kesehatan Republik Indonesia, 2019). Posttraumatic growth can be beneficial for patients, leading to improved quality of life (Morrill et al., 2008) and psychosocial well-being (Parikh et al., 2015). Hence, this study was conducted to determine whether dispositional optimism positively correlated with posttraumatic growth among breast cancer patients in Indonesia.

## 2. METHODS

### 2.1. *Participants*

The participants in this study were women (18 years or older) who had breast cancer, had surgery at least two months ago, and received treatment in the Jakarta area.

### 2.2. *Research Design*

A quantitative, non-experimental, cross-sectional design was employed in this study. Data were analyzed using Spearman's rank-order correlation analysis.

### 2.3. *Instruments and Measurement*

The dependent variable, posttraumatic growth, was measured using

the Posttraumatic Growth Inventory (PTGI) scale developed by Tedeschi and Calhoun (1996). The scale has been translated into Bahasa. The PTGI consists of 21 positive statement items from five dimensions: relating to others (seven items), new possibilities (five items), personal strength (four items), spiritual changes (two items), and appreciation for life (three items). The respondents were asked to determine the extent to which the statements describe changes in themselves as a result of having breast cancer using a six-point Likert Scale ranging from “0 - did not experience this change as a result of my breast cancer experience” to “5 - experienced this change to a very great degree as a result of my breast cancer”. The range of possible scores that can be obtained on the PTGI is 0–105. A higher score indicates more posttraumatic growth. The PTGI scale has been tested psychometrically, and the result showed that the coefficient of reliability (Cronbach’s alpha) of this measuring instrument was 0.922.

The independent variable, dispositional optimism, was measured using The Life Orientation Life Orientation Test-Revised (LOT-R) developed by Scheier, Carver, and Bridges (1994). The scale has been translated into Bahasa. The LOT-R consists of 10 items: four items are filler, three items are favorable statements, and three items are unfavorable statements. The respondents were asked to indicate the extent to which the statements describe themselves using a five-point Likert Scale ranging from “1 – totally disagree” to “5 – totally agree”. The range of possible scores that can be obtained on the LOT-R is 3–15. A higher score indicates more dispositional optimism. This scale has been tested psychometrically and the result showed that the coefficient of reliability

(Cronbach’s alpha) of this measuring instrument was 0.631.

#### **2.4. Procedure**

The application for research ethics review was proposed to the Ethics Committee of Faculty of Psychology, Universitas Indonesia. After passing the ethics review, the permit application for collecting data was approved by Rumah Sakit dr. Cipto Mangunkusumo (RSCM). The respondents were approached when they were awaiting radiotherapy treatment or consultation with a doctor. Informed consent was provided, then the questionnaires were read and the respondents answered the questions. Lastly, the respondents were given a souvenir of appreciation and were allowed to express more about their experiences if they felt compelled to do so. Data were then analyzed using Spearman’s rank-order correlation analysis.

### **3. RESULTS**

Data from 56 respondents were obtained and 53 were included in the analysis. Data from three subjects were excluded because they did not fit the criteria. Most respondents were in the age range of 40–64 years (84.9%) and the majority were married (77.40%). High school was the last completed education level for most (30.20%). The majority of participants had received the diagnosis in the last 1–5 years (79.20%) and most were diagnosed between ages 40–64 years (81.10%). Stage II was the most common currently diagnosed stage (37.70%). Most respondents reported that they were no longer able to do physical activities (77.40%).

The average score on the LOT-R measuring dispositional optimism was

12.67 (SD = 1.52), while the average score on the PTGI measuring posttraumatic growth was 68.26 (SD = 19.38). Most respondents obtained high scores on dispositional optimism (89% of all respondents) and posttraumatic growth (57% of all respondents). Spearman's rank-order correlation analysis revealed that there was a significant positive correlation between dispositional optimism and posttraumatic growth ( $r = 0.331, p = 0.008$ ).

A simple linear regression analysis was also conducted to determine the contribution of age to posttraumatic growth. The results from the linear regression show that age was not a significant predictor of posttraumatic growth ( $F(1,51) = 1.259, p > 0.05, R^2 = 0.024$ ). In other words, age contributed to posttraumatic growth by only 2.4%. The effect size 0.024 is relatively small according to Cohen (1988, in Gravetter & Wallnau, 2013).

Additionally, a simple linear regression analysis was conducted to examine the contribution of age at diagnosis to posttraumatic growth. The result showed that the relationship was significant, and the linear regression equation of age at diagnosis could predict posttraumatic growth ( $F(1,51) = 5.133, p < 0.05, R^2 = 0.091$ ). Age at diagnosis contributes to posttraumatic growth by 9.1%. An effect size of 0.091 is classified as moderate according to Cohen (1988, in Gravetter & Wallnau, 2013).

A one-way ANOVA was also performed to determine differences in posttraumatic growth scores between education levels. It was found that posttraumatic growth was not affected by the education level.

#### 4. DISCUSSION

This study was conducted to examine the correlation between dispositional optimism and posttraumatic growth among breast cancer patients. The results supported a positive correlation between dispositional optimism and posttraumatic growth. In other words, people who possess an optimistic disposition experience more posttraumatic growth. These results are consistent with previous reports (Bozo, Gündoğdu, & Büyükaşık-Çolak, 2009; Tedeschi & Calhoun, 1996; Rahmah & Widuri, 2011).

When facing adversity, individuals tend to question the meaning of life, the meaning of the traumatic event, the meaning of their existence, or similar questions (Tedeschi & Calhoun, 2004). Breast cancer patients report similar experiences. The shock of a breast cancer diagnosis and painful medical treatments can be traumatic. Some patients are no longer able to work or participate in other activities that were previously meaningful to them. Such experiences often lead to a reconsideration of one's purpose in life and future. During this cognitive process, optimists are more likely to focus their attention and effort on controllable and solvable problems rather than things that are beyond their control (Aspinwall, Richter, & Hoffman, 2001, in Tedeschi & Calhoun, 2004). Individuals are often forced to disengage from their previous beliefs and goals and focus on reconstructing new beliefs and goals. Optimists also tend to build meaning, goals, perceptions of positive self-capacity, and positive interpretations and explanations for the events they experience (Freres & Gillham, 2006). Optimistic thinking can facilitate the process of

reconstructing new beliefs, leading to the occurrence of posttraumatic growth.

Interestingly, our results also revealed that the age at diagnosis contributes significantly to posttraumatic growth. The younger a patient was diagnosed, the higher the level of posttraumatic growth. These results are in line with a previous report (Andysz et al., 2015), which found that patients who received diagnoses at a younger age experienced higher posttraumatic growth compared to patients who received diagnoses at an older age. This may be attributed to the fact that breast cancer is less common in young patients (Manne et al., 2014). Andysz et al. (2015) suggested that older patients have lived through more negative experiences, for example, being left behind by a loved one who died. Thus, the experience of receiving a breast cancer diagnosis and treatment might have less impact. To develop posttraumatic growth, an individual must feel strongly threatened and shocked by a traumatic event. Young individuals are also expected to have the ability to deal with situations with a positive attitude, which can lead to the occurrence of posttraumatic growth (Manne et al., 2014).

The results of this study also revealed no significant effect of the last completed education level on posttraumatic growth. The average posttraumatic growth scores varied at each education level; the highest scores were obtained by people with master's degrees, followed by elementary and junior high school, and the lowest scores were obtained by people with high school education. Previous studies also revealed relatively varied results. Some studies reported that higher education levels were associated with higher

posttraumatic growth (Danhauer et al., 2013; Sharma & Zhang, 2017). In a study conducted by Wang et al. (2017), the results demonstrated that education level moderated the relationship between posttraumatic growth and distress in cancer patients. These results may arise because people with a higher level of education tend to be able to find positive meaning in the traumatic experience (Wang et al., 2017). Another possibility is related to socioeconomic status, in which people with lower levels of education experienced more diverse problems, while also having fewer resources (Wang et al., 2017). In this study, the results showed that there was no effect of the last education level on posttraumatic growth, indicating that the ability to find meaning from a traumatic experience is not related to education. In addition, patients with lower education levels may experience more distress from socioeconomic problems, patients with higher education levels can experience greater distress because they experience more unpredictable changes in life. However, further research is needed to elucidate the relationship between posttraumatic growth and education level.

In this study, we found that the majority of respondents had high levels of posttraumatic growth. This may be explained by the demographic characteristics of respondents in which all of the respondents were women. Koutná (2017) found that women have higher posttraumatic growth rates than men. According to Vishnevsky et al. (2010), this could happen because women tend to have more ruminative thoughts than men, thus encouraging posttraumatic growth (Tedeschi & Calhoun, 2004). In addition,

women tend to employ emotional coping strategies to manage stressors and stabilize emotions; therefore, women may contemplate and rationalize their traumatic experiences and learn to accept them (Vishnesvsky et al., 2010).

## 5. CONCLUSION

The results of this study revealed a positive correlation between dispositional optimism and posttraumatic growth among

breast cancer patients. Optimistic patients are more likely to perceive their breast cancer experience positively and find meaning in it, resulting in positive changes. This result can contribute to improving breast cancer patients' care. It is important for medical and mental health professionals to improve patients' dispositional optimism to facilitate posttraumatic growth.

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