

Gratitude Training: Improving Life Expectancy for People with Chronic Diseases

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ABSTRACT

People suffering from chronic diseases such as breast cancer and heart disease usually feel they have low life expectancy. Gratitude skills considered to be one of factors that could increase the hope for life and promoting the recovery of patients with chronic diseases. To prove this assumption, research was conducted to prove whether gratitude training could increase hope for life in adult patients with breast cancer and heart diseases. This research used a quasi-experimental method randomized two groups (control and experiment) pretest-posttest design, following the gratitude research procedures conducted by Bahar & Moordinarsih on heart disease in 2020. This research involved 32 (21 females, 11 males) with the age range from 30 to 61 years old (Mean = 49.50, SD = 8,474). Participants in this study were divided into two groups consisting of 14 participants in the experimental group (7 with breast cancer, 7 with heart disease) and 18 participants in the control group (9 with breast cancer, 9 with heart disease). The research results showed gratitude training is effective in improving hope for life. The findings also revealed that participants with heart disease experienced a higher effect of gratitude training than participants with breast cancer.

INTRODUCTION

World Health Organization (WHO) states cancer is the second largest cause of death with an estimated 9.6 million deaths or one in six deaths caused by cancer in 2018 (World Health Organization, 2023). One type of cancer that is also the highest contributor to the death rate from cancer is breast cancer. Based on data released by the 2020 Global Burden of Cancer Study (Globocan), breast cancer in Indonesia ranked first most common and the highest contributor to the death rate from cancer in Indonesia (Rokom, 2022). The prevalence of this disease is increasing every year and can have a significant impact on sufferers.

Breast cancer requires continuous treatment, such as chemotherapy, hormone therapy, and mastectomy, which is a procedure for removing part or all of the tissue in the breast which causes physical and psychological effects, making the sufferer feel frustrated, stressed, and can reduce their hope for life (Rokom, 2022). Long-term and regular treatment can make breast cancer patients depressed, worried, afraid, anxious, stressed and other negative feelings (Holst-Hansson et al, 2017).



The presence of negative affection and lack of positive affection in breast cancer patients can reduce motivation to recover, which indicates that the life of hope is decreasing.

In addition to breast cancer, Global Burden of Disease & Institute for Health Metrics and Evaluation stated that in the 2014-2019 period (Harmadha et al., 2023), heart disease was one of the highest causes of death in Indonesia. Based on data on the distribution of causes of death in Indonesians in the WHO (2021), ischemic heart disease occupies the second position after stroke, both for women and men. Statistical data on the age distribution of individuals diagnosed with heart disease in 2010-2019 (Rethemiotaki, 2024) showed that the majority of heart disease patients are in the age range 25 - 95 years and above.

Generally, heart disease patients who have just found out that they have been diagnosed with the disease experience shock and stress. Many things suddenly raced through their mind; the treatment process, costs of treatments, the possibility of facing multiple operations, incidental death, and limitations in activities (Bahar & Moordiningsih, 2020). These things ultimately cause a psychological burden on the patient. They experience psychological conditions such as depression, low self-esteem, and dissatisfaction with their lives (Denollet, 1998). They also feel anxious, angry, and hopeless (Sarafino & Smith, 2010). This hopelessness in heart disease patients can be interpreted that heart disease patients experience a decrease in hope for the recovery of their condition (Eslami et al, 2017).

Based on those data, it can be concluded that patients of breast cancer and heart disease require long-term treatment which causes physical and psychological effects on the patients, including reducing their hope for life. In fact, hope has an important role in the patient's healing process both physically and psychologically (Rand, 2017). Research by Rand & Touza (2018) states that high hopes held by individuals are able to turn stress into a challenge that must be overcome, resulting in positive emotions. Having a high level of hope makes individuals more positive in facing the worst conditions in their lives and more optimistic, as well as experiencing lower levels of stress (Taheri & Falavarjani, 2019).

One of the factors that influences the emergence of hope for life in individuals is religious belief followed by spirituality (Weil, 2000). According to research conducted by Benzein et al (as cited in Wnuk, 2014), it shows that the subject's increased hope comes from spirituality and faith in God. This statement is also supported by Wnuk (2014) who states that the level of hope can be formed by increasing motivation to achieve goals through religion and religiosity which originates from the individual's ability to be grateful for conditions.

McMillen (as cited in Krause, 2006) also explains that gratitude makes individuals able to see things positively, even in suffering, they will find positive meaning in their suffering. Research by Witvliet, et al (2018) shows that being grateful or remembering past hopes that have been successfully achieved results in increased hope and happiness. Gratitude training is one way to help subjects remember events that occurred in the past which ultimately encourages feelings of gratitude in the subjects (Emmons & Stern, 2013). Research by Ghazali, et al (2023) states that reducing negative emotions and depression in individuals can be done by generating positive emotions through the meaning of gratitude which can be mediated by gratitude intervention or training. Watkins, et al (as cited in Listiyandini et al, 2015) argue that gratitude training is divided into three aspects of gratitude, namely sense of appreciation for oneself, other people, God, and the life one has; positive feelings about life; and positive actions as a form of expression and appreciation for the things they have.

The next approach in understanding gratitude training is an approach from an Islamic psychology perspective. Saritoprak & Abu Raiya (2023) include gratitude as one of the training

activities for living a good life, especially in countries with Muslim majority populations such as Pakistan and Indonesia. Zakerniya & Naemi (2022) provide an example of the usefulness of gratitude training with an Islamic psychology approach for mothers with children with disabilities. Yuliatun & Karyani (2022) also use gratitude activities in Islamic positive psychology-based training to improve the psychological well-being of nurses. Pasha-Zaidi et al (2021) emphasizes that gratitude or shukr is an important value in Islam. They emphasize the importance of gratitude activities as part of the integration of Islamic psychology and positive psychology interventions to improve psychological well-being. This indicates that there is harmony in using gratitude training from both the perspective of Islamic psychology and positive psychology to improve well-being.

Research on measurement tools and interventions in Indonesia is research that is rarely conducted, especially in the field of positive psychology. One example of research regarding measuring instruments is the adaptation of self-compassion measuring instruments (Syaiful & Roebianto, 2020). Research on interventions, such as resilience interventions (Syaiful & Dearly, 2015), psychological well-being interventions by calculating blessings (Akhnaf, et al., 2024), and interventions to increase motivation and resilience (Haq & Rohmadoni, 2023). This research fills a gap in the positive psychology particularly gratitude interventions.

Hope

Herth (1992) defines hope as a positive perception and realistic desire that will occur within a certain period of time as well as a feeling of confidence that the plans that have been made will influence the desired results, followed by good relationships between oneself and others. According to Dufault & Martocchio (1985), hope motivates individuals to survive, ready for changes that may occur in the future. In addition, Dufault & Martocchio (1985) also holds the view that individuals who have specific hope in their lives are individuals who define hope as a very important tool in their lives. Meanwhile, Snyder (2002) argues that hope is a positive expectation of an individual's ability to create a path to achieve their goals and have the motivation to use that path. Duggleby et al (2023) define hope as a situational and complex condition experienced by individuals which is based on physical and mental health factors, which can be interpreted that if an individual experience a changing situation, the object of hope and its path will also change.

Hope is a psychological factor that has a considerable influence on patients after diagnosis and contributes to quality of life (Li et al., 2018). Hope can support an individual's desire for positive results and good feelings in realizing achieved goals or which can be interpreted that hope is present as motivation for individuals (Çavuş & Gökçen, 2015). In this research, the construct of hope refers to the hope of life as defined by Dufault and Martocchio (as cited in Herth, 1992) which define hope as a person's desire to achieve or move towards certain things that are realistic and achievable. According to Herth (1992) there are three dimensions of hope : (1) The temporality and future, this dimension describes an individual's belief in the future and their ability to achieve their life goals. (2) Positive readiness and expectancy, this dimension describes an individual's optimistic feelings and confidence in their ability to overcome ongoing or upcoming challenges. (3) Interconnectedness, this dimension describes the individual's relationship with others and his belief in the power of the relationship.

Gratitude Training

Gratitude is defined by Watkins (2014) as activities to see big or small possibilities that can be grateful for from individual experiences of all situations that occur and the presence of other people

who took part in the situation. Gratitude itself can be defined as an emotional feeling from the results of the implementation of individual attitudes and behaviors in facing certain situations. Gratitude training according to McCullough & Cohen (as cited in Bahar & Moordiningsih, 2020) is defined as a series of activities to increase individual gratitude for the situation that occurs. According to Wood, et al. (2010) the basis of gratitude training is learning to escape from negative information and focus on appreciating the positive things experienced.

In previous research related to gratitude interventions, one of the ways carried out in the study is to try to help the subject to remember events that occurred in the past which ultimately encourages gratitude in the subject (Emmons & Stern, 2013). Research by Ghazali, et al. (2023) state that to reduce negative emotions and depression in individuals, it can be done by generating positive emotions through the meaning of gratitude that can be mediated by gratitude intervention or training.

METHODS

Participants

Participants included in this experiment had the following criteria: (1) diagnosed with breast cancer or heart disease (2) willing to participate in the entire research process from start to finish, and (3) were able to use the ZOOM Meeting application.

Design

The research design of this study uses pretest-posttest non-equivalent quasi-experimental research. Participants were divided into two groups consisting of 14 participants in the experimental group (7 with breast cancer, 7 with heart disease) and 18 participants in the control group (9 with breast cancer, 9 with heart disease). The treatment in this experiment was given in the form of gratitude training, replicating the training provided in the research conducted by Bahar and Moordiningsih (2020). Only the experimental group received gratitude training treatment while the control group did not receive any treatment. Both groups received a pretest and posttest to measure the level of hope for life (see Figure 1.). The treatment in these experiments were given only to the experimental group, consists of three training sessions, carried out by trained psychologists using the Zoom meeting room application

KK	O1	-	O2
KE	O1	X	O2

Figure 1. Pretest-posttest non-equivalent quasi-experimental design

Instruments

Life expectancy is translated as the hope for life, was measured using the Hope Scale, adapted from the Herth Hope Index (Herth, 1992). The scale consists of 12 items, with five response options (score 1 = strongly disagree to 4 = strongly agree).

Procedures

In this experiment, the researchers duplicated the treatment in the form of gratitude training designed by Bahar and Moordiningsih (2020). Bahar and Moordiningsih created a training module based on the theory of gratitude proposed by Watkins (2014). In his theory, Watkins mentions four

components of gratitude, namely counting blessing, reflecting on gratitude, expression of gratitude, and gratitude reappraisal.

The experimental group received gratitude training, consists of 2 series of meetings, which were conducted using the Zoom meeting application. Each meeting has a duration of 2-3 hours, with time interval of 1 week. This aims to ensure that participants can practice the knowledge and skills that have been given during the training meeting session. The training schedule is described in table 1 below.

Table 1. Gratitude Training Schedule

<i>Meeting</i>	<i>Session</i>	<i>Activity</i>	<i>Time</i>
1	Session I	Introduction and Hope	10 min
	Opening	Goals, benefit, and Training Contract	10 min
	Session II Counting Blessing	"I am Not Alone"	20 min
		"What is Gratitude?"	15 min
		Life Graph	20 min
	Session III Reflecting on Gratitude	Finding 3 Grace	20 min
		The Life of a Family	30 min
		"Thank You" Letter	30 min
		"Gratitude Journaling"	5 min
	TOTAL		
2	Session IV	"Have You been Grateful?"	45 min
	Express Grateful	Start the day with Gratitude	10 min
	Session V Reappraisal	The Meaning of Occurrence	45 min
		Strengthen Feelings of Gratitude	15 min
	Session VI	Final Assessment & Evaluation	10 min
	Closing		
TOTAL			125 min

RESULTS AND DISCUSSION

This experiment involved 32 participants (21 females, 11 males) with the age range from 30 to 61 years old (Mean = 49.50, SD = 8,474). Of the total participants, 16 people were diagnosed with breast cancer and 16 people diagnosed from heart disease. The objective of this study was to examine the effectiveness of gratitude training on the hope for life among participants diagnosed with breast cancer and those with heart disease.

Mann-Whitney Test (U-Test) before treatment

Before the gratitude training began, we measured participants' level of hope for life. By using the Mann Withney U test, it was found that there was no significant difference in the level of hope for life between the two disease groups ($Z = - 1.384$, $p = 0.171$). The same results were also shown from the Mann Withney U test between the control group and the experimental group, which showed that there were no significant differences ($Z = - 0.019$, $p = 0.985$). The comparative analysis using the same statistic test showed that there were no significant differences between female and male participants before the training began ($Z = - 1.437$, $p = 0.151$).

Wilcoxon Signed Rank Tail Test Results

To examine the research hypothesis, the researchers proceed with Wilcoxon Signed Rank Tail Test. By comparing the pretest and posttest scores of 14 experimental group participants who received training, evidence found showed significant differences between the two groups ($Z = - 3.297$, $p =$

0.001). Hypothesis test results showed a higher level of hope for life after treatment (mean = 41.36, SD = 4.887) than before treatment (mean = 31.36, SD = 6.629).

Mann-Whitney Test (U-Test) after treatment

After training, we measured hope for life again to see the effectiveness of the training. The Mann Withney U test carried out on the posttest data showed that there was a significant difference between the control group participants who did not receive treatment and the experimental group participants who received treatment ($n = 14$, $Z = -4.248$, $p = 0.00$). From the mean value of the two groups, it showed that the experimental group had a higher level of hope for life (mean of rank = 24.46) than the control group (mean rank = 10.31).

We performed the same statistical analysis to determine whether there were differences in the effects of training in patients suffering from breast cancer and heart disease. By comparing the gain scores of the two groups of participants, results obtained showed significant differences in the training effects obtained ($n = 14$, $Z = -2.305$, $p = 0.021$). Participants with heart disease (mean rank = 10.07) experienced a higher effect of gratitude training than participants with breast cancer (mean rank = 4.93)

DISCUSSION

People suffering from chronic diseases such as breast cancer and heart disease usually feel they have low life expectancy. These chronic diseases cause a psychological burden on the patient, related to conditions such as depression, low self-esteem, dissatisfaction with their lives (Denollet, 1998), and feeling anxious, angry, and hopeless (Sarafino & Smith, 2010). Gratitude skills considered to be one of factors that could increase the hope for life and promoting the recovery of patients with chronic diseases (Bahar & Moordiningsih, 2020). This study was conducted to examine the effectiveness of gratitude training in increasing hope of life in patients suffering from breast cancer and heart disease.

The results indicated that the gratitude training is effective in increasing hope for life in chronic disease patients. This can be seen from the results of the comparison of hope for life measurements carried out before and after the experiment as well as the comparison of measurements between the control group and the experimental group showing significant differences. The level of life expectancy after training increased compared to before gratitude training. This can also be seen from the level of life expectancy in the experimental group after receiving training which was higher than the control group who did not receive training.

The results of this research can be explained by research conducted by Ratnayanti and Wahyuningrum (2016). According to the result, individuals who are grateful will accept everything in their life, both positive and negative, and can accept their past life and the current life they are living. Gratitude has an important role in psychological well-being. Individuals who have an attitude of gratitude have a feeling of not lacking what they have and are able to appreciate other people (Wood, Joseph & Maltby, 2009). Gratitude occurs when a person perceives himself or herself as the recipient of a benefit, especially if one perceives that it is in the benevolent sense of the benefactor (Roberts, 2004). Therefore, participants who suffer from chronic diseases, especially breast cancer and heart disease, will experience an increase in life expectancy. In the training, participants are taught and encouraged to be grateful even though they experience difficulties due to the disease they suffer from.

Related to that, Diniz et al (2023) conducted a meta-analysis study of 64 articles on gratitude interventions and found positive effects on health, well-being, and quality of life. This study added the effect of gratitude interventions in the form of training that can increase hope for life. This study also showed that the effect of gratitude training can be used for chronic patients such as heart disease and breast cancer patients. Previous studies have mostly shown the effect of gratitude to reduce depression and anxiety in general people. Muslim majority can also feel the benefits of gratitude training. Saritoprak & Abu Raiya (2023) explain that gratitude activities are part of an intervention to increase hope for a better life in a Muslim majority country like Indonesia. This study strengthens the evidence that gratitude activities can increase hope for life for chronic disease sufferers in Indonesia.

Research showing the benefits of gratitude activities to improve well-being from an Islamic psychology perspective can be found for mothers with children with disabilities (Zakerniya & Naemi, 2022), nurses (Yuliatun & Karyani, 2022), new students during the Covid-19 pandemic (Daulay & Munthe, 2022), and mothers with autistic children (Hizbullah & Mulyati, 2022). This study strengthens the finding that gratitude training can be beneficial for chronic patients, especially to increase hope for life. Saputro (2016) showed that after participating in gratitude training, breast cancer patients experienced an increase in resilience. In this study, gratitude training is also useful for increasing hope for life in breast cancer patients. This strengthens the usefulness of gratitude training. Witvliet et al (2018) also showed that when the condition of gratitude is achieved, it will result in an increase in hope which is in line with the results of this study that there is an increase in hope after the gratitude training.

Cuervo-suarez et al (2024) showed that the activity of gratitude can strengthen hope through difficult times. Gratitude activities have been shown to make it easier to control emotions and strengthen hope. In this training, grateful activities given to chronic patients both heart disease and breast cancer also have the effect of increasing hope. With increased hope, heart and breast cancer patients will more easily get through difficult times in their treatment.

Bahar & Moordiningsih (2020) research shows an increase in scores before and after providing gratitude training in heart cardiac disease. The increasing of hopes scores before and after the gratitude training was influenced by the ability of participants to rethink the blessings that have been obtained, reflect the gratitude received, manifest gratitude, and re-measure the blessings that have been obtained. This study extends the usefulness of gratitude training not only to cardiac patients but also to other chronic patients such as breast cancer.

Ghazali et al, (2023) in their research also found that gratitude training made individuals with chronic illnesses become calmer in dealing with their condition, decreasing tension condition, became more optimistic and think positively, moreover they became more able to see things from another positive perspective. Supporting this, Megawati et al, (2019) in their research results also found that gratitude training encouraged the growth of positive emotions in participants who took part in the training. This ultimately leads to an increase in hope of life in heart disease patients.

Arnout et al, (2019) showed the effect of gratitude program that breast cancer patients had, higher gratitude score and psychological well-being, compared to patients who did not receive it with significant difference between both groups. Sztachńska (2019) found that breast cancer patients who received treatment in the form of gratitude intervention by writing down the meaning of gratitude had stability in daily functioning. Tomczyk et al (2021) found that gratitude activities promote well-being and reduce depression and anxiety in breast cancer patients. In this research, gratitude training in

breast cancer patients was proven to increase hope for life in breast cancer patients. This proves that the effect of gratitude intervention on breast cancer patients is positive.

Diniz et al (2023) explained that high gratitude indirectly has an impact on reducing negative impacts such as fear, anxiety, and depression. Someone who is able to realize the good things that happen and write down those good things as a form of expressing their gratitude has better physical and mental health (Yu et al., 2017). Bernard et al (2023) stated that grateful activities such as giving thanks and receiving thanks have positive effects on emotions, cognition and relationships. In this study, the expected positive effects also occurred in participants in the experimental group who received gratitude training. In the training session, participants learned to feel the joy of life and express their gratitude in writing so that they were more aware of the meaningfulness of their lives and believed that there were still other positive things they would receive in the future.

The effect of gratitude training on hope for life in each chronic disease group can be seen from the effect size value. In the heart group, the effect size value of gratitude training was 0.79 and in the breast cancer group, the effect size value was 0.785. In both groups, the effect size value was above 0.5. This showed that gratitude training has an effect on increasing hope for life in both chronic disease groups. Researchers suspected that the cause of the high effect size of gratitude training on participants is due to the frequency and variety of intervention type. In this study, the training was divided into two meetings. The first meeting consisted of three sessions and the second meeting consisted of two sessions. This resulted in participants' exposure to gratitude activities being more frequent and more varied.

Research conducted by Geier & Morris (2022) showed a low effect size in gratitude interventions with the single intervention type even though it was carried out more than once. Kloos et al (2022) conducted a study on gratitude activities with more than six intervention modules. The results showed that the effect size was better and stronger. This gratitude training study conducted on chronic patients shows evidence that the effect size will increase if the training modules are more diverse. Wang & Song (2023) conducted a meta-analysis of 19 studies on gratitude interventions. The results of the meta-analysis found that gratitude activities have a positive effect on the mental and physical health of research subjects with a very wide age range (19 to 71 years). This means that during the gratitude intervention, participants were able to show a fairly adequate positive effect on physical and mental development.

In this study, observations made during the study found that participants showed positive expression development during the gratitude training module. This is shown in the module for writing three life pleasures, participants in the heart group were able to interpret simple things experienced as a life pleasure and be grateful for them. The life pleasures they wrote about such as getting good treatment from relatives, playing with children, and having a health check accompanied by their closest family. In the short video screening activity, most participants answered the researcher's questions with positive and optimistic sentences. All participants agreed that accepting, trying, introspecting and surrendering were things that helped in going through difficulties during treatment. In the gratitude session, participants showed expressions of gratitude by writing a thank you letter. In the letter, participants expressed their gratitude to God and their closest relatives who had supported them in recovering from chronic illness.

Observations at the second meeting conducted a week after the first meeting showed that participants were able to express gratitude. This was shown in the butterfly hug session. In this session, participants were asked to hug and thank themselves. In the reassessment session, participants were able to express gratitude by reflecting on experiences and learning from unpleasant

events. Pasha-Zaidi (2021) encourages integrating Islamic approaches and positive psychology in improving well-being. The results of this study can strengthen the push for the integration of Islamic psychology and positive psychology approaches. This is illustrated by the responses of Muslim training participants that they include gratitude to Allah as something that can help to create hope for life in living as chronic patients.

CONCLUSION

The research results showed that gratitude training is effective in improving hope for life. The findings also revealed that participants with heart disease experienced a higher effect of gratitude training than participants with breast cancer. This study strengthens the evidence that gratitude intervention through training medium has a positive effect on participants. In this study, the positive effect produced was an increase in the level of hope for life. This study also strengthens the importance of participants with palliative conditions such as chronic diseases to increase gratitude activities. The gratitude activities carried out will strengthen participants in going through difficult times and strengthen hope for life. This study strengthens the evidence that variations in the type of intervention can increase the effect size value. Further research can sharpen the number of optimal gratitude intervention module variants in the context of participants in Indonesia. This study also has limitations in the selection of non-equivalent research designs. In non-equivalent designs, participant randomization is not carried out. Better sample selection with randomization methods can show more effective results from gratitude training

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