

The relationship between positive thinking and mental health in cancer patients undergoing therapy

Abraham Matthews

Universitas Tarumanegara

Article Info	ABSTRACT
Keywords: Positive thinking, Mental health, Cancer	The daily life one leads can have adverse effects on the mind that may lead to cancer. Poorly managed cancer can spread and attack other organ tissues aggressively, causing damage to the body's organs. This study aims to analyze the relationship between positive thinking and mental health in cancer patients undergoing therapy. The research involved 100 female participants selected through purposive sampling techniques, conducting an online survey on cancer patients undergoing therapy with an age range of 30 to 50 years. Positive thinking involves positive beliefs about oneself and the future, emphasizing interpreting life in a positive and correct way. Mental health is an individual's mental ability to cope with stress, fostering healthy interpersonal relationships in society and making effective decisions. The results of this study indicate a strong relationship between positive thinking and mental health. This suggests that the higher the level of positive thinking experienced by cancer patients undergoing therapy, the higher their level of mental health. Each cancer patient has a need for a long life, aligned with the quality of their mindset and dietary patterns.
This is an open access article under the CC BY-NC license 	Corresponding Author: Abraham Matthews Universitas Tarumanegara abrahamws689@gmail.com

INTRODUCTION

Cancer is one of the leading causes of mortality globally, ranking second with a nominal 9.6 million deaths per year (NTB Provincial Health Office, 2023). Referring to the Ministry of Health of the Republic of Indonesia (2015), it is the leading cause of death, classified as a non-communicable disease, and increases annually. The Global Burden of Cancer Study (Globocan) reported that in 2020, Indonesia had a total of 396,914 cancer cases with 234,511 deaths.

Based on prevalence data, lung cancer tops the list in males with 34,783 cases, followed by colorectal cancer with 34,189 cases. For females, breast cancer (65,858 cases) and cervical cancer (36,633 cases) are the most prevalent. In Indonesia, breast and cervical cancers are the most common. According to Riskesdas 2018, there were 1,017,290 new and existing cancer cases. Indonesia has a cancer incidence rate of 136.2 per 100,000 population, ranking eighth in Southeast Asia and 23rd in Asia.

According to Anung Sugihantono (Ministry of Health), the majority of Indonesians suffer from breast and cervical cancers. As of January 31, 2019, breast cancer's growth rate

was 42.1 per 100,000 population, with an average death rate of 17 per 100,000. Cervical cancer had a growth rate of 23.4 per 100,000 population, with an average death rate of 13.9 per 100,000.

Stated that the malignant growth of epithelial cells lining the breast's ducts or lobes leads to breast cancer (Gupta & Goyal, 2022). The Ministry of Health estimated that in 2015, Central Java and East Java had around 68,638 and 61,230 cancer patients, respectively. Based on Basic Health Research (2018), Jawa Timur, one of Indonesia's provinces, recorded 86,000 cancer cases in 2018.

Jember Regency ranked third in the highest number of deaths due to diseases in East Java, with 105 deaths in 2020, according to the Jember Regional Welfare Agency. Chemotherapy is a common treatment for cancer patients, causing anxiety not only after diagnosis but also during treatment, as stated by Dewi et al., (2021).

Cancer has serious consequences on life, causing physical, psychosocial suffering, and death. The more advanced the stage, the more extreme the endurance. Social issues often arise, such as social disengagement, job disruptions, dependence, loss of control, and decreased efficiency. Treatment may not aim to cure but to reduce or eliminate side effects, including chemotherapy.

Patients undergoing or about to undergo chemotherapy may experience anxiety, fearing failure and premature death in a distressing state (Misgiyanto, 2014). Interaction with therapy in breast cancer patients affects both physical and mental well-being. Chemotherapy, radiotherapy, and other treatments are applied to treat breast cancer patients, with varying success rates depending on the disease stage. Chemotherapy is applied to treat metastasized or localized breast cancer in over half of the patients, causing many physiological and mental side effects (Dewi, 2017).

Risk factors for cancer include genetic factors, exposure to chemicals, lifestyle, habits, infections, and age (Ministry of Health RI, 2023). Referring to the Indonesian Cancer Foundation (2022), environmental factors in Indonesia continue to produce carcinogenic substances such as cigarettes, processed meat, chemicals, radiation, viruses, hormones, and chronic irritants, leading to high cancer rates. According to the Indonesian Ministry of Health, 26 million new cancer cases will be found in 2030, and 17 million of them will result in death.

Referring to Robby's statement (2014), about 330 people in Indonesia suffer from cancer, equating to 1.4 per 1,000 people. This indicates a considerable risk of 330 people getting cancer for every 1,000 inhabitants. Ministry of Health records show that Indonesians are highly susceptible to cancer, with breast cancer being the most common type (Widiyani, 2011).

Breast cancer is a malignant growth that occurs in one of the body's tissues, particularly the breast. Numerous cells grow and develop uncontrollably, leading to this cancerous disease (Utama, 2021). The appearance of lumps or thickening in the breast is the most common symptom of breast cancer. Other symptoms include dimpled skin, deviated nipples, tenderness, and bleeding nipples (Arafah & Notobroto, 2017). Therefore, breast disease must be addressed promptly once common side effects begin to emerge.

Individuals suffering from the disease are twice as likely to experience frustration at home compared to those unaffected by the adverse effects of malignant growth and low financial status. This is attributed to the burdens faced by chronic disease patients, such as high treatment costs, inadequate health insurance, and a lack of understanding of their condition. The quality of life of cancer patients is influenced by these factors. Individual competence in performing daily activities, as well as physical, social, and emotional health, is referred to as quality of life (Cummins in Imanda, 2016).

Referring to Noll (2012), quality of life is defined as the relationship between two subjective or human-based factors and a series of objective conditions. This indicates that an individual's high quality of life also impacts their health. The term "health-related quality of life" (HRQoL) is often applied to describe the quality of life of individuals suffering from acute or chronic diseases. Research by Nurhikmah et al. (2018) showed that the majority of breast cancer patients in Semarang had poor quality of life.

Despitasari, Sastra, Alisa, and Astro (2020) also found similar results in breast cancer patients in Padang. Meanwhile, research conducted in Jambi showed that the majority of breast cancer patients enjoyed a high quality of life (Nomiko, 2020). Previous research findings lead to the conclusion that the standard of living in various regions of Indonesia may vary.

Mental states such as feelings of weakness, sadness, mental pressure, anger, and distress can hinder individuals from achieving joy and discard inspiration and purpose in life. This indicates whether patients have understood the importance of their disease and comprehend what individuals need to do in their current situation. When sidelined, one can still think clearly. Focusing on the positive aspects of recent events or circumstances will help individuals manage dangerous or annoying conditions, allowing them to take decisive action in all situations.

Positive thinkers are not swayed by the judgments of others but consider things deeply before making judgments. Thus, positive thinking will give rise to happiness, joy, health, and success in every situation and action (Andrea, 2011). Positive thinkers are not easily discouraged when facing challenges and may apply it as a form of psychological defense to avoid many things that happen in daily life. Thus, positive thinkers enable individuals to easily cope with the mental pressures they face.

Thatcher's research (2014) visualized that positive thinking can become a healthy habit after three weeks, resulting in daily happiness and physical fitness. Referring to Keshavarz and Vafaeian (Panahi Mozghan, 2016), there is a correlation between certain reasoning and substantial well-being, social and family relationships, positive thoughts for the future, and joy. In addition, positive thinking skills have a significant impact on mental health, according to research by Moaser & Panahi (2016).

To achieve mental health in life, positive thinking helps generate positive effects and satisfaction. Therefore, individuals must fully utilize the power of thought. Referring to Dian (2016), by absorbing positive thoughts in large quantities, individuals can maintain emotional stability and feelings. Thus, positive thinking is crucial for breast cancer patients to maintain mental health even in illness.

Based on the preliminary study findings sourced from Lydia (2022), where the research results indicate a relationship between positive thinking and mental health in students in Yogyakarta, with consistently high positive thinking resulting in consistently high mental health. The positive thinking possessed by students influences their mental health, meaning that the higher the positive thinking, the higher the positive mental health in students. Conversely, the lower the positive thinking, the lower the positive mental health in students.

Psychological well-being also revolves around human relationships with others and focuses on individuals living around them, where concentration can impact those facing psychological health problems (Harahsheh, 2016). Notosoedirdjo and Latipun in Mafud (2014) state that psychological health is an essence influenced by several elements, both internal and external. Biology and psychology are influenced by internal factors, while socio-cultural factors are influenced by external factors.

One of the factors that affects mental health is internal factors, especially biological factors. Conversely, psychological factors are components of the human soul that, when combined with the biological system, function as a unity. The psychological aspect of human existence is always involved in the multi-aspect dynamics of humanity because it is a subsystem of human existence. Therefore, the psychological aspect is closely related to the influence on mental health, particularly the strong spirituality on an individual's soul. In this context, adherence to worship or religious practices is closely associated with mental health.

Muhyani (2012) asserts that external factors are equally crucial in impacting an individual's emotional well-being, including social factors, social communication, climate within family, school, and the surrounding environment, considering the climate of the place where they reside. Positive thinking has been found to have an impact on mental health, as evidenced by research findings (Hasan & Mudis, 2022). Among these elements, experts highlight positive reasoning as a component that influences emotional health.

Individuals experience poor mental health if they undergo emotional disturbances such as depression and anxiety, leading to unpleasant feelings (Vaingankar et al., in Seow et al., 2016). Referring to Keyes, Shmotkin, and Ryff (Schonfeld, Brailovskaia, & Margraf, 2017), one characteristic of mental health is the competence to discover and actualize one's potential.

This is further reinforced by empowering communities to appreciate and feel achievements, satisfaction, and ultimately achieve excellence (Hartanti, 2017). Referring to Hidayat (2019), individuals are better equipped to face daily life challenges wisely and enjoyably if they have a solid understanding of the purpose of their existence. Referring to Smith, E., cited by (Harry Croft., 2018), positive reasoning has the competence to modify the competence of the large brain and its actual form and design.

From a neurological perspective, the brain requires the same neurons and sensory pathways to imagine and perform an action. As a result, practicing one will have a tangible impact on the other. This implies that an individual's perspective is closely related to other

aspects of life, such as individual competence, actual well-being, and psychological well-being.

Based on the described phenomena, the research problem in this study is "Is there a relationship between positive thinking and mental health in cancer patients undergoing chemotherapy?" The research aims to determine the relationship between positive thinking and mental health in cancer patients undergoing chemotherapy.

This research can be theoretically beneficial for clinical psychology. The theoretical contribution that can be obtained is the correlation between positive thinking and mental health in patients suffering from cancer undergoing therapy. The author hopes that this research can contribute useful theories to the literature in the field of medical education, adult developmental psychology, and clinical psychology, supported by scientific and reliable data.

This theoretical contribution can also be used as a basis for future research. The benefit of this research is that the results can be applied to add information to the field of psychology, particularly regarding the relationship between positive thinking and mental health in cancer patients undergoing chemotherapy.

This research can help patients recognize factors that impact positive thinking so that they are prepared to face their mental health conditions. For hospital institutions, it is hoped that the findings can be useful and contribute to building optimal nursing care activities to enhance healthcare services for patients in the chemotherapy unit of the hospital. Additionally, hospital institutions can organize activities to increase awareness and knowledge for patients, such as educational seminars and providing pamphlets or brochures about chemotherapy in the chemotherapy unit.

METHOD

Research Design

The question regarding the relationship between positive thinking and mental health is the subject of this research. This quantitative study applies nonprobability sampling techniques to collect data, specifically utilizing purposive sampling through an online questionnaire. The selected sample in this research does not have equal chances with other members of the population. This correlational study aims to explore how the two variables are related to each other.

Setting and Research Instruments

This study was conducted in DKI Jakarta, and data were collected online during the COVID-19 pandemic. Before conducting the online survey, the research utilized tools such as informed consent and a questionnaire created using Google Forms, as well as applications for data processing such as Microsoft Excel and SPSS.

Research Instruments

This research employs a questionnaire consisting of several parts, including (a) introduction, explaining the researcher's identity, purpose, and research requirements; appreciation to participants; voluntary participation; time needed to complete the questionnaire; impact of filling out the questionnaire; participant data confidentiality

assurance; consistent refusal possibilities; and correspondence contact; (b) Information collected from respondents (patients undergoing chemotherapy), including age, gender, duration of therapy, education level, and weekly therapy duration; (c) filling instructions: instructions on how to answer questions and the time allocated to answer questions; (d) positive thinking questionnaire; (e) mental health questionnaire.

1. Subjective Happiness Scale (SHS)

The Subjective Happiness Scale (SHS) consists of 4 items. Respondents rate their agreement or disagreement with each statement. The total sum of these values indicates the individual's level of subjective happiness. This scale is based on the theory of happiness aspects and adjusted from the Subjective Happiness Scale created by Sonja Lyumbormirsky and Heather A. Sheldon. While not explicitly measuring positive thinking, subjective happiness is often associated with a positive outlook on life and experiences. The SHS focuses more on the subjective assessment of happiness rather than specific aspects of positive thinking. The scale applied in this study is a Likert scale, measuring mentalities, feelings, and impressions with five possible answer choices: Very Suitable (VS), Suitable (S), Less Suitable (LS), Not Suitable (NS), and Not Suitable at All (NSA).

Table 1. Alternative Scores for the Happiness Level Scale

Alternative Answers	Score	
	Favorabel	Unfavorable
Very suitable	5	1
In accordance	4	2
Not Appropriate	3	3
It is not in accordance with	2	4
Very Inappropriate	1	5

In the validity test for the Happiness Level scale, all instrument statements were declared valid with a calculated r-value greater than the table value ($r > 0.194$) at a significance level ($\alpha = 0.05$). The following is a detailed validity test for the Happiness Level instrument statements.

Table 2 Validity Test for the Happiness Level Scale

No.	rCalculate	rTable	Description
1	0.774	0.194	Valid
2	0.626	0.194	Valid
3	0.720	0.194	Valid
4	0.708	0.194	Valid

In the reliability test for the Happiness Level scale, all instrument statements were declared reliable with a Cronbach's Alpha value of 0.664, exceeding the threshold of 0.600. The following is a detailed reliability test for the Happiness Level instrument statements.

Table 3 Reliability Test for the Happiness Level Scale

Reliability Statistics	
Cronbach's Alpha	N of Items
.664	4

2. Connor Davidson Resilience Scale (CD-RISC)

The Connor-Davidson Resilience Scale (CD-RISC) is a scale developed by Connor and Davidson to measure individual resilience. This scale consists of 25 statements, each with a Likert scale ranging from 0 to 4. The score range is from 0 to 100. The CD-RISC is designed to measure an individual's level of resilience or tenacity in facing life's stress and pressure. Respondents are asked to assess their agreement or disagreement with statements related to aspects of resilience, adaptation, and positive coping. The CD-RISC answers help identify the extent to which an individual has internal resources to cope with challenges and trauma. Higher scores on the CD-RISC indicate higher levels of resilience. The constructs created by David and Connor (2003) measure aspects such as: 1) personal competence, perseverance, and high standards; 2) confidence in intuition, ability to handle stress, and strength in facing pressure; 3) positive recognition of progress and good interaction with others; 4) calmness (wisdom); and 5) impact on the world and faith in God.

In the validity test for the Resilience Level scale, all instrument statements were declared valid with a calculated r-value greater than the table value ($r > 0.194$) at a significance level ($\alpha = 0.05$). The following is a detailed validity test for the Resilience Level instrument statements.

Table 4. Validity Test for the Resilience Level Scale

No.	rCalculate	rTable	Description
1	0.799	0.194	Valid
2	0.801	0.194	Valid
3	0.776	0.194	Valid
4	0.842	0.194	Valid
5	0.790	0.194	Valid
6	0.837	0.194	Valid
7	0.819	0.194	Valid
8	0.814	0.194	Valid
9	0.804	0.194	Valid
10	0.825	0.194	Valid
11	0.837	0.194	Valid
12	0.803	0.194	Valid
13	0.823	0.194	Valid
14	0.808	0.194	Valid
15	0.760	0.194	Valid
16	0.830	0.194	Valid

No.	rCalculate	rTable	Description
17	0.793	0.194	Valid
18	0.778	0.194	Valid
19	0.767	0.194	Valid
20	0.787	0.194	Valid
21	0.777	0.194	Valid
22	0.798	0.194	Valid
23	0.733	0.194	Valid
24	0.802	0.194	Valid
25	0.759	0.194	Valid

In the reliability test for the Resilience Level scale, all instrument statements were declared reliable with a Cronbach's Alpha value of 0.976, exceeding the threshold of 0.600. The following is a detailed reliability test for the Resilience Level instrument statements.

Table 5. Reliability Test for the Resilience Level Scale

Reliability Statistics	
Cronbach's Alpha	N of Items
.976	4

Research Procedure

In preparing for the research, the researcher first sought current phenomena. Then, selected an interesting and important phenomenon for research. After determining the research topic, the researcher began searching for journals related to the phenomenon to support this research. Next, the researcher began creating a framework and background. The researcher disseminated the questionnaire to individuals known to the researcher and meeting the criteria.

RESULTS AND DISCUSSION

Description of Mental Health and Positive Thinking Variables

This study employs the Subjective Happiness Scale (SHS) created by Sonja Lyumbormirsky and Heather A. Sheldon to measure positive thinking, while the Conor-Davidson Resilience Scale (CD-RISC) is used to measure mental health in terms of resilience. For the Mental Health variable, the minimum (min) value obtained is 30, the maximum (max) value is 125, the mean value is 74.09, and the standard deviation value is 20.140. For the Positive Thinking variable, the descriptive values are a minimum (min) of 6, a maximum (max) of 26, a mean of 17.32, and a standard deviation of 4.643. In summary, here is the description of the descriptive test results between variables in tabular form:

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
Mental health	100	30	125	74.09	20.140
Think positively	100	6	26	17.32	4.643
Valid N (listwise)	100				

Before testing hypotheses, the respondents' data undergo classical assumption tests. The test of normality suspicion is an essential test conducted before further investigating the collected information. The old model presumption test aims to ensure that the obtained relapse conditions are accurate, unbiased, and stable. In this review, Psychological Health and Positive Reasoning factors utilize the fairness test to examine assumptions about the old style. The statistical technique called the normality test is applied to determine whether a data set or data distribution is normally distributed.

1. Normality Test for Mental Health and Positive Thinking Variables

Data are considered to meet normality assumptions if the Sig. value > 0.05 ; otherwise, if Sig. < 0.05 , the data is considered not normally distributed. The normality test is analyzed through the Kolmogorov-Smirnov test. The results of the normality test are as follows:

Mental Health obtained a Sig. value (0.200) > 0.05 , indicating that the data distribution for the Mental Health variable is considered normal. Positive Thinking obtained a Sig. value (0.053) > 0.05 , indicating that the data distribution for the Positive Thinking variable is considered normal.

2. Hypothesis Analysis

This study applies correlation tests to prove the research hypotheses. There are two types of correlation tests: Pearson correlation and Spearman correlation. Pearson correlation is applied when data is normally distributed, while Spearman correlation is applied when data is not normally distributed. Since the normality test previously obtained that both data variables are normally distributed, this study applies Pearson correlation. Positive Thinking is significantly related to Mental Health if the Sig. value < 0.05 ; conversely, if the Sig. value > 0.05 , Positive Thinking is not significantly related to Mental Health. The results of the Pearson correlation analysis are as follows:

Correlations			
		Berpikir Positif	Kesehatan Mental
Berpikir Positif	Pearson Correlation	1	,748**
	Sig. (2-tailed)		,000
	N	100	100
Kesehatan Mental	Pearson Correlation	,748**	1
	Sig. (2-tailed)	,000	
	N	100	100

** . Correlation is significant at the 0.01 level (2-tailed).

A Sig. value of (0.000) < 0.05 is obtained, indicating that Positive Thinking is significantly related to mental health. Additionally, a correlation coefficient of 0.748 is

obtained, and this correlation coefficient falls into the category of a strong positive relationship. This means that if an individual can think positively, their mental health will improve, and conversely, if an individual cannot think positively, their mental health will deteriorate.

3. Additional Data Analysis

a. Descriptive Statistics Test Based on Respondents' Age

Descriptive Statistics						
	N	Minimum	Maximum	Mean	Std. Deviation	Variance
Umur	100	30	50	40,13	5,874	34,498
Valid N (listwise)	100					

Descriptive statistics for age are presented in terms of measures of central tendency and data dispersion. The average age of the respondents is 40.13 years, with the youngest respondent being 30 years old and the oldest being 50 years old. Additionally, the standard deviation of age is 5.874, and the variance is 34.498.

b. Descriptive Statistics Test Based on Respondents' Highest Education

Pendidikan Terakhir					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	SMA	27	27,0	27,0	27,0
	Diploma	28	28,0	28,0	55,0
	S1	37	37,0	37,0	92,0
	S2	8	8,0	8,0	100,0
	Total	100	100,0	100,0	

Descriptive statistics for the respondents' highest education are presented in a frequency distribution table. Respondents with a high school education amount to 27, respondents with a diploma education amount to 28, respondents with a bachelor's degree (S1) amount to 37, and respondents with a master's degree (S2) amount to 8.

c. Descriptive Statistics Test Based on the Duration of Therapy for Respondents

Lama Menjalani Terapi					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	<1 Tahun	37	37,0	37,0	37,0
	>1/2 Tahun	32	32,0	32,0	69,0
	>3/5 Tahun	31	31,0	31,0	100,0
	Total	100	100,0	100,0	

Descriptive statistics for the duration of therapy are presented in a frequency distribution table. It is found that 37 respondents have undergone therapy for less than 1 year, 32 respondents have undergone therapy for less than 1/2 year, and 31 respondents have undergone therapy for more than 3/5 years.

d. Descriptive Statistics Test Based on the Duration of Therapy Per Week for Respondents

Durasi Terapi Dalam Satu Minggu					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1-3 Jam	30	30,0	30,0	30,0
	3-5 Jam	35	35,0	35,0	65,0
	>5 Jam	35	35,0	35,0	100,0
	Total	100	100,0	100,0	

Descriptive statistics for the duration of therapy per week for respondents are presented in a frequency distribution table. It is found that 30 respondents undergo therapy for 1-3 hours per week, 35 respondents undergo therapy for 3-5 hours per week, and 35 respondents undergo therapy for more than 5 hours per week.

e. Descriptive Statistics Test Based on Respondents' Gender

Descriptive statistics for respondents' gender are presented in a frequency distribution table. It can be observed that out of 100 respondents, all are dominated by females.

Gender					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Perempuan	100	100.0	100.0	100.0

This research provides results showing a highly significant positive relationship between Positive Thinking and Mental Health in cancer patients undergoing chemotherapy. Lestari et al. (2020) stated in their research that there are 9 essential things that chemotherapy patients must possess to survive. Psychological aspects of patients are one of the crucial elements because chemotherapy patients undergo a painful and time-consuming therapy process. Often, cancer-diagnosed patients feel hopeless due to the chemotherapy process (Setiawan, 2015). Therefore, mental health is a crucial aspect of the quality of life for chemotherapy patients. Good mental health can increase hope, motivation, and self-confidence in chemotherapy patients to recover from their illness (Hasan & Mud'is, 2022). Conversely, poor mental health can decrease cognitive, emotional, and social functions in chemotherapy patients, increasing the risk of death.

These findings can validate previous research indicating that positive thinking can help cancer patients undergoing chemotherapy reduce stress, anxiety, and depression commonly experienced due to the disease and intensive treatment. Positive thinking can

also help cancer patients accept their conditions, face challenges optimistically, and seek deeper meaning in life. Previous studies have also stated the same, emphasizing that positive thinking can boost confidence, hope, and motivation for cancer patients to recover (Khasanah, 2021). This suggests that positive thinking is closely linked to improved mental health in cancer patients.

The research also shows that positive thinking can enhance adaptive coping in cancer patients undergoing chemotherapy, demonstrating competence in dealing with problems in an effective and healthy manner. Previous research by Irma (2018) also indicated that positive thinking helps cancer patients choose coping strategies suitable for the situation, such as seeking information, seeking social support, or engaging in positive activities.

Clinically, Kirana (2016) suggests that positive thinking can affect the immune system and physiological responses in cancer patients undergoing chemotherapy, impacting their physical and mental health. Positive thinking can lower stress hormone levels, such as cortisol, which can damage body cells and worsen diseases. Positive thinking can also increase the levels of happiness hormones, such as endorphins, promoting comfort and reducing pain.

The clinical implications of this research emphasize the importance of integrating positive thinking aspects into the care of cancer patients. Psychological intervention programs that help patients develop positive thinking patterns can be considered a significant step in improving their mental health during the treatment journey. Cognitive psychotherapy, positive coping training, or even mindfulness-based program development can be effective approaches. The healthcare team caring for patients, including psychologists and counselors, can play a significant role in providing support and guidance (Kirana, 2016).

The results of this research also strengthen the relationship between positive thinking and mental health, indicating that the higher the level of positive thinking in chemotherapy patients, the more it will increase happiness for these patients. The highly significant relationship between Positive Thinking and Mental Health in cancer patients undergoing chemotherapy means that the influence of Positive Thinking on Mental Health does not happen by chance but due to a strong cause-and-effect relationship between these two variables. This is demonstrated by statistical values indicating a high correlation and significance between Positive Thinking and Mental Health (Irma, 2018). High correlation and significance values indicate a close relationship between Positive Thinking and Mental Health, while low significance values indicate that the likelihood of this relationship occurring due to other unexplored factors is very small.

This research also provides a discussion of the relationship mechanism, which may include a deeper understanding of how positive thinking can influence the mental health of patients. Factors such as increased optimism, improved adaptive coping, and decreased stress levels may act as mediation mechanisms in this relationship. Further research can explore these mediation variables to provide deeper insights into how interventions can modify these variables and, consequently, improve mental health. Additionally, consideration of the influence of the environment and social support can also shape the

practical usefulness of related research. How the social environment and support from family, friends, or support groups can strengthen the positive effects of thinking positively can be an essential element in efforts to enhance the mental health of patients (Kirana, 2016). Therefore, treatment strategies involving families and creating a positive environment should be taken into account.

CONCLUSION

Based on the research results, it can be concluded that there is a highly significant positive correlation between the Positive Thinking and Mental Health variables, with a significance value of $\text{Sig. (0.000)} < 0.05$ and a correlation coefficient of 0.748, indicating a strong positive correlation. This suggests that respondents, who are cancer patients undergoing chemotherapy, are capable of positive thinking, leading to an improvement in their mental health. Conversely, if individuals cannot think positively, their mental health will deteriorate.

REFERENCES

- [1] Hasan, M., & Mud'is, H. (2022). PENGARUH PIKIRAN POSITIF TERHADAP KESEHATAN MENTAL: SUATU ANALISIS KONSEPTUAL. FASTABIQ: JURNAL STUDI ISLAM, 3(1), 40-55.
- [2] Irma, R. A. (2018). HUBUNGAN BERPIKIR POSITIF DENGAN KEBAHAGIAAN PENDERITA KANKER PAYUDARA. Jurnal Psikologi, 14(2). 113-119.
- [3] KHASANAH, R. N. (2021). ANALISIS ASUHAN KEPERAWATAN PADA PASIEN KANKER SERVIKS DENGAN MASALAH KEPERAWATAN UTAMA KETIDAKBERDAYAAN: BERFIKIR POSITIF DENGAN METODE TAPPING DI RSUD PROF. DR. MARGONO SOEKARJO PURWOKERTO. Thesis: UNIVERSITAS MUHAMMADIYAH GOMBONG).
- [4] Kirana, L. A. (2016). Dukungan sosial dan resiliensi pada pasien kanker payudara (studi kasus pada pasien kanker payudara yang sedang menjalani kemoterapi). Psikoborneo: Jurnal Ilmiah Psikologi, 4(4). 522-529
- [5] Lestari, A., Budiarti, Y., & Ilmi, B. (2020). Study fenomenologi: psikologis pasien kanker yang menjalani kemoterapi. Jurnal Keperawatan Suaka Insan (Jksi), 5(1), 52-66.
- [6] Setiawan, S. D. (2015). The effect of chemotherapy in cancer patient to anxiety. Jurnal Majority, 4(4).
- [7] Connor, K. M., & Davidson, J. R. (2003). Development of a new resilience scale: The Connor-Davidson resilience scale (CD-RISC). Depression and anxiety, 18(2), 76-82.
- [8] Notoatmodjo, S. (2010). Metode Penelitian Kesehatan. PT Rineka Cipta. Jakarta
- [9] Noviana, N., (2016). Konsep HIV/AIDS seksual & Kesehatan Reproduksi. Trans Info Media. Jakarta.
- [10] Sunaryati, S.S. (2011). 14 Penyakit Paling Sering Menyerang dan Mematikan. Jogjakarta: Flash Books.

- [11] Akmal, Mutaroh, dkk., 2010. Ensiklopedi Kesehatan untuk Umum,. Jogjakarta: Ar-Ruzz Media
- [12] Ariani, T. A. (2017). THE POTENTIAL OF PSYCHOSOCIAL HEALTH INDICATORS THAT EFFECTS TO CHRONIC RENAL FAILURE (CRF) PATIENT WITH COGNITIVE BEHAVIOR THERAPY (CBT) BASED. *Jurnal Kesehatan Hesti Wira Sakti*, 5(1), 62-69.
- [13] American Cancer Society. American Cancer Society Lung Cancer Guidance Workgroup. Interim guidance on lung cancer screening. Atlanta, GA: American Cancer Society; 2011. cancer.org/Healthy/FindCancerEarly/index. Accessed September 24, 2016.
- [14] Brunner, L. S. (2016). Brunner & Suddarth's textbook of medical-surgical nursing (Vol. 1). Lippincott Williams & Wilkins.
- [15] Aridhona, J. J. (2017). Hubungan Perilaku Prososial Dan Religiusitas Dengan Moral Pada Remaja. *Jurnal Psikologi Perseptual*, 2(1), 9-18.
- [16] Haryanto, R., & Septimar, Z. M. (2020). Faktor-faktor yang mempengaruhi tingkat kecemasan perawat Covid-19 selama pandemi di Indonesia. *The Indonesian Journal of Infectious Disease* Volume, 6(1), 10.
- [17] Davies, C., & Pescud, M. (2020). The Arts and Creative Industries in Health Promotion: an Evidence Check Rapid Review brokered by the Sax Institute for The Victorian Health Promotion Foundation.
- [18] Gruebner, O., Rapp, M. A., Adli, M., Kluge, U., Galea, S., & Heinz, A. (2017). Cities and mental health. *Deutsches Ärzteblatt International*, 114(8), 121.
- [19] Lee, M. H., Yang, K. H., Lee, C. S., Lee, H. S., Moon, S. Y., Hwang, S. I., & Song, J. H. (2011). The effect-site concentration of propofol producing respiratory depression during spinal anesthesia. *Korean journal of anesthesiology*, 61(2), 122-126.
- [20] Muslim, M. (2020). Manajemen stress pada masa pandemi covid-19. *ESENSI: Jurnal Manajemen Bisnis*, 23(2), 192-201.
- [21] Yuliansyah, W. (2017) Kesehatan Masyarakat Kesehatan Mental. Diedit oleh D. Rahmawati. Surakarta: Penerbit Borobudur Inspira Nusantara.
- [22] Sinthania, D. et al. (2022) Kesehatan Mental (Teori dan Penerapan). Diedit oleh
- [23] Munandar. Kota Bandung.
- [24] Notosoedirjo, Moeljono, & Latipun. (2019). Kesehatan Mental: Konsep dan Penerapan. UMM Press.
- [25] Winurini, S. (2020). Permasalahan Kesehatan Mental Akibat Pandemi Covid-19. *Bidang Kesehatan Sosial Info Slnkat Kajian Singkat Terhadap Isu Aktual dan Strategis*. Vol XII. No. 12
- [26] Ilsanty, D. 2018. Memahami problematika kesehatan mental remaja dan dewasa muda. *Journal of school psychology* 33(2) 185-199
- [27] Kartono, K. 2000. Hygiene Mental. Jakarta : CV. Mandar Maju.
- [28] Fakhriyani, D. V. (2019). Kesehatan mental. Pamekasan: duta media publishing.
- [29] Veit, C., & Ware, J. (2009). The structure of psychological distress and wellbeing in general populations. *Journal of Consulting and Clinical Psychology*, 51, 730-742.

- [30] Jalaluddin, N. I., Bakeri, N. S. M., Nasir, K. M., Rani, N. M., & Kamaruzaman, M. F. (2016). Managing Stress Among Adolescents by Using Digital Visual Schedule. In *Proceedings of the 2nd International Colloquium of Art and Design Education Research (i-CADER 2015)* (pp. 241-250). Springer Singapore
- [31] Putri, B. D. (2015). Peran Faktor Keluarga Dan Karakteristik Remaja Terhadap Perilaku
- [32] Seksual Pranikah. *Jurnal Biometrika Dan Kependudukan*, 3(1), 8–19.
- [33] Ridlo, I. A. (2020). *Jurnal Psikologi dan Kesehatan Mental*.
- [34] Ayuningtyas, D., & Rayhani, M. (2018). Analisis situasi kesehatan mental
- [35] pada masyarakat di Indonesia dan strategi penanggulangannya. *Jurnal Ilmu Kesehatan Masyarakat*, 9(1), 1-10.
- [36] Sugiyono. (2011). *Metode Penelitian Pendidikan Pendekatan Kuantitatif, Kualitatif, dan R&D*. Bandung: Alfabeta
- [37] Yusuf, S. (2018). *Kesehatan Mental Dalam Perspektif Psikologis dan Agama*. Bandung: PT Remaja Rosdakarya Bandung.
- [38] Ubaedy, A. N., & Bani, A. S. (2007). *Berpikir positif: agar anda tetap pede menghadapi hidup*. Bee Media Indonesia
- [39] Albrecht, G. (2005). 'Solastalgia'. A new concept in health and identity. *PAN: philosophy activism nature*, (3), 41-55
- [40] Nurmayasari, K., & Murusdi, H. (2015). Hubungan antara berpikir positif dan perilaku menyontek pada siswa kelas X SMK Koperasi Yogyakarta (Doctoral dissertation, Universitas Ahmad Dahlan).
- [41] Fandokht, O. M., Sa'dipour, I., & Ghawam, S. I. (2014). The study of the effectiveness of positive thinking skills on reduction of students' academic burnout in first grade high school male students. *Indian Journal of Science Research*, 4(6), 228-236.
- [42] Shyh Shin Wong. (2012). Negative Thinking Versus Positive Thinking in A Singaporean Student Sample: Relationships with Psychological Well-Being and Psychological Maladjustment. *Learning and Individual Differences*, Volume 22, Issue 1, 76–82.
- [43] Kholidah, E. N., & Alsa, A. (2012). Berpikir positif untuk menurunkan stres psikologis. *Jurnal psikologi*, 39(1), 67-75.
- [44] Canfield, P. J., Whitehead, M. L., Johnson, R., O'Brien, C. R., & Malik, R. (2016). Case-based clinical reasoning in feline medicine: 1: Intuitive and analytical systems. *Journal of feline medicine and surgery*, 18(1), 35-45
- [45] Hidayat, R., & Abdillah, A. (2019). *Ilmu Pendidikan: Konsep, Teori Dan Aplikasinya*.
- [46] Schönfeld, P., Brailovskaia, J., & Margraf, J. (2017). Positive and negative mental health across the lifespan: A cross-cultural comparison. *International Journal of Clinical and Health Psychology*, 17(3), 197-206.
- [47] Seow, L. S. E., Vaingankar, J. A., Abidin, E., Sambasivam, R., Jeyagurunathan, A., Pang, S., ... & Subramaniam, M. (2016). Positive mental health in outpatients with affective

- disorders: Associations with life satisfaction and general functioning. *Journal of affective disorders*, 190, 499-507.
- [49] Muhyani. (2012). *Kesadaran Religius dan Kesehatan Mental*. Jakarta Pusat: Kementrian Agama Republika Indonesia.
- [50] Peterina, L. (2022). *HUBUNGAN ANTARA BERPIKIR POSITIF DENGAN KESEHATAN MENTAL POSITIF PADA MAHASISWA DI YOGYAKARTA* (Doctoral dissertation, Universitas Mercu Buana Yogyakarta)
- [51] Thatcher, S. (2014). Making a Habit of Happiness: A Three Week Lived Experience of Positive Thinking. *Mission of the Journal of Excellence*, 16, 37.
- [52] Ivey, A. E., D'Andrea, M. J., & Ivey, M. B. (2011). *Theories of counseling and psychotherapy: A multicultural perspective: a multicultural perspective* (No. 1). Sage.
- [53] Irawan, E. D. (2017). *Hubungan Antara Usia Menarche dan Riwayat Keluarga dengan Kejadian Kanker Payudara Pada Wanita Usia 35-60 Tahun Di Ruang Kemoterapi RSUD Panembahan Senopati Bantul Yogyakarta* (Doctoral dissertation, UNIVERSITAS ALMA ATA).
- [54] Pratiwi, S. R., Widiati, E., & Solehati, T. (2017). Gambaran faktor-faktor yang berhubungan dengan kecemasan pasien kanker payudara dalam menjalani kemoterapi. *Jurnal Pendidikan Keperawatan Indonesia*, 3(2), 167-174.
- [55] Dewi, R. (2017). *Hubungan Dukungan Keluarga Dan Strategi Koping Dengan Ansietas Pada Pasien Kanker Yang Sedang Menjalani Pengobatan Kemoterapi* (Doctoral dissertation).
- [56] Utama, Y. A. (2021). Analisis kualitas hidup pasien kanker payudara. *Jurnal'Aisyiah Medika*, 6(1).
- [57] Arafah, A. B. R., & Notobroto, H. B. (2017). Faktor yang berhubungan dengan perilaku ibu rumah tangga melakukan pemeriksaan payudara sendiri (SADARI). *The Indonesian Journal of Public Health*, 12(2), 143-153.
- [58] Imanda, R. N. (2016). Strategi Peningkatan Quality of Urban Life (QoUL) dengan Pertimbangan Tingkat Kepuasan Masyarakat terhadap Kota Tempat Tinggal. *Temu Ilmiah Iplbi*, 193–200.
- [59] Noll, H. H. (2018). Social monitoring and reporting: A success story in applied research on social indicators and quality of life. *Social Indicators Research*, 135(3), 951-964.
- [60] Nomiko, D., Eliezer, B., & Sinaga, W. (2023). Edukasi Sadari Sebagai Upaya Peningkatan Pengetahuan dan Keterampilan Dalam Deteksi Dini Kanker Payudara. *Jurnal Pengabdian Meambo*, 2(1), 39-47.