



Exploring Psychological Condition of Breast Cancer Survivor After Mastectomy and Chemotherapy

Yesiana Dwi Wahyu Werdani^{1✉}, Arief Widya Prasetya²

¹Universitas Katolik Widya Mandala Surabaya, Indonesia

²STIKES Katolik St. Vincentius a Paulo Surabaya, Indonesia

✉ ywerdani@yahoo.com, Tlp: +6285857967430

Received: 24 May 2020 /Accepted: 30 Nopember 2020/Published Online: 28 February 2021

© This Journal is an open-access under the CC-BY-SA License

Abstract

Breast cancer becomes a frightening disease for women, it is not only physically painful but also causes psychological disorders. This study aimed to explore the psychological condition of breast cancer survivors after mastectomy and chemotherapy. This was a qualitative study with thematic analysis methods. Samples were 20 breast cancer survivors taken by purposive sampling technique based on inclusion criteria from three community health centers in Surabaya Indonesia. Ethical requirements are completed before data collection. Data collection using an in-depth interview technique and recorded by a voice recorder. Content analysis is used to process the data. This study found 2 main themes hopelessness and negative psychological well-being. On the first main theme, there was 4 sub-theme consist of worthlessness, purposeless in life, pessimistic, unhappy. While on the second main theme there were 6 sub-theme consist of worried, negative thought, irritable, negative relationship with others, denial, felt guilty. Breast cancer survivors after mastectomy and chemotherapy experience a variety of sufferings on the psychological condition and could not be able to see other good things in their life.

Keywords: Psychological Condition; Breast Cancer; Mastectomy; Chemotherapy

INTRODUCTION

Women perceive breast cancer as a serious and frightening disease compared to other terminal diseases (Berry et al., 2016). A qualitative analysis states that a woman feels concerned and anxious because her destiny as a woman is unable to escape the risk of suffering from breast cancer (Rainey et al., 2019). Women's concerns about breast cancer arise because women who have had breast cancer also have a higher risk in the future to experience a recurrence (Bosco et al., 2009). Many things that cause concern for breast cancer survivors include the problem of fatigue, fertility, and sexual dysfunction (Dizon, 2009). A qualitative study states that women who suffer from breast cancer experience sexual function disorders such as decreased libido and vaginal dryness which causes patients to have no more hope in their

sexual lives (Chang et al., 2019). The diagnosis of cancer often results in psychological distress. This was as revealed by a study that breast cancer patients experience a depressed mood with a moderate level of resilience and also feel a high level of anxiety (Fradelos et al., 2017).

The percentage of cancer deaths in Asia reached 57.3% and in Africa 7.3% higher than the incidence of cancer (48.4% and 5.8% respectively). GLOBOCAN 2018 estimates that there will be around 18.1 million new cancer cases (17.0 million excluding non-melanoma skin cancer) and 9.6 million cancer deaths (9.5 million excluding non-melanoma skin cancer) in 20 regions of the world. Breast cancer is the most commonly diagnosed cancer and the main cause of death from cancer (11.6%). Women diagnosed with cancer as a new case occurred in 154 countries in the

world. In South-Eastern Asia the incidence of breast cancer reached 38.1% and deaths due to breast cancer reached 14.1%, this is higher than South Central Asia with the incidence of breast cancer and deaths by 25.9% and 13.6% (Bray et al., 2018).

A study states that breast cancer patients undergoing mastectomy and lumpectomy, the majority experience moderate and severe depression, and decrease hope scores (Bener et al., 2017). Mastectomy is one of the recommended measures for breast cancer patients to improve the prognosis of the disease. This is following a study that states breast cancer patients undergoing immediate breast reconstruction (IBR) experience a low risk of recurrence so that it has a positive impact on the improvement of prognosis (Yang et al., 2015). However, mastectomy greatly affects the psychological condition of patients, this is as stated by a study of 122 breast cancer patients undergoing radical mastectomy, the majority of them experiencing psychological distress such as anxiety, depression and even full of emotional stress throughout their lives (Berhili et al., 2019). The emergence of psychological distress in breast cancer patients because the patient feels lost her femininity attributes (Kocan & Gursoy, 2016). Chemotherapy is an additional measure recommended for post-breast cancer patients to reduce the risk of recurrence and spread of cancer cells. However, the long-term effects arising from chemotherapy cause patients to experience functional disorders such as fatigue, pain, decreased concentration, peripheral neuropathy depression, which makes the patient easily discouraged and causes mood to become depressed (Haidinger & Bauerfeind, 2019). The depression felt by breast cancer patients causes psychological crisis and the majority of them have no hope of the future (Giese-Davis et al., 2011). The side effects of medical care in cancer patients increase emotional disturbances which significantly reduce the quality of life and cause

extensive psychological disorders (Saeedi et al., 2019). Another study suggests that women who suffer from breast cancer feel psychological pressure in the form of a threat to death (Malik & Kiran, 2013). The purpose of this study was to explore the psychological condition of breast cancer survivors after mastectomy and chemotherapy.

METHOD

This was a qualitative study based on phenomenology through thematic analysis methods approach, it conducted in April 2019. The population was breast cancer survivors at three community health centers in Surabaya Indonesia and participants were selected using purposive sampling technique with inclusion criteria consist of 1) participants who had been diagnosed of breast cancer at least 1 year, 2) participants who have completed cancer therapy mastectomy and chemotherapy, 3) Participants who have productive age range (15 – 64 years old). Saturation data was conducted after 20 interviews. Data were collected by an in-depth interview which aimed to get detailed information about the phenomenon that occurred and recorded by a digital recorder. The instrument used structured question guidelines made by researchers. Duration of interview process average of 20 minutes each participant. During the interview process there was no interruption. The researcher transcribed verbatim after the interview results were recorded. After that the in vivo coding process method was performed that the researcher wrote the code by the words used by participants. The next step was grouping the same meaning of code into the groups. After that researcher selected the theme. The last stage was to determine the conclusions/ verification of analysis results.

Medical Faculty Widya Mandala Catholic University Surabaya has conducted ethical feasibility and states that this study was ethically appropriate

with certificate number 003/WM12/KEPK/T/2019. Before collecting data the researcher conducts ethical procedures by explaining important research points including the objectives, research process, benefits, and risks that may occur during the study. Patients who are willing to become participants sign an informed consent sheet as a form of consent without coercion.

RESULT AND DISCUSSION

Table 1. Demographic Characteristic

Demographic Data	Result
Age, year (mean + SD)	41.4 ± 8.04
Marital status	
Married	10 (50%)
Single	4 (20%)
Widow	6 (30%)
Job status	
Resign	10 (50%)
Active	10 (50%)
Cancer stage	
Stage 2	4 (20%)
Stage 3	12 (60%)
Stage 4	4 (20%)
Duration diagnosed with cancer	
1 – 2 years	10 (50%)
3 – 4 years	6 (30%)
>4 years	4 (30%)

Based on table 1 showed that the participant's average age of 41.4 years, most of them were married. Half of them resigned from their job since being diagnosed with cancer. The majority of participants were breast cancer stage 3 and have been diagnosed with cancer 1 - 2 years

Table 2. The theme of "hopelessness", sub-theme and participant's narratives

Theme 1: Hopelessness	
Sub-theme	Participant's narratives
Worthlessness	All participants reported worthlessness and life becomes useless Participant 7 (37 years) said: "I feel that my life is worthless and very sad" Participant 2 (43 years) said: "I am bored with my conditions and my life has no meaning anymore" Participant 10 (28 years) said:

Theme 1: Hopelessness	
Sub-theme	Participant's narratives
	"Since I had cancer, I have become a worthless and helpless person"
Purposeless in life	All participants feel purposeless in their life Participant 4 (30 years) said: "Since I had cancer, I resigned from my working and no purpose in life anymore, let it go" Participants 18 (39 years) said: "I do not know the purpose of my life, let everything run as it is" Participants 6 (44 years) said: "The purpose of life for cancer patients is death"
Pessimistic	Most participants feel pessimistic about their life Participant 12 (31 years) said: "In my opinion, cancer that I experienced was difficult to cure because several times it grew after finishing treatment and impossible to recover" Participant 15 (44 years) said: "I felt hopeless and have no hope anymore since being diagnosed with cancer 2 years ago" Participant 9 (33 years old) said: "I always feel pessimistic about my condition and feel useless"
Unhappy	Most participants feel unhappy because of limited activity and poor appearance. Participant 10 (28 years) said: "I was not happy since I have cancer, I hate it" Participant 11 (35 years) said: "I am jealous of the lives of others who are healthy because at this time I am no longer able to enjoy my life" Participant 20 (50 years) said: "My life feels monotonous and unpleasant" Participant 16 (49 years) said: "I feel hard living of my life"

Based on table 2 showed that on theme hopelessness found 4 sub-theme consist worthlessness, purposeless in life, pessimistic, and unhappy.

Table 3: Theme of “negative psychological well-being”, sub-theme and participant's narratives

Theme 2: Negative psychological well-being	
Sub-theme	Participant's narratives
Worried	Most participants always worried about their condition Participant 14 (49 years) said: “I am worried about my illness that did not get better soon” Participant 3 (48 years) said: “I am worried when death is near” Participant 17 (50 years) said: “I worry that the cancer cells will spread quickly”
Negative thought	All participants have a negative thought Participant 1 (49 years) said: “Everything is always bad in my life, I fell unlucky” Participant 5 (50 years) said: “Nothing was pleasant in my life, everything felt heavy” Participant 19 (45 years) said: “My life has been chaotic and my future is gone because of this cancer” Participant 20 (50 years) said: “I think death is better than life right now”
Irritable	Most participants feel sensitive easily (irritable) Participant 12 (31 years) said: “I am easily angry with others when they talk about my illness” Participant 2 (43 years) said: “I became irritable especially to my family because they governed my life too much” Participant 13 (45 years) said: “I often get angry at myself for having cancer”
A negative relationship with others	All participant has a negative relationship with others Participant 4 (30 years) said: “I prefer to be alone, even at the office I also don't have many friends” Participant 11 (35 years) said: “Since I was diagnosed with cancer, many friends and family go away from me” Participant 10 (28 years) said: “I didn't want others to know about my illness” Participant 9 (33 years) said: “I'd rather be at home than interacting with my neighbors” Participant 12 (31 years) said: “I feel other people look down on, me since I got cancer” Participant 8 (39 years) said: “While I am working, I want to go

Theme 2: Negative psychological well-being	
Sub-theme	Participant's narratives
	home soon, because I don't want to interact for a long time with friends at work”
Denial	Most participants feel difficult to accept themselves Participant 10 (28 years) said: “Until now I still hope that my cancer is just a dream” Participant 11 (35 years) said: “I'm very disappointed with myself” Participant 7 (37 years) said: “In my opinion, this is not cancer”
Felt guilty	The most participant felt guilty about cancer suffered Participant 20 (50 years) said: “I got cancer because of my mistakes in the past” Participant 13 (45 years) said: “I feel guilty to my family because since I was sick, my family was neglected” Participant 5 (50 years) said: “God gave me this cancer to atone for my sins” Participant 19 (45 years) said: “Maybe I made a mistake so now I have cancer like this”

Based on table 3 showed that on theme negative psychological well-being found 6 sub-theme consist of worried, negative thought, irritable, negative relationship with others, denial, felt guilty.

Discussion

Based on this study all of the participants were productive age range. Productive age people have the characteristics of being more physically active in daily activities so that they will feel satisfaction and optimal life welfare when they can do their activities as they wish (Maher et al., 2015). However, when a productive age people are suffering from illness and physically disrupted, it causes stress. This opinion in line with a previous study which states that cancer patients in the age range of 40-69 years have high perceived stress levels (Song et al., 2017). Someone who is experiencing stress will trigger depression with symptoms that often appear are excessive sadness, feelings of hopelessness, and feelings of emptiness

(Holland et al., 2013). This is line with a study that states breast cancer patients feel severe depression and this causes hopeless (Mitchell et al., 2017). Another study states that hopelessness occurred in women diagnosed with cancer grade I - III with symptoms of depression (Brothers & Andersen, 2009). Hopelessness and depression in breast cancer patients with young adulthood can occur when newly diagnosed with cancer, undergoing adjuvant chemotherapy, or when experiencing a relapse (Gil & Gilbar, 2001). This is slightly different from the findings in this study which all of the respondents who have hopelessness are those who have been diagnosed with cancer for 1 - 2 years and have completed a surgery and chemotherapy program after mastectomy participants have lost her feminine icon and it causes hopelessness. Similar research was found in a previous study that stated that the incidence of depression was higher in post-mastectomy breast cancer patients (Kim et al., 2017).

Based on the hopelessness theme, the study found 4 sub-themes, that participants feel worthless, no longer have a purpose in life, feel pessimistic about the future, and are not happy any more since being diagnosed with cancer until now. A previous study found that physical impairment due to cancer causes mental health dysfunction and hopelessness of the patient (Lauriola & Tomai, 2019). This is as revealed by another study of cancer patients that found a low score on the meaning in life, this is because patients feel their life is worthless (Hadi et al., 2017). A person who feels worthless tends to be pessimistic. A study of 354 breast cancer women who experience anxiety tends to be pessimistic and difficult to adapt to the disease (Thieme et al., 2017). Breast cancer patients have a high level of pessimism that is at risk of experiencing higher levels of anxiety and depression and can reduce the quality of life of patients (Zenger et al., 2011). Depression, despair, and pessimism

cause cancer patients to be unhappy and feeling prolonged sadness. This research found that all respondents felt unhappy with their lives because of major changes in their lives such as limited activity and poor appearance. This is consistent with another result of 16 breast cancer patients who after suffering from cancer most patients experienced a reduction in recreational activities and felt the unpleasant physical side effects of treatment such as loss of feminine appearance characteristics and decreased self-esteem (Bitsika et al., 2010). Hopelessness, pessimism, unhappiness in cancer patients caused by multi-factors such as frustration due to physical limitations, fear of relapse, sadness from leaving spouse and children, disappointing social support, and insecurity about the future (Looijmans et al., 2018).

Based on the findings in this study the majority of participants who experienced homelessness were young adult age, they state that since being diagnosed with cancer their life expectancy seemed to be destroyed. The same thing was stated in a study of cancer patients with an age range of 20-40 years, the majority experiencing negative emotions in the form of anxiety, depression, and despair (Trevino et al., 2012). Another study also reported that cancer patients who undergo chemotherapy at the age of <50 years are more prone to experience mood disorders and high psychological pressure (Jones et al., 2010). Another reason why cancer patients become depressed is because of job loss and income. Women with cancer who are unemployed and have lower incomes have more hopeless (Bakan & Özdemir, 2017). This is consistent with the findings of this study that some participants no longer work who rely on income from other family members.

This study also found the theme of negative psychological well-being. A study of women with breast cancer states that negative disease perceptions are more common in patients receiving chemotherapy

and this has a direct impact on the low scores of well-being (Lee et al., 2019). Psychological well-being refers to the awareness of the integrity of the individual includes self-acceptance, positive relationships with others, and also spiritual aspects (Dumalaon-Canaria et al., 2018). Several sub-themes found in this research were feeling worried, negative thinking, being irritable, having a negative relationship with others, denial (not being able to accept reality), and feeling guilty. The majority of participants worried about the spread of cancer cells, worrying about worsening conditions, and even many participants were worried in the face of death. This is the same as found by a study which states that 5-10% of patients with moderate to severe anxiety and worry (Vrinten et al., 2015). This is also in line with previous a study conducted on 60 adult cancer patients who are undergoing outpatient care stating that 30% of patients experience death anxiety in moderate to severe levels (Neel et al., 2015).

In this study, all participants have a negative thought. Patients often think negatively about cancer because cancer cells can easily spread throughout the body without being predicted (Kissal & Beşer, 2011). Negative thoughts arise from repeated thoughts with the contents of negative valence thoughts such as thoughts about feelings of depression, anxiety, negative moods, and negative self-confidence (Watkins, 2008). Individuals who experience psychological anxiety will be followed by negative thoughts, somatic anxiety, and negative self-acceptance (Paloş & Vişcu, 2014). Negative thoughts are expressions of one's emotional response to the sadness experienced (Ruscio et al., 2011). High emotional distress due to pain and various effects of treatment on adult cancer patients to old age causes patients to have negative thoughts about suicide (Robinson et al., 2009). Cancer fears arise due to the view of cancer as a deadly enemy, this can trigger

excessive anxiety so that it can inhibit the patient's self-control process (Vrinten et al., 2017).

In this study, the majority of respondents became irritable (angry) since being diagnosed with cancer. Anger is an expression expressed by individuals who have severe illnesses such as cancer, and can also be experienced by family members of cancer sufferers who can have an impact on the onset of an uncomfortable atmosphere (Julkunen et al., 2009). This is as revealed by a study that states that cancer patients are very irritable to various situations and the average anger score in women suffering from cancer is higher than men (Aghaei et al., 2015). The expression of negative emotions in breast cancer patients in the form of anger usually occurs after surgery (Nakatani et al., 2014). In this study, all of the participants had mastectomy surgery. Another study mentioned that 44 patients with benign breast cancer tend to express their anger physically (Bruno et al., 2014).

Anger expressed by cancer patients can trigger obstacles in the relationship between patients and others. This is very relevant to the findings of this study that the majority of respondents have a negative relationship with the family and the people around them. Poor social relations often occur in patients with various types of cancer, this has an impact on reducing the long-term survival of patients (Lutgendorf et al., 2012). Having breast cancer is a terrible experience that causes a person to experience trauma that can interfere with social relationships with others (Aydin et al., 2012). A study of 26 women with breast cancer said that patients experienced poor social interactions as a result of their illness and this significantly affected patients' psychological well-being (Lally et al., 2013). Another study of 104 cancer patients stated that patients always want to avoid contact with others due to their cancer, so that there arose obstacles in social relations (Zakowski et al., 2004).

One of the negative psychological well-being is the inability to accept the situation or better known as denial. Cancer patients who continue to refuse and cannot accept the reality of their lives will make the caregiver feel frustrated because the caregiver must overcome the patient's denial and this can lead to patient and caregiver quarreling which has an impact on negative relationships (Kogan et al., 2013). A previous study stated that the prevalence of denial of diagnosis in cancer patients with various types and stages ranges from 4 to 47%, patients who experience rejection tend to have maladaptive mechanical coping (Vos & de Haes, 2007).

Feeling guilty is also often experienced by cancer patients. As in the findings of this study, the majority of participants blamed themselves for the diagnosis of cancer they suffered, some blamed themselves due to previous wrongdoing and some blamed themselves due to their lifestyle. A previous study stated that cancer patients aged 30-50 years have constant guilt or often referred to as pathological guilt, they tend to have a negative god image, that is what will make a patient depressed (Alavi et al., 2013). Cancer patients often feel guilty and believe that cancer occurs because of sin and curses against them so that they continue to blame themselves and cause a prolonged psychological crisis (Abdollahzadeh et al., 2017). A study found the fact that there are 63.9% of cancer patients who feel guilty for the disease he suffered at this time (Perloff et al., 2016)

CONCLUSION

Breast cancer survivors who after mastectomy and chemotherapy have struggled with cancer have a dark side that is still felt today, namely hopelessness towards the future and negative psychological well-being which makes it even worse and sees life as meaningless. This finding is a challenge for medical staff and family caregivers to be able to provide

support so that breast cancer survivors can more positively see their lives. Researchers suggest to health workers especially palliative nurses to provide psychological accompaniment more intensively and provide positive motivation to help patients improve a better quality of life, and for future researcher, it is hoped that new interventions can be created to ease the psychological burden on breast cancer survivors

References

- Abdollahzadeh, R., Moodi, M., & Khanjani, N. (2017). Investigating the Mental Experience of Patients Suffering From Cancer. *Jundishapur Journal of Chronic Disease Care*, 6(3). <https://doi.org/10.5812/jjcdc.57685>
- Aghaei, M., Ghorbani, N., Rostami, R., & Mahdavi, A. (2015). Comparison of anger management, anxiety and perceived stress in patients with cancer and Coronary Heart Disease (CHD). *Journal of Medicine and Life*, 8(Spec Iss 4), 97–101. Retrieved from <http://www.ncbi.nlm.nih.gov/pubmed/28316714>
- Alavi, S. Z., Amin, F., & Savoji, A. P. (2013). Relationship between Pathological Guilt and God Image with Depression in Cancer Patients. *Procedia - Social and Behavioral Sciences*, 84, 919–924. <https://doi.org/10.1016/j.sbspro.2013.06.674>
- Aydin, E., Gulluoglu, B. M., & Kuscu, M. K. (2012). A Psychoanalytic Qualitative Study of Subjective Life Experiences of Women With Breast Cancer. *Journal of Research Practice*, 8(2), 1–15. Retrieved from <http://jrp.icaap.org/index.php/jrp/article/>
- Bakan, A. B., & Özdemir, S. (2017). Effect of Knowing the Diagnosis or Not on Cancer Patients' Hopelessness Levels. *International Journal of Caring Sciences*, 10(3), 1319–1328. Retrieved from www.internationaljournalofcaringsciences.org
- Bener, A., Alsulaiman, R., Doodson, L., & Agathangelou, T. (2017). Depression, hopelessness and social support among breast cancer patients: In highly endogamous population. *Asian Pacific Journal of Cancer Prevention*, 18(7), 1889–1896. <https://doi.org/10.22034/APJCP.2017.18.7.1889>
- Berhili, S., Ouabdelmoumen, A., Sbai, A., Kebdani, T., Benjaafar, N., & Mezouar, L. (2019). Radical Mastectomy Increases Psychological Distress in Young Breast Cancer Patients:

- Results of A Cross-sectional Study. *Clinical Breast Cancer*, 19(1), e160–e165. <https://doi.org/10.1016/j.clbc.2018.08.013>
- Berry, T. R., Stearns, J. A., Courneya, K. S., McGannon, K. R., Norris, C. M., Rodgers, W. M., & Spence, J. C. (2016). Women's perceptions of heart disease and breast cancer and the association with media representations of the diseases. *Journal of Public Health (United Kingdom)*, 38(4), e496–e503. <https://doi.org/10.1093/pubmed/fdv177>
- Bitsika, V., Sharpley, C. F., & Christie, D. R. H. (2010). "What made me unhappy". Experiences of, and responses to, lifestyle changes in breast cancer patients. *British Journal of Guidance and Counselling*, 38(2), 179–189. <https://doi.org/10.1080/03069881003601015>
- Bosco, J. L. F., Lash, T. L., Prout, M. N., Buist, D. S. M., Geiger, A. M., Haque, R., ... Silliman, R. A. (2009). Breast cancer recurrence in older women five to ten years after diagnosis. *Cancer Epidemiology Biomarkers and Prevention*, 18(11), 2979–2983. <https://doi.org/10.1158/1055-9965.EPI-09-0607>
- Bray, F., Ferlay, J., Soerjomataram, I., Siegel, R. L., Torre, L. A., & Jemal, A. (2018). Global cancer statistics 2018: GLOBOCAN estimates of incidence and mortality worldwide for 36 cancers in 185 countries. *CA: A Cancer Journal for Clinicians*, 68(6), 394–424. <https://doi.org/10.3322/caac.21492>
- Brothers, B. M., & Andersen, B. L. (2009). Hopelessness as a predictor of depressive symptoms for breast cancer patients coping with recurrence. *Psycho-Oncology*, 18(3), 267–275. <https://doi.org/10.1002/pon.1394>
- Bruno, A., Pandolfo, G., Scimeca, G., Leonardi, V., Cedro, C., Racchiusa, S., ... Muscatello, M. R. A. (2014). Anger in health, benign breast disease and breast cancer: a prospective case-control study. *In Vivo (Athens, Greece)*, 28(5), 973–977. Retrieved from <http://www.ncbi.nlm.nih.gov/pubmed/25189916>
- Chang, Y.-C., Hu, W.-Y., Chang, Y.-M., & Chiu, S.-C. (2019). Changes in sexual life experienced by women in Taiwan after receiving treatment for breast cancer. *International Journal of Qualitative Studies on Health and Well-Being*, 14(1), 1654343. <https://doi.org/10.1080/17482631.2019.1654343>
- Dizon, D. S. (2009). Quality of life after breast cancer: survivorship and sexuality. *Breast Journal*, 15(5), 500–504. <https://doi.org/10.1111/j.1524-4741.2009.00766.x>
- Dumalaon-Canaria, J. A., Prichard, I., Hutchinson, A. D., & Wilson, C. (2018). Fear of cancer recurrence and psychological well-being in women with breast cancer: The role of causal cancer attributions and optimism. *European Journal of Cancer Care*, 27(1). <https://doi.org/10.1111/ecc.12579>
- Fradelos, E. C., Papathanasiou, I. V., Veneti, A., Daglas, A., Christodoulou, E., Zyga, S., & Kourakos, M. (2017). Psychological distress and resilience in women diagnosed with breast cancer in Greece. *Asian Pacific Journal of Cancer Prevention*, 18(9), 2545–2550. <https://doi.org/10.22034/APJCP.2017.18.9.2545>
- Giese-Davis, J., Collie, K., Rancourt, K. M. S., Neri, E., Kraemer, H. C., & Spiegel, D. (2011). Decrease in depression symptoms is associated with longer survival in patients with metastatic breast cancer: A secondary analysis. *Journal of Clinical Oncology*, 29(4), 413–420. <https://doi.org/10.1200/JCO.2010.28.4455>
- Gil, S., & Gilbar, O. (2001). Hopelessness among cancer patients. *Journal of Psychosocial Oncology*, 19(1), 21–33. https://doi.org/10.1300/J077v19n01_02
- Hadi, H., Amin, S., Issa, H., Jamal, E. Z., & Mina, N. (2017). A comparative study on the meaning in life of patients with cancer and their family members. *Journal of Caring Sciences*, 6(4), 325–333. <https://doi.org/10.15171/jcs.2017.031>
- Haidinger, R., & Bauerfeind, I. (2019). Long-Term Side Effects of Adjuvant Therapy in Primary Breast Cancer Patients: Results of a Web-Based Survey. *Breast Care*, 14(2), 111–116. <https://doi.org/10.1159/000497233>
- Holland, J. C., Andersen, B., Breitbart, W. S., Buchmann, L. O., Compas, B., Deshields, T. L., ... Freedman-Cass, D. A. (2013). Distress Management: Clinical practice guidelines in oncology. *JNCCN Journal of the National Comprehensive Cancer Network*, 11(2), 190–209. <https://doi.org/10.6004/jnccn.2013.0027>
- Jones, J. M., Cheng, T., Jackman, M., Rodin, G., Walton, T., & Catton, P. (2010). Self-efficacy, perceived preparedness, and psychological distress in women completing primary treatment for breast cancer. *Journal of Psychosocial Oncology*, 28(3), 269–290. <https://doi.org/10.1080/07347331003678352>
- Julkunen, J., Gustavsson-Lilius, M., & Hietanen, P. (2009). Anger expression, partner support, and quality of life in cancer patients. *Journal of Psychosomatic Research*, 66(3), 235–244. <https://doi.org/10.1016/j.jpsychores.2008.09.011>
- Kim, M. S., Kim, S. Y., Kim, J. H., Park, B., & Choi, H. G. (2017). Depression in breast cancer

- patients who have undergone mastectomy: A national cohort study. *PLoS ONE*, *12*(4). <https://doi.org/10.1371/journal.pone.0175395>
- Kissal, A., & Beşer, A. (2011). Knowledge, facilitators and perceived barriers for early detection of breast cancer among elderly Turkish women. *Asian Pacific Journal of Cancer Prevention*, *12*(4), 975–984. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/21790237>
- Kocan, S., & Gursoy, A. (2016). Body Image of Women with Breast Cancer After Mastectomy: A Qualitative Research. *Journal of Breast Health*, *12*(4), 145–150. <https://doi.org/10.5152/tjbh.2016.2913>
- Kogan, N. R., Dumas, M., & Cohen, S. R. (2013). The extra burdens patients in denial impose on their family caregivers. *Palliative and Supportive Care*, *11*(2), 91–99. <https://doi.org/10.1017/S1478951512000491>
- Lally, R. M., Hydeman, J. A., Schwert, K. T., & Edge, S. B. (2013). Unsupportive social interactions in the weeks immediately following breast cancer diagnosis. *Journal of Psychosocial Oncology*, *31*(4), 468–488. <https://doi.org/10.1080/07347332.2013.798758>
- Lauriola, M., & Tomai, M. (2019). Biopsychosocial Correlates of Adjustment to Cancer during Chemotherapy: The Key Role of Health-Related Quality of Life. *Scientific World Journal*, *2019*. <https://doi.org/10.1155/2019/9750940>
- Lee, Y., Baek, J.-M., Jeon, Y.-W., & Im, E.-O. (2019). Illness perception and sense of well-being in breast cancer patients. *Patient Preference and Adherence*, *Volume 13*, 1557–1567. <https://doi.org/10.2147/PPA.S225561>
- Looijmans, M., van Manen, A. S., Traa, M. J., Kloover, J. S., Kessels, B. L. J., & de Vries, J. (2018). Psychosocial consequences of diagnosis and treatment of lung cancer and evaluation of the need for a lung cancer specific instrument using focus group methodology. *Supportive Care in Cancer*, *26*(12), 4177–4185. <https://doi.org/10.1007/s00520-018-4291-1>
- Lutgendorf, S. K., De Geest, K., Bender, D., Ahmed, A., Goodheart, M. J., Dahmouh, L., ... Sood, A. K. (2012). Social influences on clinical outcomes of patients with ovarian cancer. *Journal of Clinical Oncology*, *30*(23), 2885–2890. <https://doi.org/10.1200/JCO.2011.39.4411>
- Maher, J. P., Pincus, A. L., Ram, N., & Conroy, D. E. (2015). Daily physical activity and life satisfaction across adulthood. *Developmental Psychology*, *51*(10), 1407–1419. <https://doi.org/10.1037/dev0000037>
- Mitchell, A. M., Pössel, P., Van Voorhees, B. W., & Eaton, W. W. (2017). Associations of depression status and hopelessness with breast cancer: A 24-year follow-up study. *Journal of Health Psychology*, *22*(10), 1322–1331. <https://doi.org/10.1177/1359105315626998>
- Nakatani, Y., Iwamitsu, Y., Kuranami, M., Okazaki, S., Shikanai, H., Yamamoto, K., ... Miyaoka, H. (2014). The Relationship Between Emotional Suppression and Psychological Distress in Breast Cancer Patients After Surgery. *Japanese Journal of Clinical Oncology*, *44*(9), 818–825. <https://doi.org/10.1093/jjco/hyu089>
- Neel, C., Lo, C., Rydall, A., Hales, S., & Rodin, G. (2015). Determinants of death anxiety in patients with advanced cancer. *BMJ Supportive & Palliative Care*, *5*(4), 373–380. <https://doi.org/10.1136/bmjspcare-2012-000420>
- Paloş, R., & Vişcu, L. (2014). Anxiety, Automatic Negative Thoughts, and Unconditional Self-Acceptance in Rheumatoid Arthritis: A Preliminary Study. *ISRN Rheumatology*, *2014*, 1–5. <https://doi.org/10.1155/2014/317259>
- Perloff, T., Shen, M. J., Rigney, M., & King, J. C. (2016). Survivor guilt: The secret burden of cancer survivorship. *Journal of Clinical Oncology*, *34*(3_suppl), 192–192. https://doi.org/10.1200/jco.2016.34.3_suppl.192
- Rainey, L., Jervaeus, A., Donnelly, L. S., Evans, D. G., Hammarström, M., Hall, P., ... van der Waal, D. (2019). Women’s perceptions of personalized risk-based breast cancer screening and prevention: An international focus group study. *Psycho-Oncology*, *28*(5), 1056–1062. <https://doi.org/10.1002/pon.5051>
- Robinson, D., Renshaw, C., Okello, C., Møller, H., & Davies, E. A. (2009). Suicide in cancer patients in South East England from 1996 to 2005: a population-based study. *British Journal of Cancer*, *101*(1), 198–201. <https://doi.org/10.1038/sj.bjc.6605110>
- Ruscio, A. M., Seitchik, A. E., Gentes, E. L., Jones, J. D., & Hallion, L. S. (2011). Perseverative thought: A robust predictor of response to emotional challenge in generalized anxiety disorder and major depressive disorder. *Behaviour Research and Therapy*, *49*(12), 867–874. <https://doi.org/10.1016/j.brat.2011.10.001>
- Saeedi, N. R., Sharbaf, H. A., Ebrahimabad, M. J. A., & Kareshki, H. (2019). Psychological Consequences of Breast Cancer in Iran: A Meta-Analysis. *Iranian Journal of Public Health*

- Health*, 48(5), 816–824. Retrieved from <http://www.ncbi.nlm.nih.gov/pubmed/31523637>
- Song, H., Saito, E., Sawada, N., Abe, S. K., Hidaka, A., Shimazu, T., ... Tsugane, S. (2017). Perceived stress level and risk of cancer incidence in a Japanese population: The Japan Public Health Center (JPHC)-based Prospective Study. *Scientific Reports*. <https://doi.org/10.1038/s41598-017-13362-8>
- Thieme, M., Einenkel, J., Zenger, M., & Hinz, A. (2017). Optimism, pessimism and self-efficacy in female cancer patients. *Japanese Journal of Clinical Oncology*, 47(9), 849–855. <https://doi.org/10.1093/jjco/hyx079>
- Trevino, K. M., Maciejewski, P. K., Fasciano, K., Greer, J., Partridge, A., Kacel, E. L., ... Prigerson, H. G. (2012). Coping and Psychological Distress in Young Adults With Advanced Cancer. *Journal of Supportive Oncology*, 10(3), 124–130. <https://doi.org/10.1016/j.suponc.2011.08.005>
- Vos, M. S., & de Haes, J. C. J. M. (2007, January). Denial in cancer patients, an explorative review. *Psycho-Oncology*. <https://doi.org/10.1002/pon.1051>
- Vrinten, C., McGregor, L. M., Heinrich, M., von Wagner, C., Waller, J., Wardle, J., & Black, G. B. (2017). What do people fear about cancer? A systematic review and meta-synthesis of cancer fears in the general population. *Psycho-Oncology*, 26(8), 1070–1079. <https://doi.org/10.1002/pon.4287>
- Vrinten, C., Waller, J., Von Wagner, C., & Wardle, J. (2015). Cancer Fear: Facilitator and Deterrent to Participation in Colorectal Cancer Screening. *Cancer Epidemiology Biomarkers and Prevention*, 24(2), 400–405. <https://doi.org/10.1158/1055-9965.EPI-14-0967>
- Watkins, E. R. (2008). Constructive and Unconstructive Repetitive Thought. *Psychological Bulletin*, 134(2), 163–206. <https://doi.org/10.1037/0033-2909.134.2.163>
- Yang, X., Zhu, C., & Gu, Y. (2015). The Prognosis of Breast Cancer Patients after Mastectomy and Immediate Breast Reconstruction: A Meta-Analysis. *PLOS ONE*, 10(5), e0125655. <https://doi.org/10.1371/journal.pone.0125655>
- Zakowski, S. G., Ramati, A., Morton, C., Johnson, P., & Flanigan, R. (2004). Written emotional disclosure buffers the effects of social constraints on distress among cancer patients. *Health Psychology*, 23(6), 555–563. <https://doi.org/10.1037/0278-6133.23.6.555>
- Zenger, M., Glaesmer, H., Höckel, M., & Hinz, A. (2011). Pessimism predicts anxiety, depression and quality of life in female cancer patients. *Japanese Journal of Clinical Oncology*, 41(1), 87–94. <https://doi.org/10.1093/jjco/hyq168>