

Experiences of Healing Yoga among Breast Cancer Women with Adjuvant Chemotherapy

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Abstract

Objective: To illustrate the experiences and perceived benefits of healing yoga as described by patients with breast cancer participating in a healing yoga program.

Methods: The qualitative research with naturalistic design was conducted after the completion of an 8 weeks healing yoga program. A total of 11 breast cancer women with adjuvant chemotherapy were interviewed using the semi-structured interview guidelines.

Findings: Participants expressed their experiences of healing yoga, including transforming concern to confidence, regaining a sense of belonging, gaining experience and satisfaction, and leading the way for life, were critical in developing these benefits. The perceived benefits of participating in this program was described as positive mental support, promoted a mind-body interaction and provided benefits ascribed to social activities, leading to a reported increase in active participation in life.

Conclusion: This study gives support for the positive experiences of healing yoga among patients with a breast cancer. The objective effect of the healing yoga must be examined further to guide nurses in implementing suitable health promotional strategies for breast cancer patients.

Keywords: Healing yoga; Breast cancer; Qualitative research; Adjuvant chemotherapy

Introduction

Breast cancer is the most common cancer worldwide in women. Nearly 1.7 million women were diagnosed with breast cancer in 2015, and this number is expected to increase rapidly because of more than 25% the incidence rate which can become a major concern in health care systems [1]. Patients with breast cancer are typically treated using surgery followed by chemotherapy which is the most popular method used to treat breast cancer. The types of chemotherapy for breast cancer include CMF (cyclophosphamide, methotrexate, fluorouracil), FAC (fluorouracil, doxorubicin, cyclophosphamide), FEC (fluorouracil, epirubicin, cyclophosphamide) and TAC (docetaxel, doxorubicin, cyclophosphamide) [2]. However, the side effects of chemotherapy often cause psychosocial distress and physical discomfort [3]. Conditions induced by chemotherapy include nausea, vomiting, diarrhoea, loss of appetite, and bone marrow inhibition, which substantially affect the quality of life of patients if not alleviated [4]. In addition, previous studies have indicated that 40%–100% of breast cancer patients experienced psychological distress such as anxiety, general unhappiness negative thoughts, physical problems, fatigue and depression when undergoing chemotherapy [5-7]. Intervention targeting psychological distress is of great importance for patient with breast cancer who undergoing chemotherapy.

Multiple studies provided mechanisms on the vast on the vast mental health and physical benefits associated with yoga among healthy population8-10. The mechanisms behind this improvement are

often a result of changes in the electrical activity of neurons within the brain which stimulating the activation of alpha, beta, and theta brainwave. Alpha (α) waves in associated with calmness can be increased after breathing, meditation, and asana-based yoga practice, beta waves in associated with task performance to be improved in frequency and amplitude during and after mainly breathing based yoga and theta (θ) wave in associated with repetitive tasks and autonomy to be increased in asana and breathing based yoga practice [8-10]. Healing yoga can also generate controlled high-frequency gamma waves which is associated with intelligence, compassion, self-control and feelings of happiness in result of decrease psychosocial distress [9,11]. In addition to brain activation, healing yoga can lower morning and 5 p.m. salivary cortisol and improved emotional well-being and fatigue in breast cancer survivors [12].

Understanding the mechanisms behind the healing yoga within the brain can lead to better knowledge of a constructive effect on the anatomy of the brain from healing yoga. Using a randomized controlled trial to examine the effect of healing yoga on improving depression, anxiety and fatigue of breast cancer women have been undertaken [13]; however, qualitative research to explore the benefits of healing yoga among patients with breast cancer remains unclear. What can elicit changes in individual that are occurring psychological benefits, can give insight into the development of interventions in patients with breast cancer as well as both healthy and clinical populations. Therefore, the purpose of this qualitative study is to illustrate participants' perceived benefits and experiences of healing yoga following the completion of participating the experimental study.

Methods

Design

This study reported exploratory findings from one substantial section of the experimental study [13] examining the perceptions and experience of patients participating in healing yoga. The qualitative research approach undertaken in this study was a form of naturalistic inquiry. The aim of this approach is to understand how people make meaning of naturally occurring situation or phenomena within a real-world setting [14]. This study involved interview guide with participants who were interested in contributing their perceived benefits and experiences of healing yoga.

Study sample and recruitment

Researchers used a purposive sampling technique to recruit participants from the first phase study (n=30) of a randomized controlled trial on the efficacy of healing yoga for women with breast cancer at the hospital in the Southern of Taiwan. The authors targeted participants who would be able to offer valuable descriptions of the phenomena being studied. The participants were required to (a) be breast cancer patients who completed an 8 weeks healing yoga

program; (b) be able to provide informed consent. All of the participants received medical clearance before joining the group. At the end of the follow-up questionnaire, participants from the intervention group were asking if the she was willing to participate in a qualitative interview regarding their experiences and signed the consent form. All 30 participants in the healing yoga intervention been asked to enter into the qualitative study and 11 gave a consent to participate. The Institutional Review Board of Chi Mei Medical Center approved this study (No. 09912-L01).

Intervention-healing yoga

All participants were from the experimental group who not only received the standard care, but also participated 60 min healing yoga, twice a week for 8 weeks. A team of yoga instructors and rehabilitation teachers designed a healing yoga followed the principle of healing yoga for people living with cancer written by Holtby [15]. The exercise cycled through three segments including (a) 10 min of meditation and breathing exercises that focused participant attention on breathing and on internal body sensations; (b) 40 min of healing yoga with a series of 10 modified *Asana* yoga composed of gentle stretching and strengthening exercises targeting specific groups of muscle, tendons, and ligaments; and (c) 10 min of cool-down exercises (Table 1).

Segments	Activities
Meditation for 10 min	Accomplished Pose (Siddhasana)
	1. Meditation (Dhyana) for determination of a part of the body and internalization of being-for-self.
	2. Yoga breathing (Pranayama) for controlling the breath and internalize body sensations.
yoga exercises for 40 min	Legs Up the Wall Pose (Viparita Karani)
	A series of modified yoga asana :
	1. Mountain Pose (Tadasana)
	2. Tree Pose (Vrksasana)
	3. Pelvic Tilts Pose (Setu Bandha Sarvangasana)
	4. Cobra Pose (Bhujangasana)
	5. Yawning Dog Pose (Adho Mukha Svanasana)
	6. Resting Child Pose (Balasana)
	7. Pigeon Pose (Eka Pada Rajakapotasana)
	8. Fire Log Pose (Agnistambhasana)
	9. Supported Forward Fold (Uttanasana)
	10. Repose Pose (Pranayama)
Relaxation for 10 min	Resting Pose (Shavasana) for relaxation
	Restorative yoga pose for ending

Table 1: The Segments and activities of intervention for breast cancer patients.

Interviews

Those who agreed to participate in the study were conducted in a private room at the medical teaching hospital following the final activity session of program and were asked about their experiences of

participating in the healing yoga. Each focus group interviews usually last about 90 min. All interviews were done by one of the study coordinators not involved with the group intervention. Participants were asked the following questions: *“How was your previous experience with a healing yoga or similar practiced during the*

program?"; "What were your expectations from this exercise and what extent were they met?"; "What have you learned from this program?"; "What have you experienced any adverse reaction to this program?"; "How did this program affect your life now and in the future?". The interviews were terminated when thematic saturation was achieved – new interviews producing no new significant themes resulting in 11 participants.

Data analysis

All of the audio records were transcribed into written documentation. Two researchers independently transcribed recordings verbatim and thematically analyzed the recordings inductively. The content analysis methods were used by first coding each individual interview and then by comparing the interviews. This involved coding at the sentence level, developing categories and overarching themes. Discrepancies between the two researchers were discussed and a consensus was attained. The final themes were compared with those of the participants and the confirmed notes taken during the interview, and these themes were discussed with the members of the research team to identify implicit assumptions, plus an outsider invited as an independent reviewer, verified the validity and reliability of the analysis. We discussed the meanings of emerging themes until agreement was reached.

Results

Demographic information

This article is based on data from the participants in the intervention group who agreed to participate in a qualitative interview after the intervention. All of the participants were receiving chemotherapy (n=11) (Table 2). Of these patients, mean age was 46.55 years (range: 26-70 years). Most of the participants were married (n=9, 82%), had a college education (n=8, 73%), were Buddhist (n=6, 55%) and were employed (n=6, 55%) at the beginning of the study. Most of the participants were in stages II (n=4, 36%) and III (n=4, 36%) of breast cancer; only 3 participants were in stage I (n=3, 28%). The types of chemotherapy received by participants were: 4 in CMF (37%), 3 in CAF (27%), 2 in CMF (18%) and 2 in FEC (18%). The chemotherapy is usually given in cycles following by a period of rest and each course of chemotherapy generally consists of six cycles lasting for half year.

characteristics	n=11	%
Age		
20-40	3	27
41-60	7	64
61-70	1	9
Educational levels		
Junior school	1	9

High school	2	18
College	8	73
Religious		
Buddhism	6	55
Christian	2	18
Not religious	3	27
Marital status		
Single	2	18
Married	9	82
Occupational status		
Employed	6	55
Unemployed	5	45
Cancer status		
Stage I	3	28
Stage II	4	36
Stage III	4	36
Chemotherapy regimen		
TAC	4	37
FAC	3	27
CMF	2	18
FEC	2	18
The adherence rate of yoga exercise among participants with a month post-surgery		
Yes	10	90
No	1	10

Table 2: Demography characteristics of patients with breast cancer, TAC: Docetaxel/Doxorubicin/Cyclophosphamide; FAC: Fluorouracil, Doxorubicin, Cyclophosphamide; CMF: Cyclophosphamide, Methotrexate, Fluorouracil; FEC: Fluorouracil, Epirubicin, Cyclophosphamide.

Themes

After the creation of a codebook based on the research questions, researchers identified relevant paraphrase, reduced and summarized of the data and four main themes with 13 subthemes were developed in the following sections which were substantiated among the participants through member checks (Figure 1).

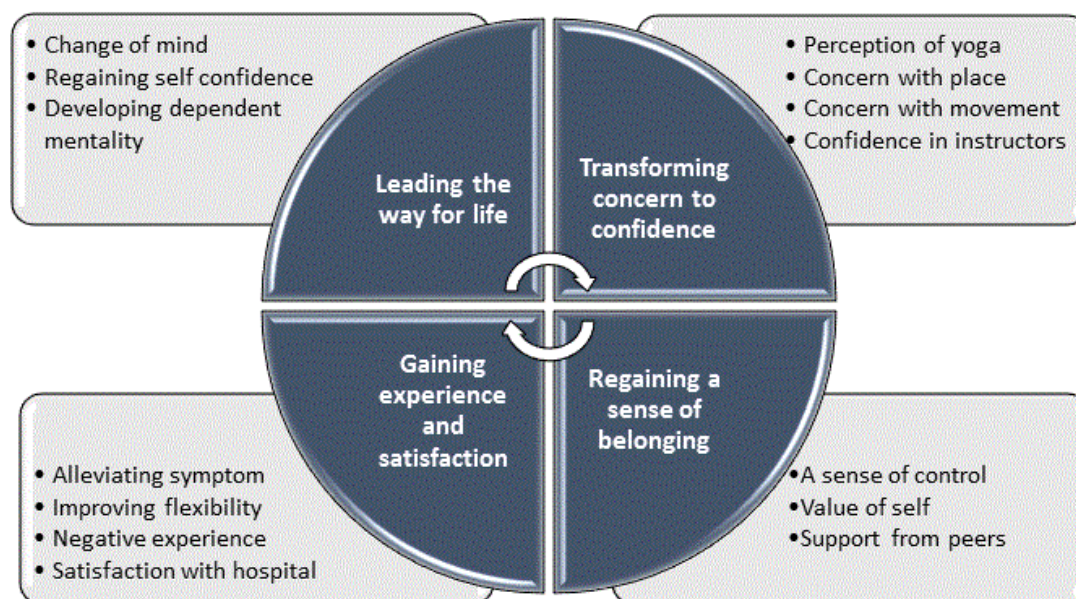


Figure 1: Major themes and subcategories.

Transforming concern to confidence

Before the participants participated in the healing yoga, their perception of yoga was ambivalent and they were concerned that healing yoga would result in postsurgical injuries to the limbs on the side on which they were operated or other uncertain effects. These concerns included fears of training sites, yoga movements and instructors. Several participants who had no yoga experience expressed stereotypical perceptions of healing yoga and stated, “I always thought yoga was for older people because I felt that the exercise is not strenuous enough” (Participant H). They believed that healing yoga does not yield substantial health benefits. Another concern was the safety and appropriateness of the learning sites. Participant D said, “To be honest, I’m afraid that the place (learning site) I find will be inappropriate, and that I might injure myself during yoga practice.” Most of the participants wanted to locate a healing yoga learning site specifically for patients with breast cancer because they were afraid that the instructor may not be aware of suitable types of healing yoga for them.

The other participants were concerned about whether the movements during healing yoga would cause injuries and whether the healing yoga was specifically designed for patients with breast cancer. For example, one participant stated, “You can never be sure if body-mind yoga class is suitable for patients like us” (Participant I) and another participant asked, “Are they (instructors) aware of the types of movement that breast cancer patients are capable of?” (Participant B). Therefore, several participants were afraid that yoga movements might injure the limbs on the side on which they were operated, causing them to refrain from performing some movements and preventing them from relaxing their bodies completely during the section of Shavasana yoga. After several classes, numerous participants reported that the healing yoga movements are safe to perform and thus gained trust in the instructor, enabling them to open their bodies and minds and

follow the instructor’s tempo in performing deep meditation, relaxation, symptom relief, and stretching. One participant reported, “I can achieve the movement based on instructions from the instructor” (Participant C) and “another participant stated, “The instructor does a wonderful job in guiding us in breathing and moving” (Participant G). During yoga practice, the participants gradually acquired a sense of comfort in the learning site and yoga movements through the guidance of professional yoga instructors.

Regaining a sense of belonging

Healing yoga can promote a calm awareness of the body, feelings, and mind by enabling participants to focus on the moment with openness, reducing their anxiety, fatigue and promoting a sense of calmness and relaxation. Factors that emerged from this category included a sense of control, recognizing self-value and support from others. Several participants indicated that the breathing exercises helped them increase their cognition and awareness. Participant J indicated that “breathing control and relaxation enables me to consciously control my spine (for relaxing).” Yoga meditation enabled the participants to obtain a sense of control over their bodies, release thoughts of unease, and develop their inner energy. Once the participants acquired control of their bodies, they began learning to focus on and value themselves. Participant G reported, “I’ve started focusing on myself and valuing myself more. I did not care for myself so much in the past, but now I do.” The improved sense of control enabled participants to cope effectively with breast cancer, facilitating optimal psychosocial adjustment.

Two of the participants stated that, because all of the members had the same disease, they did not feel socially isolated, enabling them to share disease-related experiences with each other. “It feels like everyone’s heart is closely tied together” (Participant F). Healing yoga provided the participants with a sense of belonging and the ability to

inspire and encourage other people, enhancing the self-esteem of the participants and enabling them to overcome their personal problems and progress toward recovery.

When I come here and see a lot of people, I do not feel lonely at all... We are all breast cancer patients...I think the support, the power of support becomes very strong. At least you do not feel as if you are fighting this (disease) alone and you know that there are a bunch of people just like you, trying to become better (Participant F).

The release of emotions and feelings of care and attention may result not only from healing yoga but also from instructor support and companionship among members. Healing yoga alleviates stiffness. Numerous participants reported that healing yoga helped them relax.

Gaining experience and satisfaction

Several of the participants experienced that healing yoga provides extensive benefits, including improved flexibility, strength, and concentration. The subcategories of this theme are alleviating symptoms, improving flexibility, negative experience and satisfaction with the hospital. The health benefits associated with healing yoga reported by the participants included improved flexibility, increased strength, improved sleep, reduced depression, and a healthy appetite. Participant K said, *"It helped reduce my tiredness and relieve feelings of depression!"* Participant G said, *"I used to have trouble sleeping and now I use meditation to concentrate and relax, which, in turn, helps me get truly restful sleep. I am so thankful for it."*

Numerous participants reported that healing yoga helped them relax tension, tension, improve flexibility, and ease stiff muscles in the back, hips, and legs. Participant F stated, *"it loosened my neck, entire spine, and head. I felt tense (before the class), but my entire body felt relaxed and very comfortable (after healing yoga)."* *"I used to feel stiff in my tendons, but I have not experienced this problem since participating in these 8 weeks haling healing yoga classes,"* stated Participant J. Participant G happily announced *"after sweating, the arm that was operated on is less swollen."* Participant D stated, *"I do not feel as tight as usual."* Several participants felt bodily changes of tension to relaxation, decreased swelling of the limbs, and alleviation of pain.

The participants also described negative experiences, including muscle ache, nausea, and concern about their ability to maintain progress in healing yoga. Participant B reported, *"My back pain may be caused by doing too much yoga."* Participant A stated, *"At the beginning, I had muscle pain...the pain was pretty severe."* Some participants expressed a fear of being late and that it may cause difficulty in following the instructor. *"When I was driving to yoga class, I was afraid that I would be late and would miss some moves,"* reported Participant I.

Several participants expressed appreciation to the hospital for providing this service to them and gave a high rating of overall satisfaction with healing yoga. Participant E stated, *"I feel so thankful and my heart is full of gratitude. I thank the hospital for taking care of our bodies and health after surgery and this has made the hospital become such a warm place."*

Ten of the participants reported a decrease in symptom distress, increase in flexibility, and relaxation of the mind and body attributable to the healing yoga. Although some of them experienced negative symptoms caused by healing yoga at the beginning, they continually participated in the 8 weeks healing yoga program until the end. In addition, the hospital not only attracted the participants but also

attracted the employees because of the participants' support and satisfaction.

Leading the way for life

Healing yoga helped nine participants change their perspectives on life. They learned to disregard all trivial matters, treat themselves well and re-evaluate their self-value. The participants recalled that they rarely slowed down to relax and that the pace of everyday life was fast. Participant G reported, *"I used to think about nothing but making money...every day. Now I know that I should live for myself...all my confidence has come from yoga!"* Healing yoga enabled them to learn to increase their awareness and value themselves, causing them to feel happy and carefree. Participant J reported, *"When you exercise, your thoughts tend to be more positive and cheerful."* *"I feel very happy and confident, and it (yoga) makes me realize that this is just what I want,"* explained Participant F. After experiencing relief from the pain and suffering of illness, the participants gradually regained confidence in the process of exercising. This was indicated by Participant G:

My emotions have changed so much, and now I have begun thinking in a positive way. I do yoga every day now because I have started to focus on myself and value myself more. I did not take care of myself enough in the past, but now I do.

Through exercise, the participants learned to manage situations with a calm and positive mind, enabling them to regain confidence, identify goals in life, and live their own lives in a meaningful manner. Six participants stated that they did not have regular exercise habits before they participated in the healing yoga program. After 8 weeks of haling healing yoga, it became part of their lives. Participant C proudly stated, *"I do yoga regularly on my own now and I feel more relaxed after yoga; it is like I depend on it."* This was supported by Participant G: *"It (yoga) becomes a thing I must do now...like I am dependent on it."* Throughout the 8 weeks healing yoga practice, a habit of regular exercise was gradually established, and healing yoga became an interesting and essential event in the lives of the participants.

Discussion

The 8 weeks healing yoga combined postures, breathing techniques, and meditation to help participants make a difference in their lives through apprehension, camaraderie, involvement, and transformation. Patients with breast cancer often have little information on physical activities suitable for post-surgery exercise and are concerned that exercise may cause them harm, reinjures, and side effects. Therefore, they are hesitant to perform physical exercise. Another reason may be concern that health care professionals do not actively provide patients with post-surgery exercise plans. This explains why the participants in this study avoided physical activity before they participated in the healing yoga. However, the participants felt comfortable with the yoga postures and gradually began to trust the yoga instructor, express their approval and provide positive feedback. The results indicate that most participants seen to find the program beneficial and expressed feelings of reduced distress symptoms both during and after the completion of the program.

The techniques of breathing control and meditation in healing yoga are based on the mindfulness theory [16,17]. The techniques stimulate the arousal systems in the brain, including the brain-stem reticular activating system, which is a core sleep-energy center and part of the subcortical-cortical arousal axis controlling energy distribution in the brain and body [8-10]. The benefits of the techniques are a decrease in

fatigue and increase in sleep latency and well-being. Mindfulness affects a person's self-consciousness, integrative awareness and attention [16,17]. The participants experienced greater control over their bodies after performing the breathing exercise because they focused on their bodies and minds, enabling them to gain a clear awareness of their inner and outer worlds and to relax completely both physically and spiritually. This finding is consistent with Mackenzie et al. [18] studies.

The participants shared a supportive and positive environment because of the benefits of exercises and felt cared for and valued because of both cancer survivorship and therapeutic relationships. Receiving support from other trial participants heavily influenced the participants' experience with healing yoga because it enabled them to share useful information, encourage one another and provide emotional catharsis. This created a sense of connection among the participants, enabling them to express thoughts and feelings about how to cope with a stressful life and live with breast cancer [19].

Numerous participants practiced healing yoga independently and frequently because they experienced increased flexibility, alleviation of physical symptoms, and improved body function. The participants reported that previous problems, such as amnesia, headaches, tightness, pain in the limbs, swollen limbs, and fatigue were alleviated. This is consistent with the results of other yoga studies that reported reduced pain, anxiety and swelling; increased energy, flexibility, and physical function; a sense of control; feelings of comfort and relaxation; and the ability to maintain self-control [20-22]. In particular, a previous study reported that the participants who provided positive feedback on healing yoga stated that it enabled them to enjoy the exercise process [20]. However, three participants reported negative experiences caused by healing yoga, such as muscle ache, pain, nausea, and concern about missing sessions or not being punctual. Similar results were obtained by Kvillemo and Branstrom [20], who indicated that two patients reported problems with stiffness and back pain. Nevertheless, most of the participants were grateful that the hospital provided this yoga program, which increased their satisfaction with the overall treatment.

Healing yoga helped the participants transform feelings of passivity into activity to cope with their illness. Previous studies have indicated that participants learned to focus on positive thinking, learned how to forgive, and found meaning in their lives [6,22]. Our study revealed that most participants learned to slow the pace of everyday life, redirect their thoughts to positive aspects, and value themselves as a first priority. Through this program, the participants gradually regained confidence and perceived a new sense of control over their well-being. As the results, the healing yoga seemed to help patients with breast cancer focus their attention on their bodies and renew awareness to their inner and outer well-being. Further qualitative research should focus on understanding the perceived differences between group yoga and individual yoga or should compare yoga with other exercises.

Limitations

A weakness in this study was that only 11 of 30 possible interviewees (these randomized into the intervention group). This could be a result of the fact that the interview was a voluntary additional part of the experimental study. It is possible that those who decided to participate in the interviews were more positive to the healing yoga than those who declined. A difficulty with interview study

is that the questions can be biasing the answers and influence the responses collected. The participants' knowledge about the expected effect of the healing yoga can also influence both the experience of the interview and the interview responses.

Implications for Practice

Based on the positive experiences of the patients with breast cancer who participated in the healing yoga, health care professionals should consider implementing healing yoga in clinical practice and nursing education. Although individuals may suffer different conditions and symptoms from chemotherapy, the improvements in the neurobiological changes due to healing yoga can have implications in mood, anxiety, fatigue and an over-all sense of well-being among clinical populations. Especially, these improvements in a sense of well-being remain a universal demand. We suggest that healing yoga be a complementary therapy for clinical practice in oncology. Future studies should investigate the importance of following elements on the influence of the healing yoga, such as reflections on patients' education level, religion, treatment how these factors influence on the patients' own perceptions; reflections on the intensity, frequency and duration of yoga program how it can the patients' perception of fatigue. The findings of this study provide as a reference for nursing education, research design, and clinical practice that can be applied in healing yoga schemes for cancer patients. The format and the amount of time required by the participants make this intervention most suitable for highly motivated participants with interest in the use of mind-body-spiritual relaxation techniques.

Conclusion

This study gained insight into patients with breast cancer through process of healing yoga. Four themes emerged from the data: transforming from concern to confidence; regaining a sense of belonging; receiving experience and satisfaction; and leading the way for life. Participants expressed positive experiences both of participating in the healing yoga and of the perceived effect of the healing yoga. Moreover, the participants perceived the healing yoga approach to exert a crucial influence on fatigued breast cancer patients. This includes a suitable support level of personal challenge. The study findings strengthen the experience of healing yoga to support the long-term needs of breast cancer patients. However, this study provides insight into the remarkable changes in the bodies and mind of breast cancer patients, as well as the perspectives, beliefs, values and life lessons that they gained through healing yoga.

References

1. Health Organization (2011) The World Health Report 2011. Media centre, World Health Organization.
2. Denduluri N, Somerfield MR, Wolff AC (2016) Selection of optimal adjuvant chemotherapy regimens for early breast cancer and adjuvant targeted therapy for her2-positive breast cancers: an American society of clinical oncology guideline adaptation of the cancer care Ontario clinical practice guideline summary. *J Oncol Pract* 12: 485-488.
3. Lorusso D, Bria E, Costantini A, Di Maio M, Rosti G, et al. (2017) Patients' perception of chemotherapy side effects: Expectations, doctor-patient communication and impact on quality of life - An Italian survey. *Eur J Cancer Care*. 26.
4. Mortimer JE, Waliyan S, Dieli-Conwright CM et al. (2017) Objective physical and mental markers of self-reported fatigue in women undergoing (neo)adjuvant chemotherapy for early-stage breast cancer. *Cancer*.

5. Thompson PI (2007) The relationship of fatigue and meaning in life in breast cancer survivors. *Oncol Nurs Forum* 34: 653-660.
6. Leigh M, Roth E, Galvin D, Mary FB, Ellen H, et al. (2012) The impact of resistive exercise and psychosocial support on quality of life and fatigue in cancer survivors via utilization of a community-based program: A case series. *Rehabil Oncol* 30: 12-17.
7. Noelia GC, Angelica AG, Irene CV, Carolina FL, Lourdes DR, et al. (2014) Depressed mood in breast cancer survivors: Associations with physical activity, cancer-related fatigue, quality of life and fitness level. *Eur J Oncol Nurs* 18: 206-210.
8. Desai R, Tailor A, Bhatt T (2015) Effects of yoga on brain waves and structural activation: A review. *Complement Ther Clin Pract* 21: 112-118.
9. Vialatte FB, Bakardjian H, Prasad R, Cichocki A (2009) EEG paroxysmal gamma waves during Bhramari Pranayama: A yoga breathing technique. *Conscious Cogn* 18: 977-988.
10. Field T, Diego M, Hernandez-Reif M (2010) Tai chi/yoga effects on anxiety, heart rate, EEG and math computations. *Complement Ther Clin Pract* 16: 235-238.
11. Chen SM, Lin WL, Lin SH, Chang HY (2011) Cancer nursing care: A systematic review of yoga intervention. *J Nurs Healthc Res* 7: 151-160.
12. Jacquelyn B, Holly W, Mel H, Sally B, Robert B (2011) Effect of Iyengar yoga practice on fatigue and diurnal salivary cortisol concentration in breast cancer survivors. *J Am Acad Nurse Pract* 23: 135-142.
13. Taso CJ, Lin HS, Lin WL, Chen SM, Huang WT, et al. (2014) The effect of healing yoga on improving depression, anxiety and fatigue in women with breast cancer: A randomized controlled trial. *J Nurs Res* 22: 155-164.
14. Erlandson DA (1993) *Doing naturalistic inquiry: A guide to methods*. Newbury Park, Sage, California.
15. Holtby L (2004) *Healing yoga for people living with cancer*, Taylor Trade Publishing, USA.
16. Brown KW, Ryan RM, Creswell JD (2007) Mindfulness: Theoretical foundations and evidence for its salutary effects. *Psychol Inq* 18: 211-237.
17. Lindsay EK, Creswell JD (2017) Mechanisms of mindfulness training: Monitor and acceptance theory (MAT). *Clin Psychol Rev* 51: 48-59.
18. Mackenzie MJ, Wurz AJ, Yamauchi Y, Pires LA, Culos-Reed SN (2016) Yoga helps put the pieces back together: a qualitative exploration of a community-based yoga program for cancer survivors. *Evid Based Complement Alternat Med* 2016: 1832515.
19. Fiori F, Aglioti SM, David N (2017) Interactions between body and social awareness in yoga. *J Altern Complement Med* 23: 227-233.
20. Kvillemo P, Bränström R (2011) Experiences of a mindfulness-based stress-reduction intervention among patients with cancer. *Cancer Nurs* 34: 24-31.
21. Pan Y, Yang K, Wang Y, Zhang L, Liang H (2017) Could yoga practice improve treatment-related side effects and quality of life for women with breast cancer? A systematic review and meta-analysis. *Asia Pac J Clin Oncol* 13: e79-e95.
22. Greysen HM, Greysen SR, Lee KA, Hong OS, Katz P, et al. (2017) A qualitative study exploring community yoga practice in adults with rheumatoid arthritis. *J Altern Complement Med*.