

ORIGINAL ARTICLE

The desire to survive: The adaptation process of adult cancer patients undergoing radiotherapy

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Abstract

Aim: Radiotherapy is one of the primary treatment strategies for cancer. However, patients not only deal with the side-effects of radiotherapy, but they must also endure the psychological distress caused by cancer. This study explores how cancer patients adapt to the treatment process when receiving radiotherapy.

Methods: This study used a grounded theory approach, and eight in-depth interviews were conducted with newly diagnosed cancer patients who received radiotherapy as a primary treatment.

Results: The core category that emerged from this study was “the desire to survive”. The categories and subcategories that emerged from the data include facing unknown situations (e.g. searching for relevant information and decision-making considerations, and listening to healthcare professionals’ suggestions), experiencing the pain of treatment (e.g. tolerating side-effects, tolerating inconvenience during the treatment, accepting support during the treatment, and adjusting lifestyles), and chances to extend life (e.g. accepting fate, determination to undergo the treatment, and adjusting negative emotions).

Conclusion: The study results provide a better understanding of the experiences of cancer patients undergoing radiotherapy. Healthcare professionals should provide effective medical management for side-effects and psychological support to cancer patients during the journey of radiotherapy.

Key words: cancer, qualitative research, radiotherapy.

INTRODUCTION

Radiotherapy has been used to treat cancer since the 19th century. More than 70% of all cancer patients have undergone radiotherapy during their cancer treatment (Khoroshkov, 2006). However, the use of radiotherapy to treat cancer still involves the harming of normal tissues. For example, most breast cancer patients are concerned with experiencing severe skin reactions and pain (Halkett, Kristjanson, & Lobb, 2008; Sjøvall, Strombeck, Lofgren, Bendahl, & Gunnars, 2010). Furthermore, external radiotherapy to the head and neck

regions can cause moderate to severe dermatitis, oral mucositis, xerostomia, and difficulty swallowing, resulting in changes in appetite (Cheng, 2007; Giro *et al.*, 2009; Ogama *et al.*, 2010; Wong *et al.*, 2006). The most common side-effect for cervical cancer patients who are receiving radiotherapy to the pelvis is diarrhea. Some patients experience incontinence that forces them to be virtually housebound. It may have a significant impact on their quality of life (Abayomi, Kirwan, Hackett, & Bagnall, 2005; Vaz *et al.*, 2008).

Several studies have found that uncomfortable experiences are not limited to pain. Cancer patients use terms such as “difficult” or “unbearable” to describe the experiences of radiotherapy (Sjøvall *et al.*, 2010; So & Chui, 2007). In addition to suffering from side-effects during radiotherapy, patients must manage the fear and mental distress that cancer causes (Antoni *et al.*, 2009; Chen & Chang, 2012; So & Chui, 2007). Turner, Muers,

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Haward, and Mulley (2007) also reported that cancer patients of all ages have higher levels of anxiety and depression while receiving radiotherapy.

The cancer survivor adaptation model considers cancer patients' quality of life outcomes relative to their physical, emotional, cognitive, and spiritual adjustments (Naus, Ishler, Parrott, & Kovacs, 2009). Previous studies have explored the coping process of patients with cancer, and much research has focused on the physical and psychological impacts of radiotherapy on patients (Chen & Chang, 2012; Giro *et al.*, 2009; Kim *et al.*, 2009; Vaz *et al.*, 2008). However, there is less research on how cancer patients adapt to the process of radiotherapy. Therefore, this study explores how cancer patients adapt to the treatment process while undergoing radiotherapy.

METHODS

Study design

Grounded theory explores basic social processes to understand the multiple interactions that may occur in each process (Glaser & Strauss, 1967; Heath & Cowley, 2004; Wang, Windsor, & Yates, 2012). The methods of grounded theory include open coding, axial coding, selective coding, the comparative analyzing of data, theoretical sampling, and memo writing (Glaser & Strauss, 1967; Jeon, 2004). In this study, grounded theory was used to explore the adaptation processes of adult cancer patients undergoing radiotherapy. This study reconstructs the overall context and adaptation processes when cancer patients receive radiotherapy.

Setting and samples

This study was conducted in a cancer center in the middle of Taiwan. Eligibility criteria included newly diagnosed cancer patients who had completed radiotherapy courses (average 6–8 weeks with 30–40 fractions), were at least 18 years old, and were able to speak Mandarin or Taiwanese. Exclusion criteria included patients receiving palliative radiotherapy and patients who were unable to communicate.

Eight participants comprised this study. The sample constituted four men and four women. Ages ranged 42–71 years with a mean age of 56 years. Of the sample, six were married and two widowed. One participant was uneducated, six participants had finished either elementary or junior high school, and one had an education level of senior high school. The diagnoses of the participants included nasopharyngeal cancer, tonsil

cancer, esophageal cancer, cervical cancer, and lung cancer. The present authors identify the eight participants by pseudonyms, family names, such as Mr Chao, in order to protect the participants' anonymity and confidentiality. The details of the participants' demographics are shown in Table 1.

Ethical considerations

Research studies in Taiwan are required to obtain the ethical approval either from the university review board or the hospital institutional review board. This study was approved by the hospital institutional review board (reference no. 人9818). Informed consent to participate was obtained from all study participants. Any information provided was treated as strictly confidential.

Measurements

The open-ended questions were as follows: (i) Can you talk about your thoughts when the doctor told you that your disease required radiotherapy? (ii) Could you please talk about what you did to prepare when you decided to accept the radiotherapy? (iii) Please tell me how you feel when receiving radiation therapy? (iv) Could you please talk about any discomfort and how you manage these problems during the treatment?

Data collection

Semistructured in-depth interviews were conducted after patients had finished radiotherapy therapy. Theoretical sampling was used in the process of data collection. The goals were to keep asking questions and compare data dimensions among categories (Strauss & Corbin, 1998). Data were collected until there was a richness of data or data saturation occurred, meaning that no new themes emerged related to the categories.

Data analysis

The data analysis process based on the approaches of Strauss and Corbin, and Eaves proposed techniques for grounded theory data analysis (Eaves, 2001; Strauss & Corbin, 1998). Open coding was performed after the collection of each participant's data. The taped interviews were transcribed, and then key terms were underlined in the text and coded line-by-line. Shorter code phrases were then developed to capture the main idea of what informants said. Furthermore, concepts were identified after reduced phrases were composed by grouping together phrases with the same coding. Concepts were then named and further refined into categories in an axial coding process. The paradigm model was used to

Table 1 Participants' demographics

Participant pseudonyms	Sex	Age	Marital status	Educational level	Diagnosis	Radiotherapy dose	Main side-effects
Chao	Male	48	Married	Junior high school	Nasopharyngeal cancer	72 Gy	Mucositis, mouth dryness
Chien	Male	57	Married	Elementary school	Tonsil cancer	82 Gy	Sore throat, metallic taste
Sun	Male	54	Married	Elementary school	Esophageal cancer	66 Gy	Odynophagia, dysphagia
Li	Female	62	Married	Elementary school	Cervical cancer	70 Gy	Dysuria, pain
Chou	Male	60	Widowed	Senior high school	Nasopharyngeal cancer	73 Gy	Metallic taste, moist desquamation.
Wu	Female	42	Married	Junior high school	Cervical cancer	50 Gy + brachytherapy 30 Gy	Pain, urgency of urination
Cheng	Female	71	Widowed	Uneducated	Cervical cancer	45 Gy + brachytherapy 30 Gy	Fatigue, diarrhea
Wang	Female	54	Married	Elementary school	Lung cancer	65 Gy	Sore throat, odynophagia

link each category and subcategory. Selective coding was used to identify core categories. These synthesis techniques were derived from the grounded theory data analysis method and were embedded using the constant comparison method (Eaves, 2001). The rigor of this study was maintained through close adherence to the trustworthiness and classic grounded theory techniques (Lincoln & Guba, 1985; Strauss & Corbin, 1998).

RESULTS

This study found that the adaptation processes for adult cancer patients undergoing radiotherapy are facing unknown situations, experiencing the pain of treatment, and chances to extend life. The core category is “the desire to survive”. The categories, subcategories, and core category are shown in Figure 1.

Facing unknown situations

Radiotherapy is not well-understood by the public and false messages regarding radiotherapy often circulated among patients. Many questions are raised before the start of radiation therapy. For example, Mr Chao stated, “I do not know what radiotherapy is. Is it electrotherapy?” In addition, Mr Sun stated, “I have heard that radiotherapy can cause pain and hair loss.” Further, Mr Chou commented: “I have a friend who received this treatment; the results are all of his teeth falling out; after I heard that process, I was afraid.” Two subcategories emerged when the participants experienced unknown situations; these subcategories are described below.

Searching for relevant information and decision-making considerations

Some participants searched for information on radiotherapy before beginning their treatment. For example, Mr Chao stated, “Before treatment, I first looked into the treatment environment, observing other patients and how they had been treated.” However, the female participants in this study did not independently seek further relevant information on radiotherapy. For instance, Ms Cheng commented, “I did not ask other people . . . if you hear anything [related to radiotherapy], [you] will have more worries.” Ms Wang also had similar thoughts.

Listening to healthcare professionals' suggestions

The participants wanted to use radiotherapy to control their cancer, mitigate the symptoms, and restore their health. Mr Chao stated:

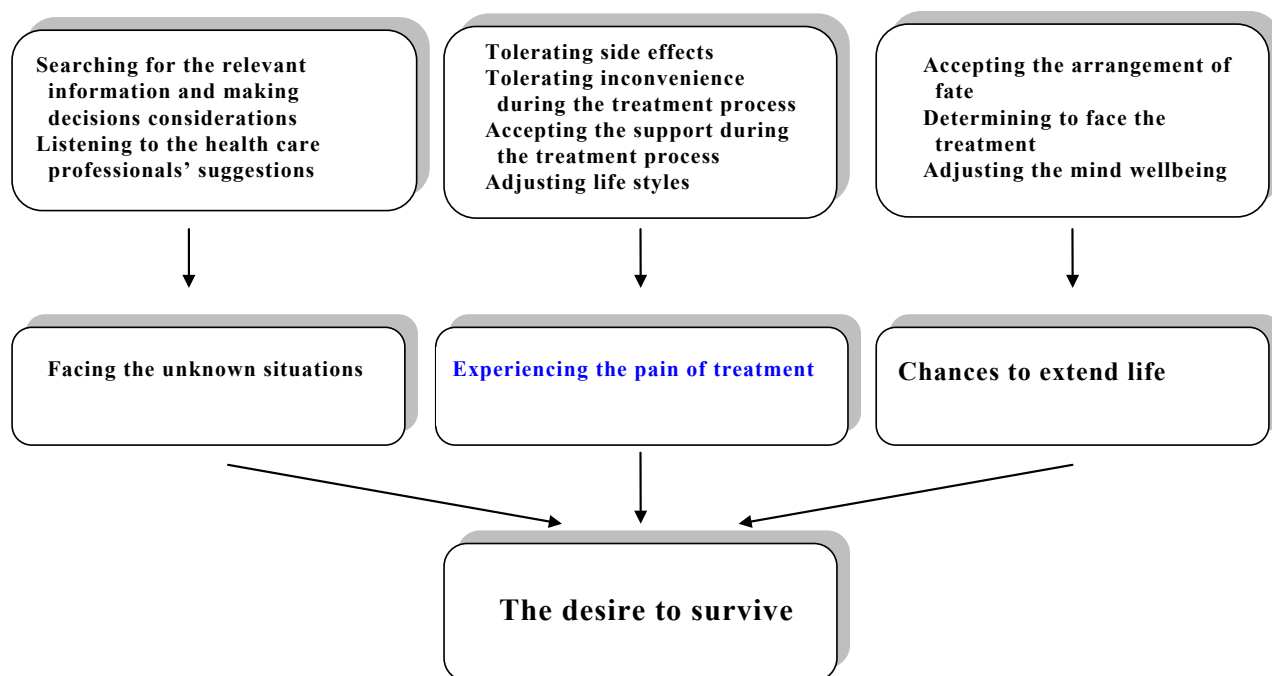


Figure 1 The adaption process of adult cancer patients undergoing radiation therapy

I have to be treated in accordance with the physician's instructions. When he told me to come, I came. I did not delay at all.

In addition, Ms Wu stated:

I am a very cooperative patient. I believe the doctors and nurses. Because I have this disease, I want it to be treated and cured.

Experiencing the pain of treatment

In the phase of undergoing radiotherapy, most patients suffer from the side-effects caused by radiotherapy and are concerned with the effectiveness of the treatment and the prospect of death. For example, Ms. Wang stated:

I could not sleep at night because of skin problems caused pain. Moreover, I had a serious sore throat [side-effects of radiotherapy], even swallowing water.

In addition, Mr Chien discussed his worries: "I am very worried, seriously worried, that the disease cannot be cured." The subcategories are discussed below.

Tolerating side-effects

The participants indicated that radiotherapy induced pain and other side-effects, and that it did not seem to be a miracle treatment. "Tolerating side-effects" was a strategy shared by all participants. For example, Mr

Chao shared his experiences: "It is a very difficult [treatment process] after 20 treatments, but my idea is to cure me as soon as possible." In addition, Mr Chien said:

To date, my sore throat does not seem to have improved from the treatment. I have had the treatment 41 times!

Tolerating inconvenience during the treatment

In addition to the distress caused by side-effects, the most common complaints by participants in the treatment process concerned the distance of the hospital. Mr Chien stated, "The round trip for me to the hospital for treatment is three hours, and it can take even longer if I miss the bus."

Accepting support during the treatment

Accompaniment and support from family members helped the participants as they experienced treatment. For example, Ms Wang stated:

Some of the medical costs are very expensive. My mother offered monetary support.

Ms Cheng discussed her situation:

I did not have a good appetite during treatment. My son and grandchildren would buy things to encourage me to eat.

Adjusting lifestyles

Participants had to constantly adjust their diet in response to the side-effects of the treatment. For example, Ms Li said:

I am concerned about my nutrition. [It] may be not enough, so I have to drink milk. I could not eat normal meals after treatment. I changed to eating sweet potato rice porridge with seaweed sauce.

Mr Chou mentioned, “I have taken some high protein nutrition supplements and have eaten bird’s nest soup [燕窩].” Furthermore, some participants had to slow down their lifestyles and adjust their work schedules to cope with treatment-induced fatigue. Ms Wang stated:

I feel that my physical strength is decreasing, so I do housework slowly. My life is not the same as before. I also quit wine drinking.

Chances to extend life

In the psychological adapting process, participants had hope and faith, and justified all of the difficulties they experienced during treatment. For example, Mr Chien stated:

You must endure to survive. There is no better way.

Ms Cheng similarly stated, “I think that it is better to try anything rather than trying nothing (死馬當活馬醫).” The process of the psychological change includes accepting fate, determination to undergo the treatment, and adjusting negative emotions.

Accepting fate

Most Chinese people’s view of life is that everything is in the lap of the deity. In this study, the participants attempted to tell themselves that this is the deity’s arrangement. Mr Chou stated, “Since I contracted this disease, I have remained optimistic; otherwise, what can I do?” Ms Cheng said:

I would say that life or death depends on destiny. I do not sigh or cry; oh, everyone will die once.

Determination to undergo the treatment

All participants showed determination to fight cancer during the treatment. For example, Ms Wu stated:

I told myself to be strong. My children are still young and so am I. I see those grandma patients, they are 60 to 70 years old; they are still so brave to receive radiotherapy. My situation is nothing compared with them.

Ms Li commented, “Because of the tumor, I urinate with difficulty . . . I have not experienced this much pain in my life . . . I think I will be cured definitely.”

Adjusting negative emotions

Participants gradually began to experience negative emotions when they underwent radiotherapy. For example, Ms Wu stated:

After two weeks of treatment I was still crying [to cope with my negative emotions] . . . then, I told myself, “Don’t worry. Just believe the doctors and nurses.

Ms Wang said, “I always told myself to look on the bright side . . . this disease can be treated.”

The core category: “The desire to survive”

Participants faced a major life-threatening disease as well as the toxic nature of anticancer treatment. However, their suffering during radiotherapy was insignificant compared to their desire to survive. For instance, Ms. Cheng said:

I am very tired after each brachytherapy. My whole body aches, but I still continue to come to the treatments.

Ms. Li said, “Only my skin burns because of the treatment, but it has already passed.”

Participants believed that without radiotherapy, they would die from cancer. Therefore, they accepted the recommendations of medical professionals. The participants used various strategies to cope with radiotherapy’s effects on the body. However, the persistent side-effects caused by radiotherapy and the impact of the drugs are substantial. Therefore, during radiotherapy, the participants suffered. However, in this study, the participants told themselves that cancer is a major obstacle in their life and that they must endure the treatment to its completion. When they passed this test, they had a chance to survive.

DISCUSSION

Cancer patients endure treatment challenges and do everything they can to increase their chances of survival (Halkett, Arnon, Scutter, & Borg, 2007). The participants in this study experienced sore throats, inability to swallow saliva, and the damage caused to their skin during radiotherapy. Because of the participants’ desire to survive, they tolerated radiotherapy. In the following section, each category and its subcategories are discussed according to the three phases.

Facing unknown situations

Most participants in this study did not have a complete understanding of radiotherapy. Consequently, negative emotions emerged prior to the start of radiotherapy.

Previous studies have found that women with breast cancer who are receiving radiotherapy have substantial feelings of fear prior to starting their treatment because of their fear of the unknown (Halkett *et al.*, 2008).

Some participants faced this unknown situation by having a positive attitude, researching treatment-related information, and listening to healthcare professionals' suggestions. In this study, female participants did not research radiotherapy-related information because they worried that it would cause them to be more fearful. This finding is similar to those of previous studies (Butow *et al.*, 2006; Johansson, Ryden, Ahlberg, & Finizia, 2012). Most women with cancer have a more passive or dependent role in the medical decision-making process (Husain, Collins, Reed, & Wyld, 2008; Wenzel & Shaha, 2008).

Experiencing the pain of treatment

The difficulties that cancer patients endure include treatment side-effects and daily inconveniences. Some participants in this study experienced oropharyngeal problems, and they used various methods to obtain the nutrition their bodies required. Several studies have shown that patients with cancers of the head and/or neck reduce their oral intake in accordance with the accumulation of radiation doses. However, patients view this suffering as a necessary part of the treatment, and adjust their intake and try to survive (McQuestion, Fitch, & Howell, 2011; Ogama *et al.*, 2010; Ogama, Suzuki, Yasui, Azenishi, & Shimizu, 2010).

In addition, Chui, Donoghue, and Chenoweth's (2005) study mentioned that Traditional Chinese beliefs on the balance between "hot" and "cold" in the body can be used to adjust patients' diets and to restore their health. However, the participants in this study did not mention this method when discussing how they adjusted their diet. Most participants did not feel alone during the radiotherapy phase, and family and friends provided them with crucial support. Previous studies have demonstrated that support from significant others for a cancer patient leads to "merger advantages" in coping with a cancer diagnosis (Morgan *et al.*, 2005).

Chances to extend their life

The psychological transformation process of the participants included the changes that occurred between the initial cancer diagnosis and radiotherapy treatment. Cancer patients find strength in adversity because they want to protect their families (McCaughan &

McKenna, 2007; Taleghanif, Yekta, & Nasrabadi, 2006). This fact is compatible with the findings of this study.

In some cultural contexts, the diagnosis of cancer is often connected with fatalism (Chui *et al.*, 2005; Hou, Lam, & Fielding, 2009; Moene, Bergbomi, & Skott, 2006). In this study, most participants believed that life and death are determined by fate, and that fate cannot be escaped. Most people tend to be resigned to their fate and to think negatively; however, people can calm themselves during adversity. Although many people believe in fate, some believe they control their fate. This attitude enables them to endure and experience life (Kuo, 2002).

CONCLUSION

This study contributes valuable knowledge to patients undergoing radiotherapy. The results of this study show the basic social processes of cancer patients undergoing radiotherapy. The adaptation process for adult cancer patients undergoing radiotherapy consists of complex interlocking physical and psychological changes. Cancer patients face unknown situations. During their treatment trajectory, they experience the pain of treatment. Cancer patients believe that radiation therapy can obtain chances to extend life. The desire to survive is the core category the present authors found in this study.

Healthcare professionals should provide effective medical management for side-effects and improve the psychological and spiritual care of cancer patients during the journey of radiotherapy.

Limitations and recommendations

The participants in this study were between 42 and 71 years old, and most had at least an elementary level of education. Therefore, the present authors' conclusions on the adaptation process for receiving radiation therapy may not be applicable to all age groups and educational levels. In addition, the participants in this study were newly diagnosed cancer patients. The process of adaptation to radiotherapy among cancer patients who are receiving radiation therapy for palliative purposes should be explored.

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REFERENCES

- Abayomi, J., Kirwan, J., Hackett, A. & Bagnall, G. (2005). A study to investigate women's experiences of radiation enteritis following radiotherapy for cervical cancer. *Journal of Human Nutrition and Dietetics*, 18, 353–363.
- Antoni, M. H., Lechner, S., Diaz, A., Vargas, S., Holley, H. & Phillips, K. (2009). Cognitive behavioral stress management effects on psychosocial and physiological adaptation in women undergoing treatment for breast cancer. *Brain, Behavior, and Immunity*, 23, 580–591.
- Butow, P. N., Solomon, M., Young, J. M., Whelan, T., Salkeld, G., Wilson, K. *et al.* (2006). Consumer impact of an interactive decision aid for rectal cancer patients offered adjuvant therapy. *Colorectal Disease*, 8, 676–682.
- Chen, P. Y. & Chang, H. C. (2012). The coping process of patients with cancer. *European Journal of Oncology Nursing*, 16, 10–16.
- Cheng, K. K.-F. (2007). Oral mucositis, dysfunction, and distress in patients undergoing cancer therapy. *Journal of Clinical Nursing*, 16, 2114–2121.
- Chui, Y. Y., Donoghue, J. & Chenoweth, L. (2005). Responses to advanced cancer: Chinese-Australians. *Journal of Advanced Nursing*, 52, 498–507.
- Eaves, Y. D. (2001). A synthesis technique for grounded theory data analysis. *Journal of Advanced Nursing*, 35, 654–663.
- Giro, C., Berger, B., Bolke, E., Ciernik, I. F., Duprez, F., Locati, L. *et al.* (2009). High rate of severe radiation dermatitis during radiation therapy with concurrent cetuximab in head and neck cancer: Results of a survey in EORTC institutes. *Radiotherapy and Oncology*, 90, 166–171.
- Glaser, B. G. & Strauss, A. L. (1967). *The discovery of grounded theory: Strategies for qualitative research*. Chicago, IL: Aldine Publishing.
- Halkett, G. K. B., Arnon, P., Scutter, S. D. & Borg, M. (2007). The phenomenon of making decisions during the experience of early breast cancer. *European Journal of Cancer Care*, 16, 322–330.
- Halkett, G. K. B., Kristjanson, L. J. & Lobb, E. A. (2008). If we get too close to your bones they'll go brittle: Women's initial fears about radiotherapy for early breast cancer. *Psycho-Oncology*, 17, 877–884.
- Heath, H. & Cowley, S. (2004). Developing a grounded theory approach: A comparison of Glaser and Strauss. *International Journal of Nursing Studies*, 41, 141–150.
- Hou, W. K., Lam, W. W. T. & Fielding, R. (2009). Adaptation process and psychosocial resources of Chinese colorectal cancer patients undergoing adjuvant treatment: A qualitative analysis. *Psycho-Oncology*, 18, 936–944.
- Husain, L. S., Collins, K., Reed, M. & Wyld, L. (2008). Choices in cancer treatment: A qualitative study of the older women's (>70 years) perspective. *Psych-Oncology*, 17, 410–416.
- Jeon, Y. H. (2004). The application of grounded theory and symbolic interactionism. *Scandinavian Journal of Caring Sciences*, 18, 249–256.
- Johansson, M., Ryden, A., Ahlberg, K. & Finizia, C. (2012). "Setting boundaries" -Mental adjustment to cancer in laryngeal cancer patients: An interview study. *European Journal of Oncology Nursing*, 16, 419–425.
- Khoroshkov, V. (2006). Radiation beam therapy evolution: From x-rays to hadrons. *Physics of Atomic Nuclei*, 69, 1724–1742.
- Kim, E., Jahan, T., Aouizerat, B. E., Dodd, M. J., Cooper, B. A., Paul, S. M. *et al.* (2009). Changes in symptom clusters in patients undergoing radiation therapy. *Supportive Care in Cancer*, 17, 1383–1391.
- Kuo, S. H. (2002). Reconstructing the Chinese Control Belief from the Heaven-Person-Analogy: An action theory perspective. *Indigenous Psychological Research in Chinese Societies*, 17, 269–307.
- Lincoln, Y. S. & Guba, E. G. (1985). *Naturalistic inquiry*. Beverly Hills, CA: Sage.
- McCaughan, E. & McKenna, H. (2007). Never-ending making sense: Towards a substantive theory of the information-seeking behavior of newly diagnosed cancer patients. *Journal of Clinical Nursing*, 16, 2096–2104.
- McQuestion, M., Fitch, M. & Howell, D. (2011). The changed meaning of food: Physical, social and emotional loss for patients having received radiation treatment for head and neck cancer. *European Journal of Oncology Nursing*, 15, 145–151.
- Moene, M., Bergbomi, I. & Skott, C. (2006). Patients' existential situation prior to colorectal surgery. *Journal of Advanced Nursing*, 54, 199–207.
- Morgan, P. D., Fogel, J., Rose, L., Barnett, K., Mock, V., Davis, B. L. *et al.* (2005). African American couples merging strengths to successfully cope with breast cancer. *Oncology Nursing Forum*, 32, 633–640.
- Naus, M. J., Ishler, M. D., Parrott, C. E. & Kovacs, S. A. (2009). Cancer Survivor Adaptation Model: Conceptualizing cancer as a chronic illness. *Journal of Clinical Psychology*, 65, 1350–1359.
- Ogama, N., Suzuki, S., Umeshita, K., Kobayashi, T., Kaneko, S., Kato, S. *et al.* (2010). Appetite and adverse effects associated with radiation therapy in patients with head and neck cancer. *European Journal of Oncology Nursing*, 14, 3–10.
- Ogama, N., Suzuki, S., Yasui, Y., Azenishi, K. & Shimizu, Y. (2010). Analysis of causal models of diet for patients with head and neck cancer receiving radiation therapy. *European Journal of Oncology Nursing*, 14, 291–298.
- Sjovall, K., Strombeck, A., Lofgren, A., Bendahl, P. O. & Gunnars, B. (2010). Adjuvant radiotherapy of women with breast cancer-Information, support and side-effects. *European Journal of Oncology Nursing*, 14, 147–153.

- So, W. K. W. & Chui, Y. Y. (2007). Women's experience of internal radiation treatment for uterine cervical cancer. *Journal of Advanced Nursing*, 60, 154–161.
- Strauss, A. & Corbin, J. (1998). *Basics of qualitative research: Techniques and procedures for developing grounded theory* (2nd edn). Thousand Oaks, CA: Sage.
- Taleghanif, F., Yekta, P. Z. & Nasrabadi, A. N. (2006). Coping with breast cancer in newly diagnosed Iranian women. *Journal of Advanced Nursing*, 54, 265–272.
- Turner, N. J., Muers, M. F., Haward, R. A. & Mulley, G. P. (2007). Psychological distress and concerns of elderly patients treated with palliative radiotherapy for lung cancer. *Psycho-Oncology*, 16, 707–713.
- Vaz, A. F., Pinto-Neto, A. M., Conde, D. M., Costa-Paiva, L., Morais, S. S. & Esteves, S. B. (2008). Quality of life and acute toxicity of radiotherapy in women with gynecologic cancer: A prospective longitudinal study. *Archives of Gynecology and Obstetrics*, 278, 215–223.
- Wang, S. Y., Windsor, C. & Yates, P. (2012). Introduction to grounded theory. *The Journal of Nursing*, 59, 91–95.
- Wenzel, J. & Shaha, M. (2008). Experiencing cancer treatment decision-making in managed care. *Journal of Advanced Nursing*, 63, 455–464.
- Wong, P. C., Dodd, M. J., Miaskowski, C., Paul, S. M., Bank, K. A., Shiba, G. H. *et al.* (2006). Mucositis pain induced by radiation therapy: prevalence, severity, and use of self-care behaviors. *Journal of Pain and Symptom Management*, 32, 27–37.