

Post-traumatic growth: a qualitative analysis of experiences regarding positive psychological changes among Iranian women with breast cancerEsmat Mehrabi¹, Sepideh Hajian², Masoomeh Simbar³, Mohammad Houshyari⁴, Farid Zayeri⁵

¹ Ph.D. Candidate of Reproductive Health, Department of Midwifery & Reproductive Health, Faculty of Nursing & Midwifery, Shahid Beheshti University of Medical Sciences, Tehran, Iran

² Ph.D. of Reproductive Health, Assistant Professor, Department of Midwifery & Reproductive Health, Faculty of Nursing & Midwifery, Shahid Beheshti University of Medical Sciences, Tehran, Iran

³ Ph.D. of Reproductive Health, Associate Professor, Department of Midwifery & Reproductive Health, Faculty of Nursing & Midwifery, Shahid Beheshti University of Medical Sciences, Tehran, Iran

⁴ Oncologist, Assistant Professor, Shohada-e-Tajrish Hospital, Department of Radiation Oncology, Faculty of Medicine, Shahid Beheshti University of Medical Sciences, Tehran, Iran

⁵ Ph.D. of Statistics, Associate Professor, Department of Biostatistics, Shahid Beheshti University of Medical Sciences, Tehran, Iran

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Introduction: Cancer diagnosis is an extremely stressful experience that has a profound impact on a patient's life. Cancer related perceived stress and complications may lead to the experience of positive psychological changes and post-traumatic growth (PTG). Since there is lack of qualitative research assessing the experience of PTG in Iranian women with breast cancer, this study aims to investigate experiences relating to PTG of Iranian women.

Methods: A qualitative phenomenological approach was selected to explore the experiences of Iranian women with PTG. Data were gathered using semi-structured, in-depth interviews with 18 eligible patients, which were then transcribed and analyzed using Van Manen's thematic analysis approach. Data gathering and analyses were conducted simultaneously. In addition, MAXQDA software was used for data management.

Results: In this study, the participants were 18 Iranian women between the ages of 31 and 65 years. Four prominent themes were extracted from the participant's statements that demonstrated the Iranian women's experiences with breast cancer-induced psychological growth and maturity: 1) appreciate of life, 2) stability, 3) spiritual prosperity, and 4) effective interaction.

Conclusion: Health care professionals are strongly recommended to design robust and timely intervention programs to improving PTG among breast cancer survivors and reduce their perceived distress resulting from cancer diagnosis.

Keywords: Breast cancer, Post-traumatic growth, Qualitative research

1. Introduction

Breast cancer (BC) survival rates are increasing globally due to advances in early diagnosis and treatment. It is commonly acknowledged in the literature that cancer diagnosis is an extremely stressful experience and may have a profound impact on a patient's life. Survivors have to struggle with many psychosocial complications related to cancer diagnoses and its treatments. In many breast cancer patients, feelings of uncertainty about the future and other psychological problems are experienced, as well as feelings of guilt, regret, and posttraumatic stress disorder (PTSD). Generally, cancer is considered to be a chronic persistent stressor that may have major impacts in patient's life, especially in younger patients. People who are diagnosed with cancer often experienced unfavorable

Corresponding author:

Assistant Professor Dr. Sepideh Hajian. Department of Midwifery & Reproductive Health, Faculty of Nursing & Midwifery, Shahid Beheshti University of Medical Sciences, Tehran, Iran.

Tel: +98.2188202512, Fax: +98.2188202512, Email: s.hajian@sbmu.ac.ir

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experiences, including confronting with their own mortality; in addition, cancer treatment disrupts a patient's life for a prolonged period. Most patients encounter problems resulting in perceived post-traumatic stresses following cancer diagnosis. Psychological problems in such patients may lead to a decrease in quality of life. The quality of life of these patients may be affected by the way the patients choose to adjust to their situations. On the other hand, the cancer related perceived stress and complications may lead to positive psychological changes and post-traumatic growth (PTG) in a different life domain. In 1996, Tedeschi and Calhoun described PTG as "positive psychological change experienced as a result of the struggle with highly challenging life circumstances". In addition, it has been emphasized that PTG may lead patients adopt a better life style and obtain psychosocial wellbeing, higher quality of life (QOL), and better adjustment to life with cancer. It is also reported that positive changes experienced by the patient with cancer may result in a patient's adjustment. PTG is also thought of as an issue with two aspects, the constructive and the illusory aspects, which are expected to correlate with healthy and weak adjustment, respectively. These aspects of PTG are directly related to patients' ability to use coping strategies when confronted with a stressful life event. Generally, the significant impact of problem-focused coping strategies is acknowledged in the literature. However, the use of coping strategies among women with breast cancer is different and depends on several issues, including the stage of the cancer, the type of therapy, the individual's culture, and perceptions about the disease. These are issues that may affect the strategies patients use to psychologically adjust to their condition. Increasing education of PTG in people with BC could enable health care providers to prepare appropriate psychosocial intervention and empowerment programs to facilitate PTG and promote women's adjustment to their situations. Despite increasing interest and research in this field, studies have been mainly conducted in Western countries and there is restricted information on the experience of PTG in cancer patients from other cultures, including Iranian Muslim women. In addition, studies mostly were carried out with quantitative research methods and, therefore, reflect a lack of deep understanding about lived experiences regarding PTG among Iranian women with breast cancer. Hence, the present study was aimed to deeply investigate the patients' experiences about perceived PTG.

2. Material and Methods

2.1. Research design and setting

A qualitative phenomenological approach was selected to explore lived experiences of PTG the Iranian women after they were diagnosed with breast cancer. A qualitative phenomenological approach helps to define living experiences, interpret the meaning of phenomena, and enhances our perception of human experiences. The present study was performed in 2014 with Iranian women diagnosed with breast cancer who had completed the treatment period and were referred to the oncology clinics at Shohad-e-Tajrish and Tehranpars hospital in Tehran, Iran. The study's inclusion criteria included being an Iranian woman with a confirmed histological diagnosis of a primary breast malignant tumor, who had finished the adjuvant therapy within 3-6 months prior to the study and had been referred to the Radiation Oncology Clinic (in a governmental and a private hospital) in Tehran, Iran. In addition the study's exclusion criteria included having a metastatic tumor, previous history of psychological disorders in the past six months, and unwillingness to participate in our study. Women were selected through purposive sampling. The sample size in this qualitative research was essentially based on the ideologies of data saturation, because numbers are not important in ensuring adequate samples since the aim of qualitative sampling is depth of data, not tentative generalizations. Data was collected until analysis no longer indicated anything new or different in the samples. Nevertheless, phenomenology does not look for sameness or repetitive patterns. Rather, the goal of phenomenology is to determine what is singular, and a singular theme or concept may only be observed once in research data. In this study, we attempted to continue the interviews until nothing new was obtained from them.

2.2. Data collection

A meeting was coordinated with the oncologist at the hospitals and then patients who met the study inclusion criteria were met with and interviewed. All participants were informed about the purpose of the study, and written consent was obtained from the women who were willing to participate in the project. It should be noted that there were no women unwilling to be interviewed. Data were gathered using semi-structured, in-depth, face to face interviews with 18 eligible patients by the main researcher. The interviews were conducted in a quiet room in the radiation oncology wards at the two hospitals, and the researcher interacted with the participants by using open-ended questions and by asking permission from the patients to record the conversation. All interviews were recorded. Each interview took approximately 40-65 minutes. Participant were informed that they could discontinue the interview at any time to prevent causing unwanted emotional effects on participants. Four interview was done in two session based on the participant's preference. At the beginning of each interview, the women were asked to explain her experiences about

perceived positive changes after getting cancer. Then, the researcher guided the direction of the interview into the following topics- the woman's idea about the meaning of psychological growth after the cancer, and her experiences about it. After the patients addressed the above topics, they were asked the following questions to get additional data and information: "Would you explain more about this?" and "What do you mean?"

2.3. Data analysis

The interviews were transcribed and analyzed using Van Manen's thematic analysis approach. Data gathering and analyses were conducted simultaneously, and, as the initial coding was done, it was decided to conduct subsequent interviews (three subsequent interviews were conducted). In addition, MAXQDA software was used for data management. Using the hermeneutic phenomenological approach enabled us to emphasize women's life experiences through their description of their experiences regarding cancer-related challenges and the coping ways they used to adjust to the complications. Van Manen is a prominent researcher in the field of phenomenological study that proposed six research activities as a methodological structure to guide hermeneutic phenomenology research in 2001. These activities or steps of research design (qualitative phenomenological Van Manen methodologic design) were used in this study. They are as follows:

- 1) Turning to the nature of the lived experience.
- 2) Investigating lived experiences.
- 3) Reflecting on the essential themes.
- 4) Describing the phenomenon through the art of writing and rewriting.
- 5) Maintaining a strong and oriented relationship with the phenomenon.
- 6) Balancing the research context by considering the parts and the whole.

The transcribed interviews were analyzed according to activities 3–6 of the methodology of Van Manen. According to activity 3, each transcribed interview was considered as a whole and was read several times. Then, the entire interview was summarized as a short description in a few sentences or paragraphs (holistic thematic analysis). Then, the thematic statements were isolated using a selective approach. For this reason, the transcriptions were read constantly to recognize statement(s) that seemed particularly essential and that could reveal the core concepts of the experiences the women had in adjusting to breast cancer. These statements were highlighted. After extraction of the general themes, similar themes were clustered. Then, in line with activity 4, we used the art of writing and rewriting to bring the studied phenomenon into the written word. In activity 5, the researchers tried to gain a deep understanding of the phenomenon by concentrating on research question. In activity 6, using the hermeneutic method, the researchers repeatedly referred to the whole and parts of the text to analyze how they were connected. The five criteria that Guba and Lincoln identified for evaluating qualitative inquiries, credibility, dependability, confirmability, transformability, and authenticity, were used in this study to manage data and increase the trustworthiness of the qualitative data. We determined the trustworthiness of the attained data through prolonged and deep engagement with the data (interview, observation, memo-ing, and accurate documentation of the research stages). For obtaining credibility, member and peer checking were done with participants and research team, respectively. In addition, we tried to searching for evidence that would refute the selection of participants with maximum diversity with regards to type of treatment (mastectomy or lumpectomy), age, educational level, occupation, and marital status.

2.4. Ethical considerations

The ethical considerations of present study were approved by the deputy of research (Ethical Cod: sbmu2.rec.1394.23). Participant were informed that they could discontinue the interview at any time to prevent unwanted emotional effects. Interviews were stopped based on participants' willingness and emotional situation and continued when they chose. Four interview were done in two sessions, based on the participant's situation. All the interviews were performed in a private room to provide more conformation between participants.

3. Results

In this study, 18 Iranian women participated in the interviews. Their ages ranged between 31 and 65 year old. The socio-demographic data of the women involved is presented in Table 1. Generally, the findings of the study highlighted the important aspects of the women's experiences about their perceived PTG. Four prominent themes were extracted from the interviews that explain the Iranian women's experiences with breast cancer-induced psychological growth and maturity, which included appreciation of life, stability, spiritual prosperity, and effective interaction, which are presented in Table 2.

Table 1. Demographic characteristics of women with breast cancer

| Participants no. | Educational Level | Surgery Type | Job | Marital status |
|------------------|---------------------|--------------|------------|----------------|
| P*1 | Illiterate | Mastectomy | House wife | Married |
| P2 | University | Mastectomy | Employee | Married |
| P3 | Primary school | Mastectomy | House wife | Married |
| P4 | Illiterate | Lumpectomy | House wife | Married |
| P5 | High school Diploma | Mastectomy | House wife | Married |
| P6 | High school Diploma | Mastectomy | Employee | Single |
| P7 | Primary | Mastectomy | House wife | Married |
| P8 | High school Diploma | Mastectomy | House wife | Married |
| P9 | University | Lumpectomy | Employee | Married |
| P10 | Illiterate | Mastectomy | House wife | Married |
| P11 | Primary school | Mastectomy | House wife | Married |
| P12 | Primary school | Lumpectomy | House wife | Married |
| P13 | High school Diploma | Lumpectomy | Employee | Widow |
| P14 | High school Diploma | Mastectomy | Employee | Married |
| P15 | High school Diploma | Lumpectomy | Employee | Married |
| P16 | Primary school | Mastectomy | House wife | Married |
| P17 | University | Mastectomy | Employee | Married |
| P18 | High school Diploma | Mastectomy | Employee | Widow |

*Patient

Table 2. Themes and sub-themes from participants' transcriptions

| Themes | Sub-themes |
|-----------------------|--------------------------------------|
| Appreciate of life | Attitude improvement |
| | Re-evaluation of the meaning of life |
| Stability | Heightened tolerance |
| | Being more resistant |
| Spiritual prosperity | Thanksgiving |
| | Compensation |
| | Seeking spiritual help |
| Effective interaction | Mutual influence |
| | Empathy with peers |

3.1. Appreciation of life

Having breast cancer resulted in evolution and psychological growth among most of the participants. The women mentioned that they experienced positive changes in their attitudes about life. They also re-evaluated their perceptions of the meaning of life. The women reported that life became more valuable to them after they were diagnosed with breast cancer. The main theme, appreciation of life involve two sub-themes- attitude improvement and re-evaluation of the meaning of life.

1) Attitude improvement:

Being diagnosed with cancer caused changes in some patients' attitudes towards life. They mentioned that they now realized that they previously had incorrect perceptions about some unimportant problems. This new situation caused improvement in their attitude about life and everything associated with it. They mentioned tried to enjoying life by concentrating on meaningful values of life. A woman said "Now I think I had a wrong attitude to the life. I magnified the value of all of unimportant thing in my life before I got cancer. I decide to live more comfortable and don't strike anything. I knew life is short and I can enjoy from it." {p5}

2) Re-evaluation of the meaning of life:

Some women remarked that their values changed after their cancer diagnosis. Most of them expressed that having cancer caused them to better understanding what the true values of life are, such as health and living with family. A participant stated "I understand the value of life along with my spouse and children. Also I perceived health is valuable and we should appreciate it." {p15}

3.2. *Stability*

Most of the women described perceived enhancement of their stability in facing life stressors after experience with breast cancer. This main theme include two sub-themes- heightened tolerance and being more resistant.

1) Heightened tolerance:

Some patients expressed that experiencing cancer lead to heightened tolerance in their life. They mentioned they were able to demonstrate more tolerance when faced with a challenging situation. One participant said "I feel my tolerance increased after experience of disease. I think I can tolerate any event that occurs for me." {p12}

2) Being more resistant:

Some women mentioned that they felt more resistance after cancer. This increased resistance enabled them to adjust with any event in their life period. A woman stated "I feel, I am able to adjust myself with everything in the life. I think I get more resistant after cancer and its terrible experiences (such as chemotherapy side effects)" {p4}.

3.3. *Spiritual prosperity*

All of the participants in this study were Muslim. Most of them experienced spiritual prosperity after the challenges of cancer. They believed that they should thank GOD for all the things they have. Some of them said they recognized previous wrong behavior and tried to compensate. Some women declared they tried more to trust in GOD and increasingly seek out spiritual help.

1) Thanksgiving:

Most of patients mentioned they began to thank GOD for their regaining health and surviving cancer, and to pray more than before their diagnosis. Some women mentioned they understand the value of health and perceived health as a gift from GOD. They also said that they realized the value of all things, notably healthy children that GOD has given to them after experiencing of cancer. One women noted "I always thank GOD due to survive from this disease despite remaining side effects and disabilities" {p18}, and "I realized the value of my properties and all things that I have in my life and getting cancer reminded me to thanks GOD" {p9}.

2) Compensation:

Some of patients noted that, before the diagnosis, they focused on people's faults and other perceived failures, and, post-diagnosis, they are trying to compensate for past mistakes: "I behaved badly and wrong with my husband previous my disease, but he helped me all the time during this disease and I decided to change my behavior and compensate my previous faults." {P6}

3) Seeking spiritual help:

Some of the women emphasized that they realized the effectiveness of spirituality and religion and tried to seek help through this approach more than before their cancer diagnosis. A participant narrated the idea thusly- "I pray every time and more than before and just I want the GOD prevent me from cancer recurrence and this is the only way I feel relax." {p13}

3.4. *Effective interaction*

Most of participants narrated that they initiated different types of interaction with their family members and with other patients after experiencing cancer. They mostly tended to hold back their real feelings from their family, and especially from their children. They also realized that the same behavior was occurring in their family members. Another important positive change in participant's behaviors was the sense of responsibility and empathy towards other patients.

1) Mutual influence:

Some of the patients said that they realized the effect of their physical and spiritual situation on their family's spirituality and, therefore, tried to conceal their problems from their families; also, they understand their family members' wary behaviors. Patients said they became more cautious about the interactions and indication of feelings: "I conceal my feeling and worries from my children, also I understand they do the same thing for me and they didn't express their real feeling for me." {p8}

2) Empathy with peers:

Some patients experienced a sense of responsibility towards the other women who had breast cancer and tended to prepare information about this disease, its treatments, and the related side effects to help other patients cope. Hence,

they expressed both empathy and kinship with peers to provide aid. Patients expressed this in a variety of ways: “I saw a young woman who was worried about radiotherapy side effects. She said that didn’t know anything about this type of treatment. I spoke with her about my experiences in related to radiotherapy and tried to empathy with her. I felt she was relaxed after my talk.” {p9}

4. Discussion

This qualitative study focused on positive psychological changes experienced by Iranian women with breast cancer. As the results revealed, breast cancer affects women's health multi-dimensionally and these patient experience both negative and positive changes in their lives due to their illness. Positive changes were experienced by most participants in this study. Recurring themes in participants’ narratives include appreciate of life, stability, spiritual prosperity, and effective interaction, which are prominent aspects found within the PTG literature of psychological growth and PTG experienced by those who have faced traumatic events. Consistent with the similar findings, we found that all participants in this study experienced increased appreciation of life after the challenges of cancer. Growth in this area experienced by women with BC may therefore be described in detail as an appreciation of life for surviving of cancer, and a change in priorities and meaning of life, which could lead to a different priorities as to what is important in life. Participants related an initiation of thinking about the value of health and thanking GOD for this all the time following their cancer. Cebeci and colleagues reported the similar experiences extracted from Turkish breast cancer patient narratives. There have been numerous research efforts in this field that confirm the positive impact of spirituality and religious practices on breast cancer patients’ abilities to cope with the cancer and to obtain relief from the resulting mental anxiety. The findings of this study are consistent with the findings of the other studies that have been mentioned concerning the belief that GOD and religion help patients cope with cancer. In line with many other studies, we found that religious and spiritual approaches are key factors in Iranian women's ability to cope with breast cancer-related challenges. Discovering other aspects of life was another theme obtained in this study from the participants’ narratives. They mentioned that being diagnosed with cancer resulted in their re-evaluating the meaning of life and trying to enjoy life more by focusing on meaningful values. They noted that their priorities were changed completely after being diagnosed with cancer. These changes may be defined as positive emotional changes experienced due to adjustment with highly challenging events of life, such as cancer. Some women stated that they experienced the new sense of responsibility with regards to other patients who were in the same situation. They mentioned that they tended to empathize with the other patients. The same change was reported in a study which tried to qualitatively investigate women's experiences with positive changes resulting after breast cancer diagnosis.

5. Conclusions

In conclusion, majority of BC survivors experienced positive psychological changes and PTG in various dimensions. Iranian Muslim women mostly emphasized the positive changes that occurred in their spiritual believes and the tendency of seeking spiritual help after experiencing cancer. They credited spiritual beliefs with helping them to cope with perceived cancer related problems. Health care professionals should apply the results of present study in intervention programs which concentrate on improving psychological wellbeing, adjustment to disease diagnosis, and, ultimately, quality of life of women with BC. In addition, according the findings of present study, cultural beliefs should be considered as an important factor in designing of intervention programs. Even though the present study has contributed to the deep understanding about psychosocial changes experienced by patients after breast cancer, it has a number of limiting features (for example, the small sample size, 18 participants) that affect generalizability of the study findings. Nevertheless, we tried to achieve diversity in participants and collecting patients for the study from two main oncology treatment center in Iran to obtain trustworthy data.

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Conflict of Interest:

There is no conflict of interest to be declared.

Authors' contributions:

All authors contributed to this project and article equally. All authors read and approved the final manuscript.

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