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Investigating the relationship between self-efficacy and quality of life in breast cancer patients receiving chemical therapy

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ABSTRACT

Background: Regarding to the importance of self-efficacy and its impact on health-related behaviors, chronic disease management and quality of life, and limited studies in this field, present study tried to investigated the relationship between self-efficacy and quality of life in breast cancer patients undergoing chemotherapy in the Seyed-o-shohda hospital (Isfahan/Iran).

Methods: This descriptive-correlational study was done in Isfahan Seyed-o-shohada hospital in 2014. Statistical population included all women who had received chemical therapy because of their breast cancer (N=130). 100 participants were selected through Cochran formula and systematic sampling. Data gathering instruments included Sherer's standard questionnaire of self-efficacy and W.H.O questionnaire of quality of life (WHOQOL-BREF). The data were analyzed with use of the descriptive statistics and Kolmogorov–Smirnov test, one-way ANOVA and Pearson Correlation in SPSS 18.

Results: The average and Standard Deviation of both self-efficacy (11.00 ± 55.78) and quality of life (15.28 ± 75.91) were estimated on the average level. There was a direct meaningful relation between self-efficacy and quality of life efficiency. The results also showed that there is meaningful relation between self-efficacy and quality of life's dimensions including physical health, mental health, social relations and satisfaction with the environment.

Conclusion: Based on the significant positive relation found between self-efficacy and quality of life it's recommended to hold some training courses for these patients, have a physiologist in chemotherapy department, and prepare more palliative care to raise the breast cancer patients' self-efficacy which finally leads to a better quality of life.

Keywords: quality of life, self-efficacy, breast cancer, Isfahan

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INTRODUCTION

Today cancer is considered as the second cause of mortality in developed countries and fourth cause in the developing communities.[1] Moreover, breast cancer is the commonest among women and the most important death caused due to cancer in this gender. According to the global studies, the prevalence of cancer is about 12.5 % and it's estimated almost one out of eight women suffers from this type of cancer.[2] As the chronic nature of cancer, these patients have to deal with long-term treatments.

There have been great achievements in breast cancer treatment which have led to better tumor reactions to treatments and higher survival rates; however, these treatments bring about side effects such as swollen lymph, weakness, pain, numbness, and psychological-social disorders which can reduce cancer patients' abilities significantly.[3] In another word, patients with breast cancer face with numerous physical, psychological, and social stressful situations and feel insecure about their future, as cancer will bring in many changes in their life style, family conditions, and their social situation. These women experience treatments such as chemical therapy, radiotherapy, and surgery while they have to challenge all their unfavorable side effects such as hair loss, nausea, and sexual problems. Long-term treatment will threat the ability of these women in playing their social roles, as a housewife, mother or daughter, or as a community work force. High level of stress has a negative long-term effect on their self-esteem which eventually imposes unfavorable effects on family performance, marital role and quality of life. Cancer affects patients' quality of life in different degrees and they experience numerous challenges in the field of emotional performance during treatment and after it.[4] Therefore, investigating on quality of life in these patients is considered and important therapeutic and care indicator over the world.[5] For More than a decade, the topic "quality of life" has been considered as an important issue in healthcare services, especially in the field of chronic diseases. During recent

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years studying the quality of life in patients suffering from cancer has been put in concern. Challenges that normally affect quality of life in this group include psychological, emotional, physical, social, and economic problems caused by disease as well as diagnostic and therapeutic procedures. Although medical interventions are effective in changing quality of life, some parts of these changes are related to demographic, social, psychological, and cultural characteristics.[6] As a result, understanding concerns affecting quality of life in these patients and also factors related to quality of life will be an important priority for any healthcare team. This issue can play an important role in treatment-related decisions.[7] The World Health Organization has defined quality of life as every individual's understanding of his/her conditions regarding cultural and value system of the community in which he/she lives. This understanding will become meaningful in relation with individual's main goals, conceptions, and his perceptions of life also. This fact has a broad range which is affected by physical and psychological conditions as well as personal beliefs and social relations.[8]

It can be said that one concept in empowerment model is self-efficacy which is considered a critical variable in clinical, educational, social, developmental, health, and personal psychology. It has been also confirmed that this variable plays an important role in disease and treatment compliance, affects health activities, and is significantly useful in behavioral changes. Therefore, self-efficacy is a cognitive concept and compares behavioral needs with individual capacities.[9] Self-efficacy is an influencing factor on quality of life and emphasizes on personal understanding from skills and abilities in successful presentation of competent performance. In other words, self-efficacy influences performance, adaptive behaviors, environment selection, and conditions in which individuals try to achieve it. In this regard, self-efficacy is a confidence which is gained about performing special tasks. This concept includes level of efforts and individual performance[10] and represents personal judgment on his/her abilities to perform a task. It can also enable people to adopt behaviors which promote health, and avoid those behaviors that are harmful for health. People with high levels of self-efficacy overcome barriers through improvement of self-management skills as well as perseverance. They also resist against difficulties and control current affairs in a better way; therefore, understanding self-efficacy can lead to one which may harm it.[11] Moreover, self-efficacy is an important internal factor for long-term control of chronic diseases[12] and high scores of self-efficacies can be associated with improvement of compatibility in patients and can predict it. Later, this improved compatibility will lead to a decreased in psychological abnormalities such as stress, anxiety, and depression.[13] According to studies, people who are confident to their abilities will participate actively in programs which promote their health[11] and this participation in health programs promotes their quality of life.

Shoa' Kazemi and Mo'meni in their study titled "A comparative study of self-efficacy and ability of women with Breast Cancer and healthy" showed a positive and significant relationship between self-efficacy and its sub-scales in both groups, while there was a significant difference regarding feeling of self-efficacy and capabilities in both groups. Women suffering from breast cancer had a lower self-efficacy and compared to healthy women; therefore, disease can affect patients' self-efficacy and capabilities.[3] Fathi and colleagues performed a research to investigate the relationship between self-efficacy and quality of life based on moderating role of resiliency in cardio-vascular patients. They indicated that there is a significant and positive relationship among self-efficacy, resiliency, and quality of life at level of 0.001. Moreover, self-efficacy was a better predictor for quality of life and resiliency played a moderating role between self-efficacy and quality of life.[14] Cunningham and colleagues in a study titled "The Relationship between Perceived Self-efficacy and Quality of Life in Breast Cancer Patients" found a positive and significant relationship between self-efficacy and quality of life and also between self-efficacy and individuals' mood.[15] Akin and colleagues investigated quality of life and self-efficacy in Turkish breast cancer patients who received chemical therapy. Given the negative impacts of cancer and chemical therapy on quality of life and self-efficacy in this group of women, the authors emphasized on the importance of psycho-social intervention for these patients.[16]

Given the importance of self-efficacy and its positive effects on health behaviors, control of chronic diseases, treatment follow-up, and quality of life,[16] and regarding limitations of studies performed in our country, especially about self-efficacy in patients suffering breast cancer, this study aimed to investigate the relationship between self-efficacy and quality of life in breast cancer patients who received chemical therapy in Isfahan Seyed-o-shohada hospital. The objective of this paper was using the obtained information

to increase these patients' capabilities and self-care skills.

METHODS

This descriptive-correlational study was done in Isfahan Seyed-o-shohada hospital in 2014. Statistical population included all women suffering breast cancer who received chemical therapy in second quarter of 1393 in chemical therapy ward (N=130). 100 participants were selected using Cochran formula and purposive sampling method. Inclusion criteria were no history of psychiatric drugs (at least 3 months before study), not having another simultaneous chronic disease, no participation in psychological treatment coincident with the research, and having the minimum literacy. Data collection tools included Sherer's standard questionnaire of self-efficacy and W.H.O questionnaire of quality of life (WHOQOL-BREF). Sherer's questionnaire of self-efficacy contains 17 questions and 5 answers with scores from one to five representing completely disagree, disagree, no comments, agree, and completely agree. Higher scores showed stronger self-efficacy and lower scores represented weaker self-efficacy. The scale reliability was calculated by Barati and Bakhtiari using correlation calculation method between self-efficacy scale and internal-external control (r=0.79).[17] Its validity was also confirmed by a panel of experts. The second tool was W.H.O questionnaire of quality of life (WHOQOL-BREF) including 26 questions. The first question considers quality of life and the second one asks about health status in general. Other 24 questions are divided into four areas of physical health, psychological health, social relations, and environment satisfaction. After calculating raw scores, each area received a score from 0 to 100 based on the questionnaire's instructions. Moreover, regarding quality of life the score of 0-59 showed an inappropriate quality of life, while the score of 60-89 represented average and 12-90 appropriate qualities of life.[18] Psychiatric characteristics of Iranian questionnaire showed that this tool has favorable reliability and validity in Iranian population, so that intra-class correlation and Chronbach's alpha were higher than 0.7 in all areas. Only the area associated with social relations represented Chronbach's alpha 0.55.[19] Eventually, data was entered into SPSS version 18 and analyzed using descriptive statistics (frequency, frequency percentage, mean, and SD), Kolmogorov-Smirnov test, one-way ANOVA, and Pearson correlation test. The normality assumption was approved by Kolmogorov-Smirnov test (age= 0.806, self-efficacy p=0.718, quality of life p=0.787, physical health p=0.167, psychological health p=0.251, social relations p=0.095, and satisfaction from environment p=0.616). The ANOVA test was used to compare average score of self-efficacy and quality of life based on educational and economic situation and finally to evaluate the relation between self-efficacy and quality of life the Pearson correlation test was used.

RESULTS

Statistical analysis was done on 87 non-confounded questionnaires which were returned. Average age of patients was 48.25 + 11.93. Of 87 participants, 70 people (80.5%) were married, 14 (16.1%) divorced, and 3 (3.4) lived separately. 65 patients (74.7%) were under diploma, and 4 (4.6%) had bachelor degree. From economic point of view, 30 people (34.5%) were weak, 45 cases (51.7%) were average, and 12 cases (13.8%) were wealthy. Mean and SD of variables were as follows: self-efficacy 55.78 + 11.00, quality of life 75.91 + 15.28, physical health 48.11 + 23.22, psychological health 54.81 + 13.40, social relations 64.79 + 26.29, and satisfaction from environment 56.00 + 15.69. Quality of life was inappropriate in 11.5% of people, average in 51.7%, and appropriate in 16.1% of them.

Based on ANOVA statistical test, average score of self-efficacy of breast cancer patients showed a significant difference between different educational groups and people with higher education had higher self-efficacy. Moreover, average score of self-efficacy represented a significant statistical difference in different economical groups; in other words, those with a better economic condition possessed better self-efficacy.

According to ANOVA statistical test, average score of quality of life represented a significant difference in economic groups ($p<0.05$) and people from higher social levels had a better quality of life. However, quality of life didn't show a significant difference based on educational status ($p>0.05$). But the areas of physical health, social relations, and satisfaction from environment showed a significant difference among economic groups (table 1).

Based on Pearson correlation test, there was a direct significant relation between self-efficacy and quality of life. Moreover, the results showed a significant relation between self-efficacy and areas of physical health, psychological health, social relations, and satisfaction from environment (table 2).

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Table 1 Mean and SD of patients' self-efficacy based on some variables investigated by ANOVA test

Variable	Variables grouping	SD + mean of self-efficacy	Results
Education	Under diploma	52.84 + 10.18	P< 0.0001 F= 11.397
	Diploma	64.72 + 8.32	
	Bachelor	63.25 + 1011.17	
Economic status	Weak	52.03 + 11.60	P=0.002 F=6.457
	Average	55.88 + 9.13	
	Good	64.75 + 11.45	

Table 2 Comparing mean and SD in scores of qualities of life dimensions based on research variables

Variable	Variable grouping	SD + mean of physical health	SD + mean of psychological health	SD + mean of social health	SD + mean of satisfaction from environment	SD + mean of quality of life
Education	Under diploma	47.12 + 23.65	55.72 + 12.68	63.33 + 26.49	55.40 + 14.98	75.61 + 15.49
	Diploma	49.44 + 20.20	51.16 + 14.34	71.09 + 24.36	56.38 + 16.23	75.18 + 10.04
	Bachelor	58.25 + 31.99	56.50 + 21.18	67.25 + 33.12	64.00 + 26.15	82.00 + 25.81
Results		P= 0.631 F=0.464	P=0.433 F=0.845	P=0.666 F=0.409	P=0.569 F= 0.567	P=0.718 F=0.334
Economic status	Weak	43.06 + 23.21	52.56 + 15.39	53.47 + 30.15	47.80 + 14.76	69.00 + 16.82
	Average	47.88 + 21.25	55.20 + 11.34	71.86 + 20.91	58.15 + 12.98	78.89 + 11.40
	Good	61.58 + 26.84	59.00 + 15.19	64.66 + 28.43	68.41 + 17.47	81.33 + 20.26
Results		P= 0.064 F=2.845	P=0.363 F=1.0.27	P=0.0.29 F=3.748	P<0.001 F= 10.009	P=0.0.24 F=3.933

Table 3 Correlation of some research variables with dimensions of quality of life

Variable	Physical health	Psychological health	Social relations	Satisfaction from environment	Quality of life
Self-efficacy	P=0.002 r=0.323	P=0.002 r=0.330	P=0.036253 r=0.048	P=0.021 r=0.247	P=0.004 r=0.338

DISCUSSION

The results showed that more than half of women suffering breast cancer had average levels of self-efficacy and the score of self-efficacy showed a significant difference between economic and educational groups. However, in contrast with the current study, some surveys were done by Mirzai Alvije and colleagues as well as Mularick and colleagues and none of them showed a significant statistical difference for average score of self-efficacy in economical groups.[20,21] Moreover, the results of the present study showed that people with higher educational levels had higher self-efficacy which was consistent with the findings of Esmaili and colleagues.[22,23] Studies performed by Osborn and colleagues, Shokaizade and colleagues, Gudarzi and colleagues, Schussed and colleagues, and Sadrnia and colleagues showed that health knowledge is associated with higher self-efficacy and consequently more control on disease.[24-28] However, in Mularick and colleagues study, the score of self-efficacy on behaviors promoting physical activities did not show a significant difference in different educational groups.[21] It seems that education and knowledge increase individuals' ability in dealing with mental confusion and stressful situations which will promote self-efficacy and finally lead to success in self-care activities.

The results showed that in total, quality of life was unfavorable in 11.5 percent of patients, average in 51.7 %, and favorable in 16.1 %. Moreover, according to the results the score of quality of life was lower in physical dimension compared to other areas which is acceptable regarding the conditions of the disease. These results are consistent with the results of Rabin and colleagues[29]; however, according to the results of Monfared and colleagues the score of quality of life was lower in psychological health which is not consistent with this study.[30] According to the findings, quality of life represented a significant difference in economical groups and people with better economic conditions had a better quality of life which was consistent

with the studies done by Zayeri and colleagues as well as Panaghi and colleagues.[31,32] Therefore, it seems that independence and good economic conditions play an important role in quality of life since they maintain people in good conditions and meet necessary needs regardless the high expenses. Moreover, quality of life didn't represent a significant difference in educational groups. Williams and colleagues performed a study on American women and found a direct correlation between quality of life and high levels of education.[33] As it was expected in the present study, quality of life was higher in people with higher educational level due to their raised awareness and knowledge. According to the results, quality of life and the areas of social relations and satisfaction from environment were significantly different based on economic status which was consistent with the results of Abdollahpur and colleagues.[34] This fact emphasizes on the influence of economic factors on stability of patients' lives.

According to the findings, there was a significant and direct relation between self-efficacy and quality of life and its dimensions and those with higher self-efficacy showed a better quality of life. Tsay and colleagues same as the current study emphasized on a positive and significant relation between self-efficacy and quality of life which shows the importance of considering self-efficacy in patients' quality of life.[35] Moreover, the results obtained by Esmaili and colleagues in a study done on quality of life and its relationship with self-efficacy in hemodialysis patients showed higher self-efficacy promotes quality of life which was consistent with the present study.[22] The results of Fathi and colleagues were also consistent with this study and showed a significant and direct relation between self-efficacy and quality of life.[14]

One of the limitations of the present study was research sample which was limited to women suffering breast cancer in one chemical therapy center; therefore, findings should be generalized carefully. As a result, future studies should do sampling from several healthcare facilities in order to investigate the relation between self-efficacy and quality of life in breast cancer patients.

CONCLUSION

Given the results of this study on average levels of self-efficacy and quality of life and regarding their direct relationship, it is recommended that some steps such as training workshops for patients, presence of consultant and psychologist in chemical therapy ward, and providing healthcare facilities should be taken in order to increase patients' self-efficacy and subsequently their quality of life. This will also increase their adaptability with existing conditions.

Based on the significant positive relation found between self-efficacy and quality of life it's recommended to hold some training courses for these patients, have a physiologist in chemotherapy department, and prepare more palliative care to raise the breast cancer patients' self-efficacy which finally leads to a better quality of life.

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