Effect of skin reactions on quality of life for elderly women with breast cancer receiving chemotherapy

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Abstract

Background: Chemotherapy and new protocols in oncology have led to an increasing survival rate in women affected by breast cancer. Elderly women receiving chemotherapy for breast cancer have a negative impact on quality of life, treatment toxicity, chemotherapy tolerance and life expectancy. **Aim of the study: the current study was aimed to:** Assess effect of skin reactions on quality of life for elderly women with breast cancer receiving chemotherapy. **Subjects and Methods: Research design:** A descriptive design was utilized. **Setting:** Study was conducted at the oncology unit in outpatient clinic at Zagazig University Hospitals. **Subjects:** A purposive sample composed of 100 elderly women aged ≥60 years. **Tools of data collection:** Two tools were used to collect the study data: **Tool I**: A structured interview questionnaire to collect data on demographic characteristics, medical history, and medical data about chemotherapy regimen. **Tool II:** Skindex-29 health related quality of life instrument. **Results:** Among the studied elderly women, 40% their skin symptoms had extremely severe effect on quality of life. Also, 64% their skin symptoms had extremely severe effect on emotions and functioning, respectively with a total mean quality of life 103.72±11.6. Additionally, there was a statistically significant relations were found between quality of life and age, illiteracy, insufficient monthly income, chronic diseases, stage at diagnosis of breast cancer, and receiving ≥10 chemotherapy cycles. **Conclusion:** Extremely negative impact on quality of life prevalent among elderly women undergoing chemotherapy for breast cancer. **Recommendation:** ongoing assessment of quality of life for elderly women along with chemotherapy is a must for early intervention and better outcomes.

Keywords: Skin reactions, Quality of life, Elderly women, Breast cancer, Chemotherapy.

Introduction

Geriatric population is worldwide challenge [1]. Populations around the world are ageing at a faster pace than in the past and this demographic transition will have an impact on almost all aspects of society. Egypt's elderly people account 6.5million (3.5 million males and 3 million females) according to the [2]. Quality of life is a dynamic and multidimensional measure that includes the diagnostic effects, the impact and progression of disease treatment on normal daily activities and the rehabilitation of breast cancer women[3]. Currently in oncology quality of life is considered to be an indicator for assessing the quality of care and its management. Psychological, physical and social well-being is subjectively measured by the quality of life and provides insight into daily life during breast cancer treatment [4]. Breast cancer is a disease of the elderly women. Carcinoma of the breast is the most prevalent cancer among Egyptian women and hence, it has particularly marked familial, societal, and economic consequences[5]. Chemotherapy is a drug treatment that uses powerful chemicals to kill fast-growing cells in body. Chemotherapy is most often used to treat cancer, since cancer cells grow and multiply much more quickly than most cells in the body. Many different chemotherapy drugs are available. These drugs can be used alone or in combination to treat a wide variety of cancers as breast cancer [6]. Almost

all patients with primary breast cancer receive adjuvant cancer therapies to reduce the risk of local recurrence and metastases. While chemotherapeutic treatments help to improve long-term disease-free survival and/or overall survival in a significant proportion of patients, these therapies carries risk of side effects and some of these side effects are mild and treatable while others can cause serious complications affect quality of life [7].

According to quality-of-life studies, women are affected to a greater degree than men by cancer therapy and these therapies can affect a woman's self-image, cultural identity, femininity, sexuality, and mental health [8].

The role of the chemotherapy nurse is much respected and there is a wealth of knowledge within this group about attention to the quality of life [9]. So, quality of Life (QOL) is the degree of well-being felt by an individual or group of people. It consists of two components; a physical aspect includes such things as health, diet, as well as protection against pain and disease, and a psychological aspect include such things as stress, worry, pleasure and other positive or negative emotional states [10]. Gerontological nurses can play a vital role in attention of quality of life in older women with breast cancer undergoing chemotherapy.

The nurse should utilize new and innovative approaches to provide support and meet the psychosocial health needs. Nurses not only teach other nurses but they have also developed formal guidelines and standards to ensure safe and competent care for breast cancer women receiving chemotherapeutic agent to reduce the potential adverse reactions [11].

Significance of the study:

Breast cancer is the most common cancer type affecting women, approximately 50% of breast carcinomas occur in women ≥65 years

and >30% of breast carcinomas occurs among women >70 years. Chemotherapy treatment has various depilatory effects on the health, quality of life among elderly women and range in presentation from mild to severe or even life-threatening [12].

Aim of the study:

The current study aimed to assess effect of skin reactions on quality of life for elderly women with breast cancer receiving chemotherapy

Research Questions:

What's the effect of skin reactions on quality of life for elderly women with breast cancer receiving chemotherapy?

Subjects and methods:

Research design:

A descriptive design was used

Study setting:

The study was conducted in the oncology day clinic which located in the sixth floor in the outpatient building at Zagazig University Hospitals, Egypt.

Study subjects:

A purposive sample composed of 100 elderly women who aged 60 years or above, received at least one chemotherapy cycle with breast cancer at all stages and able to communicate was selected in the recruitment of this study.

Sample size calculation:

The sample size was calculated by using the software Epi Info package, version 6.04. It was found to be 100 elderly women; according to the expected prevalence of chemotherapy on quality of life are 34.1% (Hackbuth , 2008) [13] and number of elderly women with breast cancer who admitted to the oncology outpatient clinic in one year during 2019 which were 2400.

Tools of data collection:

Two tools were used to collect necessary data. **Tool I: a structured**

interview questionnaire which consisted of two parts;

Part (1): used to assess the demographic characteristics which included age, gender, residence, marital status, educational level, and monthly income.

Part (2): This part was covered past and current medical history of the elderly women, as for the past medical history it was composed of questions related to hypertension, diabetes mellitus, heart disease, anemia, etc. Meanwhile,the present medical history as (duration of breast cancer diagnosis, stages of breast cancer at diagnosis and family history of breast cancer). Additionally, this part also includes questions related to regimen of chemotherapy as (name of chemotherapy drugs used, method of drug administration, duration of receiving chemotherapy, number of total chemotherapy cycles, etc. The same part also include questions about dermatological side effects and follow up as (presence of skin symptoms due to chemotherapy, duration of skin symptoms presence, action taken for skin symptoms overcome, check regularly and follow up for symptoms).

Tool II: Skindex-29 health related quality of life (HRQOL) instrument [14]:

This tool was designed to measure the effects of skin reactions on quality of life. This questionnaire composed of 29 items measures the effects on three domains of HRQOL: Symptoms, emotions, and functioning. Each item asks the patient the degree to which they have been bothered by a specific aspect of their skin condition in the week before administration of the instrument. The patient answers each question by indicating a number from ١ (never bothered) to 5 (always bothered) which include the following:

- ○ Symptoms(Seven items)
- ○ Emotions (Ten items)
- ○ Functioning (Twelve items)

Scoring system:

The items checked from never to always bother were scored from 1 to 5,

respectively and the total score was ranged between (1-145). The scores of items of each category and the total scale were summed-up and the total divided by the number of items, giving a mean score. This score were converted into percent score.

The overall score reflects the participants (Skindex-29) based the following:

- ≥ 3 = very little effect on quality of life.
- 4 –10 = Mild effect on quality of life.
- 11–25 = Moderate effect on quality of life.
- 26–49 = Severe effect on quality of life.
- >50 = Extremely severe effect on quality of life.

Content validity& Reliability:

Once prepared in its initial form, the tool was presented to a panel of three experts in the field of community& obstetrics and gynecological (one professor of community, one assistant professor of community and one professor of obstetrics and gynecological health nursing) for face and content validation. They assessed the tool for clarify, relevance, comprehensiveness, and applicability. The tool was modified according to their comments and suggestions. The reliability of this tool was tested through measuring its internal consistency. In the current study, Cronbach α of GDS: SF was 0.780.

Fieldwork

Once the approval was granted to progress in the study, the researcher started to organize a schedule for collecting the data. The researcher visited study setting to be familiar with work process, time of work and observe elderly women attending the study settings to a set schedule for data collection.

The researcher used to go to the study setting for interviewing the elderly women who fulfill the criteria. The purpose of the study was explained to each elderly woman

individually, and then the elderly was asked to participate in the study. The time needed to answer the interview questionnaire ranged from 35 to 45 minutes. The researcher collected data over a period of six months from the beginning of May 2020 up to the end of October 2020; three days per week (Saturday, Monday and Wednesday) from 9.00 AM to 1.00 PM.

Pilot study:

A pilot study was carried out on 10 elderly women attending the oncology day clinic at Zagazig University Hospitals representing about 10 % of the total studied sample. The purpose of the pilot study was to test the feasibility, clarity and applicability of the study tools. Also, to appraise the necessary time for completion of the data collection tools. All participants received a clear clarification for the study purpose. Since there were no modifications in the data collection tools after conducting the pilot study, therefore the pilot study was included in the studied sample.

Administrative and ethical considerations:

The study proposal was approved by the Research Ethics Committee (REC) and the Postgraduate Committee of the Faculty of Nursing at Zagazig University in April 2020. The elderly women received a verbal description of the objectives of the study, and non-participation or withdrawal rights at any time without giving any explanations. The elderly were informed that their involvement in this study was voluntary. They were also assured that any information taken from them would be confidential and used only for research purpose.

Statistical analysis:

The statistical analysis of data was done by using the computer software of Microsoft Excel Program and Statistical Package for Social Science (SPSS) version 22. Data were presented using descriptive statistics

in the form of frequencies and percentage for categorical data, the arithmetic mean (X) and standard deviation (SD) for quantitative data.
Degrees of significance of results were considered as follows:
- P-value > 0.05 Not significant (NS)
- P-value ≤ 0.05 Significant (S)
-P-value ≤ 0.01 Highly Significant (HS).

Results:

Table (1): shows that 58% of studied elderly women with breast cancer their age were from 60 to <65 years, with mean of age 64.1±3.41 year. As regards to residence and marital status, it was obvious that 74% and 84% respectively of the elderly women were residing in rural areas and married. Likewise, 100% of the elderly women living with their relatives and 68% of them were responsible for their care.

Figure (1): demonstrates that, 70% of the elderly women their monthly income was not sufficient and only 3% were sufficient and save.

Table (2): indicates that, 96% of the elderly women suffered from chronic diseases and anemia was the most common diseases in 68.7% of them. Furthermore, 56% respectively of the elderly women diagnosed with breast cancer in duration less than one year. Moreover, 22% of the elderly women had family history of cancer, and 45.4% of them were mother.

Figure (II): reveals that, 66% of the elderly women diagnosed with breast cancer at stage II and only 3% were at stage I.

Table (3): regards to regimen of chemotherapy of the studied elderly women, 65% of the elderly women with breast cancer were treated with Taxol and intravenous route was present in 96% of the elderly women , Also, 60% and 46% of the elderly women received chemotherapy from <1 year and received <10 cycles, respectively. Moreover, 53% of the elderly women received chemotherapy cycles every week, and, 67% of the elderly women underwent surgical

intervention with a combination of chemotherapy treatment.

Table (4): reveals that, 40% of the elderly women their skin symptoms had extremely severe effect on quality of life. Also, 64% of the elderly their skin symptoms had extremely severe effect on emotions and functioning, respectively with a total mean quality of life 103.72±11.6.

Table (5): indicates statistically highly positive correlation between all quality of life domains at p- value (<0.01).

Table (6): findings also presented that, there was significant statistical positive effect from monthly income, timing of cancer diagnosis on total effect on quality of life at (p = <0.05). While, there was significant statistical negative effect from age, marital status, history of chronic diseases, stage at diagnosis of breast cancer, time since receiving chemotherapy and previous chemotherapy history on total effect on quality of life at (p = <0.05).

Discussion:

Breast cancer remains a worldwide public health dilemma and is currently the most common tumor in the world.it is life-threatening disease in females and the leading cause of mortality among women population. Amongst all the malignant diseases, breast cancer is considered as one of the leading cause of death in elderly women and accounting for 23% of all cancer deaths conducted by Jagannathan & Sharma [15].

Almost all elderly women with primary breast cancer receive adjuvant cancer therapies to reduce the risk of local recurrence and metastases. While chemotherapeutic treatments help to improve long-term disease-free survival and/or overall survival in a significant proportion of patients, these therapies carries risk of side effects and some of these side effects are mild and treatable while others can cause serious complications with significant acute and chronic toxicities conducted by Ejlertsen [16].

In term of age of the studied elderly women, the findings of this study indicated that nearly half of the studied elderly women their age were from 60 to ≥ 65 years old and the mean of age was 64.1±3.41 years. The previous findings were in the same line with a study carried in Korea by Jaewon et al. [17] who revealed that the mean age of elderly women was 59.5 years, By 2024, this number is expected to increase to 19 million with the significant portion of them being older than age 65.

In the same line, a large prospective cohort study conducted in United States of America by Mouw & Yoder[18] found that the lowest educational achievement category was related to a higher risk of cancer especially breast cancer in women . Such result might be due to a low level of knowledge regarding ways of breast cancer prevention and healthy lifestyle such as healthy diet, exercises, and how to perform breast self-examination.

In the same context, Yip et al. [19] carried out a study in Africa, which reported breast cancer mortality in countries with lower income is higher where women in low-income countries seek treatment in advanced stages of disease, when it has spread to other organs and care has a relief aspect in these people.

Considering the history of chronic diseases, the current study findings revealed that the most of the elderly women had chronic diseases and the commonly reported diseases were anemia in more than half of them, followed by hypertension and diabetes mellitus. Such results can be explained by that age-related diseases are diverse due to changes in body systems, in addition to sedentary lifestyle that increases the risk of many diseases as well as breast cancer. In the same line of this finding, a study conducted by Edwards et al. [20] in New York who demonstrated that three- quarter of the studied elderly women had at least one of the chronic

diseases as hypertension and diabetes.

Concerning the current medical history and family history, the current results revealed that slightly more than a half of the studied elderly women diagnosed with breast cancer in duration less than one year and one fifth of them had family history of breast cancer. Similarly, Akram [21] in Pakistan a study about "awareness and current knowledge of breast cancer", reported that women who have a positive family history of breast carcinoma are two to four times more likely to develop the breast cancer in duration less than one year, especially the females who are the carriers of BRCA1 or BRCA2 genes have the significant chance to develop carcinoma of breast.

Concerning using of chemotherapy drugs, the present study findings revealed that nearly two-thirds of the studied elderly women treated with Taxol (paclitaxel) and took chemotherapy protocol for a duration less than a year with a mean number of 1.82±0.45. Furthermore, approximately more than two-thirds of elderly women underwent surgical intervention with a combination of chemotherapy treatment. This is might be attributed for certain types of breast cancer, if there are tumor cells still found at the time of surgery to reduce the chances of the cancer recurrence. Chemotherapy can be given before surgery called neoadjuvant or after surgery called adjuvant.

Similarly, a study carried out in United States by Lee et al.[22] who reported that almost all elderly women with breast cancer undergo a variety of oncologic treatments including surgery, radiation, and traditional chemotherapy.

As regards to the emotional domain, the current study results showed that nearly two-thirds of the studied elderly women always humiliated by skin condition, feeling depressed from their skin condition ,being annoyed about their skin condition and angry from skin condition. Also half of the studied elderly women often worry about their skin condition and often worry that their skin condition may get worse .

This finding might be due to elderly women were more worried about their health, their families, and losing their independency or they expected to die. Similarly to this result, Ibler & Jemec [23] mentioned that skin conditions often have a psychological (emotional) impact on women with breast cancer.

In accordance with this result, Langley et al. [24] who found that skin condition affecting the social (functioning) impact of the patient's quality of life. In some cases, an overly negative response to symptoms can be indicative of low self-esteem, anxiety, unable to do either their work or other daily activities and the possibility of depression, which can warrant a referral to a mental health professional to help the patient cope, not only with their dermatological condition, but also with other matters. However, support and encouragement are often needed in order for a patient to achieve this as nurses, psychotherapists, or counselors, who may be involved in the wider healthcare circle of a patient, can also assist in this regard.

Finally, Quality of life assessment should be part in all newly introduced cytotoxic drug assessment and clinical trials of various agents to enable physicians properly document the individual impact of such treatment modalities. Therefore, focusing on the broad improvement of patient quality of life, and not just on the management of visible symptoms, may help to reduce the often excessive pressure placed on healthcare providers by patients with unrealistic expectations for improvement. This can improve the clinician's own sense of job satisfaction, as well as the overall relationship between the clinician and the patient.

Conclusion:

As regards to total domains of quality of life, the result of the current study revealed that slightly about two-thirds of the studied elderly women their skin symptoms had extremely sever effect on their emotions and functioning. Also, nearly half of the studied elderly women their skin symptoms had extremely sever effect on quality of life.

Recommendations:

In view of the study findings, the following recommendations are proposed:

- Ongoing assessment of quality of life among elderly women with breast cancer receiving chemotherapy is a must for early intervention and better outcomes.

- Psycho-educational program should be tailored for patients and their families to help them understand psychological problems, needs, and learn new ways of coping strategies.

- In every oncology department, a psychological rehabilitation unit should be available to provide psychosocial support services for patients and their families for better quality of life.

- Further studies are needed to measure the effect of quality of life program among elderly women with breast cancer receiving chemotherapy

Table (1): Demographic Characteristics of the Studied Elderly Women with Breast Cancer (N=100).

| Items	N	%
Age (year)		
• 60-<65	58	58
• 65-<70		
• ≥70	39	39
	3	3
Mean ±SD 64.1±3.41		
Residence		
• Rural	74	74
• Urban	26	26
Marital status		
• Single	2	2
• Married	84	84
• Divorced	2	2
• Widowed	12	12
Educational level		
• Illiterate	45	45
• Read &write	12	12
• Primary education	4	4
• Preparatory education	6	6
• Secondary education	25	25
• University education	8	8
Living condition		
• With relatives	100	100
Responsible for Women Care		
• Her self	68	68
• Family members	32	32

Figure (1): Percentage Distribution of the Studied Elderly Women with Breast Cancer according to their Monthly Income (n=100).

Table (2): Past Medical and Current Medical History of the Studied Elderly Women with Breast Cancer (N=100)

Items	N	%
Past medical history		
Suffering from chronic diseases		
• Yes	96	96
• No	4	4
***Types of chronic diseases (n=96)**		
• Hypertension	30	31.2
• Diabetes mellitus	18	18.8
• Heart diseases	12	12.5
• Renal diseases	4	4.2
• Respiratory diseases	10	10.4
• Arthritis	5	5.2
• Liver diseases	9	9.4
• Osteoporosis	4	4.2
• Anemia	66	68.7
• Gastro Intestinal Tract diseases	15	15.6
• Thyroid diseases	2	2.1
Current Medical History		
Duration of breast cancer diagnosis		
• <1 year	56	56
• 1-3 years	22	22
• >3 years	22	22
1.66 ± 0.72 **Mean ±SD**		
Family history of breast cancer		
• Yes	22	22
• No	78	78
kinship degree (n=22)		
• Aunt	8	36.4
• Mother	10	45.4
• Sisters	4	18.2

*Not mutually exclusive
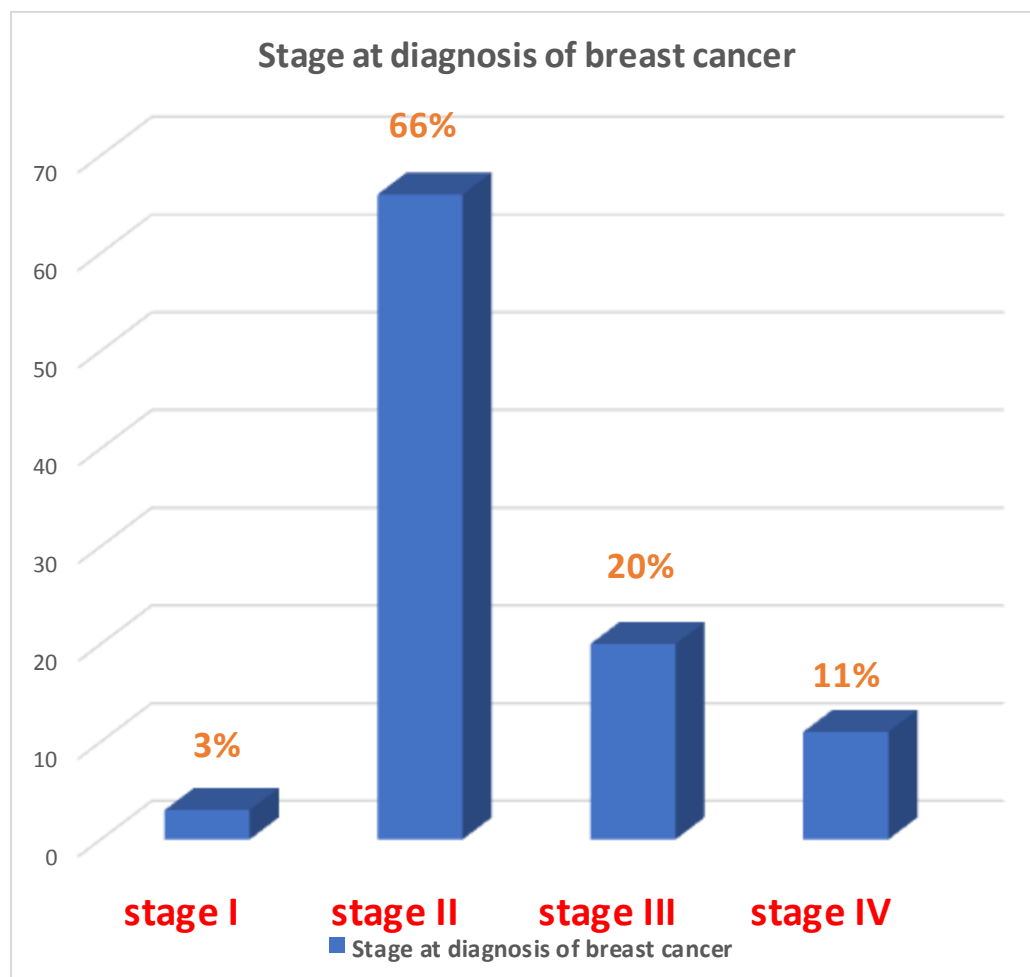
Figure II: Percentage Distribution of the Studied Elderly Women According to Their Stage at Diagnosis of Breast Cancer (n=100).

Table (3): Number and Percentage Distribution of the Studied Elderly Women According to Regimen of Chemotherapy (n=100).

Items	N	%
Name of chemotherapy druges used		
• Taxol (Paclitaxel)	65	65
• Gemzar (gemcitabine)	11	11
• Zometa (zoledronate)	11	11
• Endoxan (cyclophosphamide)	13	13
Method of drug administration		
• Intravenous(IV)	96	96
• Oral	4	4
Duration of receiving chemotherapy		
• <1 year	60	60
• 1-3 years	18	18
• >3 years	22	22
1.82 ± 0.45 Mean ±SD		
Number of total chemotherapy cycles		
• <10 cycles	46	46
• 10-20 cycles	44	44
• >20 cycles	10	10
Time between chemotherapy cycles		
• Every week	53	53
• Every three weeks	47	47
13.20 ± 7.50 Mean ±SD		
Received other treatment after chemotherapy or within chemotherapy		
• Radiation Therapy	63	63
• Surgical Intervention	67	67
• Hormonal Therapy	47	47
Since when		
• <1 year	55	55
• 1-3 years	22	22
• >3 years	23	23
Mean ± SD 1.94 ± 0.77		

Table (4): The change in the mean of the Studied Elderly Women with Breast Cancer According to Their Domains of Quality of Life (n=100).

Items	Mild effect		Moderate effect		Severe effect		Extremely severe effect		Mean SD
	N	%	N	%	N	%	N	%	
Symptoms	8	8	15	15	37	37	40	40	18.78±1.55
Emotions	5	5	11	11	20	20	64	64	34.62±0.94
Functioning	3	3	16	16	17	17	64	64	50.32±1.26
Total	**6**	**6**	**14**	**14**	**25**	**25**	**55**	**55**	**103.72±11.6**

Table (5): Correlation between Quality of Life Domains.

Items	Symptoms	Functioning
Symptoms		r = 512
		P = .000**
Emotions	r = 597	r = 552
	P = .000**	P = .000**

**Highly Significant at p ‹ 0.01.

Table (6): Best Fitting Multiple Linear Regression Model for Elderly Women with Breast Cancer on Quality of Life.

Variables	Unstandardized Coefficients	Standardized Coefficients	T	P. value
	B	β		
Age	-.108	-.115	-1.042	.047*
Marital status	-.177	-.187	-1.396	.039*
Monthly income	.169	.182	1.705	.021*
Suffering from chronic diseases	-.268	-.287	1.388	.034*
Duration of breast cancer diagnosis	.161	.173	1.299	.041*
Stages of breast cancer at diagnosis	-.162	-.179	-1.345	.031*
Time since receiving chemotherapy	-.301	-.309	-1.558	.029*
Number of total Chemotherapy cycles	.131	.147	1.153	.045*
Previous chemotherapy history	-.101	-.110	-1.006	.048*
ANOVA				
Model	**Df.**	**F**	**P. value**	
Regression	9	6.314	.031*	

** Dependent Variable: Total Effect on Quality of Life.

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