Perceptions and Coping Mechanisms Experienced by Ethiopian Breast Cancer Patients

Meron Amare[1], Kedir Endris[2], Ezra Belay[3][*]

[1]College of Medicine and Health Science,
Hawassa University, Hawassa, Ethiopia
E-mail: meri2024@yahoo.com
[2]Department of Nursing, college of Health Science,
Mekelle University, Mekelle, Ethiopia.
E-mail: kedirendris@ymail.com
[3]Institute of Biomedical Sciences, College of Health
Science, Mekelle University, Mekelle, Ethiopia.
*E-mail: aga.bely@gmail.com

Abstract

Background: Breast cancer is the leading cause of cancer related death among women worldwide. The manner in which different women respond to the diagnosis of breast cancer varies enormously and influences the course of the disease. Coping behaviors can reduce the negative impact of breast cancer disease in patient's life. The purpose of this study was to assess coping mechanisms used by breast cancer patients in Ethiopian setting where data are scarce.

Methods: Institutional based cross sectional study was conducted in Tikur Anbessa Specialized Hospital Oncology Unit from October 2011 to May 2012. Two hundred and thirty four breast cancer patients were selected for this study using convenient sampling technique.

Result: Majority (43.2%) were in the age range between 40-54 years. Of total 47 coping activity lists mentioned, greater number of participants retorted a positive action only in 9 coping activities. In the rest 38 coping mechanisms majority of the participants responded a negative answer or they did not practice these activities. Out of 234 total respondents, 113(48.3%) reported that they avoided being with people in general. In multiple logistic regression analysis educational status was found to be the main predictor, independently and negatively associated with isolation (AOR=0.2; 95% CI: 0.10- 0.21).

Conclusion & recommendation: The results indicated negative coping activities in majority of the participants. There is a need to encourage positive coping activities in women with breast cancer. Moreover, incorporation of social and psychological support appears to be helpful for better outcome of breast cancer management.

Key words: Breast cancer; women; Coping behaviors; Ethiopia

Introduction

Breast cancer is the leading cause of cancer related death among women worldwide [1]. Survival after breast cancer is strongly related to the stage at diagnosis, as increasing stage increases the risk of death [2]. While industrialized countries experience a higher incidence rate due to widely available cancer screening programs, they encounter a much lower breast cancer mortality rate due to early detection. However, in developing countries, such as Ethiopia, the lack of widely available and accessible screening protocol leads to a higher mortality rate [3]. However, length of survival following breast cancer diagnosis varies considerably, even after accounting for stage and treatment, thus suggesting that there are other important factors involved. As the population of breast cancer survivors in the world continues to grow, it is important to identify lifestyle and behavioral factors that may improve survival and quality of life [2].

Diagnosis of breast cancer has not only physical, but also social and psychological implications because of the importance of the breast in a woman's body image, sexuality and motherhood [4]. Intense personal and interpersonal challenges accompany the first year surrounding a diagnosis of breast cancer, with affected individuals often attempting to manage complex decisions, arduous treatments, and confrontation of threats to life, well-being, and cherished relationships [5]. Although most women who face cancer adjust well over the long term, substantial individual variability occurs in reaction to diagnosis, and some women manifest extreme distress [5].

The manner in which different women respond to the diagnosis of breast cancer varies enormously. Many women adapt differently to the diagnosed breast cancer and use different coping strategies to deal with the physical and psychological challenges of the disease. These variations may be due to individual coping

strategies, personality factors, the level of social support available to them and, to a large extent, the consultation skills of her medical careers, especially the surgeon who breaks the bad news [4].

The course of the disease may have some impact on coping, either in a direct manner via psychologically active paraneoplastic hormones, or in a more indirect manner through the emotional reaction of the patients to bodily symptoms [6]. Conversely coping may influence the course of the disease, either in a direct manner via psycho-neuroimmunological mechanisms (e.g., active coping might increase and depressive coping decrease natural killer cell activity), or in an indirect manner via compliance, such as when patients who cope actively might receive a higher amount of chemotherapy whereas those who are depressed might discontinue such therapy earlier [7].

According to accumulating evidences several factors could influence the coping strategies of women with cancer, including demographic characteristics, educational level, positive thinking, and psychosocial support [8]. So far most of studies on coping mechanisms used by breast cancer patient have been done in developed countries, which often have necessary resources available for early detection. However, there is no sufficient data on coping mechanisms used by breast cancer patients in Ethiopia (and other developing countries). Therefore, the purpose of this study was to assess coping mechanism of patients with breast cancer and to assess factors that affect coping mechanisms.

SUBJECTS AND METHODS

An institutional based Cross sectional study was conducted in Tikur Anbessa Specialized Hospital, Addis Ababa, Ethiopia from October 2011 to May 2012. Tikur Anbassa Specialized Hospital is located at the center of the city which serves as a referral center for all sorts of patients coming from every side of the country. It is the largest general public hospital in Addis Ababa and the only hospital in the country which has Oncology unit, established in 1994.

Source population

All breast cancer patients attending Tikur Anbassa Specialized hospital oncology clinic were the source population of this study.

Study population

Two hundred thirty four breast cancer patients in all age groups visiting during the study period were included in the study. Mentally incompetent patients and other Cancer patients (other than breast cancer) were excluded from the study.

Sample size and sampling techniques

The total sample size was determined by using single population proportion formula. Convenient sampling techniques were in which patients who fulfilled the inclusion criteria were included consecutively until the required sample size is obtained.

Patients were selected using systematic sampling technique.

Data collection instrument

Data was collected using structured questionnaire. The questionnaire used to assess coping mechanism contains 50 items that is adopted from Lazarus and Folkman. The assessment tool contains the patients' socio demographic characteristics, most of all coping strategies practiced by all patients and social support in the process of coping mechanisms. The total (50) measures of coping were categorized into eight components namely confrontive coping, distancing, self-controlling, seeking social support, accepting responsibility, escape-avoidance, plan full problem solving and positive reappraisal. Each component contains coping activities which has similar (related) concepts. Negative and uncertain responses for the given activity were categorized as unpractised or unused responses. The responses such as quite a bit and a great deal were categorized as positive responses since both responses indicated that the respondent used the activities.

PRETEST

Since there was no previous study conducted in the study area in the same topic, for validity and reliability the data collection instrument was piloted on 10% of breast cancer patients who were illegible in the same hospital before the study period. After the pretest, any misunderstanding of the questionnaire was cleared by the investigator and also unclear items were written in clear and easily understandable language.

DATA ANALYSIS

Data were entered using EPI INFO latest version (3.5.1) and then transported SPSS (version 16.00) for analysis. Summary statistics such as Frequencies, proportions, mean and standard deviation was used to describe the study population in relation to socio-demographic and other relevant variables. The degree of associations between dependent and independent variables was assessed using crude Odds ratio with 95% confidence interval. Binary logistic regression analysis was performed to assess the relationship between independent and

dependent variables. Finally multiple logistic regressions analysis was used to control potential confounding variables.

ETHICAL CONSIDERATION

Ethical clearance was secured from Addis Ababa University, Faculty of Medicine Institutional Review board (IRB) and permission was obtained from the study hospital. Official letter was obtained from the school of Nursing, Faculty of Medicine of Addis Ababa University to concerned officials to get permission and cooperation for the study. Each respondent was asked for their willingness before data collection and they were informed about the purpose of the study, the right to refuse, and assured anonymity and confidentiality. Participants were not asked to write their name and verbal consent was obtained prior to each interview.

RESULTS

Socio demographic characteristics

From a total of 234 breast cancer patients participated in the study, majority (43.2%) were aged between 40-54 years. Most of the studies participants (65.0%) were unemployed and 46.6% of the participant had no any income while the rest were in lowest income level (Table 1).

Among the respondents 61.5% were literates (had formal education). Majority of the subjects (44.0%) had diagnosed breast cancer 1-3 years ago, followed by 31.2% less than one year. Two hundred thirteen (91.0%) study subjects were receiving combination and hormonal therapy. Out of total, 171 respondents 73.1% had social support and the rest 63 (26.9%) had no any support group (Table 1).

Table1. Socio- demographic characteristics of breast cancer patients at Tikur Anbassa Specialized hospital, June 2012

Characteristics		Number (n)	Frequency (%)	Characteristics		Number (n)	Frequency (%)
Age	25-39	90	38.5	**Occupation**	House wife	152	65.0
	40-54	101	43.2		Governmental employee	56	23.9
	55-69	35	15.0		Merchant	14	6.0
	70-84	8	3.4		Daily labor	12	5.1
Educational status	No formal education	90	38.5	**Income**	No income	109	46.6
	Elementary school	23	9.8		≤ 500	46	19.7
	Secondary school	74	31.6		>500	79	33.8
	Tertiary and above	47	20.1	**Durations since diagnosed breast cancer**	<1year	73	31.2
	No	63	26.9		1-3 years	103	44.0
Religion	Orthodox	170	72.6		3-5years	37	15.8
	Muslim	34	14.5		>5years	21	9.0
	Protestant	28	12.0	**Type of treatment received**	Combination or hormonal therapy	213	91.0
	Catholic	2	0.9		Chemotherapy	17	7.3
Marital status	Never married	20	8.5		Radiotherapy	2	0.9
	Married	140	59.8		Surgery	2	0.9
	Widowed	34	14.5	**social support**	Yes	171	73.1
	Divorced	40	17.1		No	63	26.9

Coping Mechanisms

Eight components namely confrontive, distancing, self-controlling, seeking social support, accepting responsibility, escape-avoidance, plan full problem solving and positive reappraisal with a total 47 activity list were used to measures coping activities of the study participants. Greater number of participants retorted a positive action only in 9 coping activities. In the rest 38 coping activities majority of the participants responded a negative answer or they did not practice these activities (table 2). Therefore, this result shows that the majority of the participants did not use many of the components of positive coping activities. This can be considered as a sign for negative coping activities of the participants.

Table 2: Distribution of breast cancer patients by their coping activities at Tikur Anbassa Specialized Hospital, Addis Ababa, June, 2012

Coping activities		Response	
		Yes: n (%)	No: n (%)
Confrontive	I did something which I didn't think would work, but at least I was doing something	50(21.4)	**184(78.6)**
	I let my feelings out somehow	**214(91.5)**	20(8.5)
	Stood my ground and fought for what I wanted	59(25.2)	**175(74.8)**
Distancing	Turned to work or substitute activity to take my mind off things	117(50.0)	**117(50.0)**
	Went along with fate; sometimes I just have bad luck	84(35.9)	**150(64.1)**
	Went on as if nothing had happened	**145(62.0)**	89(38.0)
	Looked for the silver lining, so to speak; tried to look on the bright side of things	101(43.2)	**133(56.8)**
	Didn't let it get to me; refused to think too much about it	51(21.8)	**183(78.2)**
	Made light of the situation; refused to get too serious about it	39(16.7)	**195(83.3)**
Self-controlling	Tried not to burn my bridges, but leave things open somewhat.	40(17.1)	**194(82.9)**
	I tried to keep my feelings to myself.	55(23.5)	**179(76.5)**
	I tried not to act too hastily or follow my first hunch.	40(17.1)	**194(82.9)**
	I tried to keep my feelings from interfering with other things too much.	60(25.5)	**174(74.4)**
Seeking social support	Talked to someone to find out more about the situation	63(26.9)	**171(73.1)**
	Accepted sympathy and understanding from someone	**213(91.0)**	21(9.0)
	I got professional help	**154(65.8)**	80(34.2)
	Talked to someone who could do something concrete about the problem	63(26.9)	**171(73.1)**
	I asked a relative or friend I respected for advice	18(7.7)	**216(92.3)**
	Talked to someone about how I was feeling	63(26.9)	**171(73.1)**
Accepting responsibi	Criticized or lectured myself.	67(28.6)	**167(71.4)**
	I told myself things that helped me to feel better.	117(50.0)	**117(50.0)**
	I made a promise to myself that things would be different next time.	31(13.2)	**203(86.8)**
Positive appraisal	Changed or grew as a person in a good way.	53(22.6)	**181(77.4)**
	I came out of the experience better than when I went in.	23(9.8)	**211(90.2)**
	Found new faith.	12(5.1)	**222(94.9)**
	Rediscovered what is important in life.	49(20.9)	**185(79.1)**
	I prayed.	**234(100%)**	0
Escape avoidance coping activities	Hoped a miracle would happen.	14(6.0)	**220(94.0)**
	Slept more than usual.	1(0.4)	**233(99.6)**
	Got away from it for a while; tried to rest or take a vacation.	55(23.5)	**179(76.5)**
	Tried to make myself feel better by eating, drinking, smoking, using drugs or medication, etc.	0	**234(100)**
	Avoided being with people in general.	113(48.3)	**121(51.7)**
	Took it out on other people.	**217(92.7)**	17(7.3)
	Refused to believe that it had happened.	105(44.9)	**129(55.1)**
	Accepted it, since nothing could be done.	**220(94.0)**	14(6.0)
	Wished that the situation would go away or somehow be over with.	**143(61.1)**	91(38.9)

Plan full problem-solving	Just concentrated on what I had to do next – the next step	116(49.6)	**118(50.4)**
	I tried to analyze the problem in order to understand it better	86(26.5)	**172(73.5)**
	I felt that time would make a difference – the only thing to do was to wait	82(35.0)	**152(65.0)**
	Bargained or compromised to get something positive from the situation	76(32.5)	**158(67.5)**
	Changed something so things would turn out all right	49(20.9)	**185(79.1)**
	I knew what had to be done, so I doubled my efforts to make things work	63(26.9)	**171(73.1)**
	Came up with a couple of different solutions to the problem	68(29.1)	**166(70.9)**
	I prepared myself for the worst	104(44.4)	**130(55.6)**
	I went over in my mind what I would say or do	**145(62.0)**	89(38.0)
	I jogged or exercised	7(3.0)	**227(97.0)**

ISOLATION

Out of 234 respondents, 113(48.3%) reported that they avoided being with people in general. Of this only 5 of them were never married and the rest 108 respondents were married individuals. In bivariate analysis isolation was found to be significantly associated with marital status, educational level, occupational status and average monthly income of participants. However, after controlling for possible confounding variables only educational level was found to be the main predictor, independently and negatively associated with isolation (AOR=0.199; 95% CI: 0.102- 0.211) (table 3).

Table 3: Association of isolation (avoided being with people in general) with sociodemoraphic characteristics in Tikur Anbassa Specialized Hospital, Addis Ababa, 2012.

Variables		Yes	No	COR (95% CI)	Adjusted OR with 95% CI
		Isolation (Avoided Being With People In General)
Age	25-39	37	53	1.00	
	40-54	51	50	1.46(0.82,2.59)	
	55-69	21	14	2.15(0.97,4.76)	
	70-84	4	4	1.43(0.34,6.10)	
Marital status	Never married	5	15	1.00	1.00
	Married	108	106	0.36(1.07,8.71)**	2.37(0.76,7.42)
Education	Illiterate	64	26	1.00	1.00
	Literate	9	95	0.21(0.12,0.37)***	0.2(0.10,0.21)***
Occupation	No occupation	82	70	1.00	0.58(0.80,0.36)
	Some occupation	31	51	0.52(0.30,0.90)***	
Average income	<320	12	5	1.96(0.65,6.94)**	2.82(0.75,10.58)
	320-500	10	19	0.43(0.18,1.01)	1.1(0.38,3.16)
	501-700	9	16	0.46(0.18,1.13)	1.54(0.50,4.76)
	>700	22	32	0.56(0.29,1.08)	1.48(0.58,3.80)
	No income	60	49	1.00	
Duration breast cancer diagnosis	<1year	3	6	1.00	
	1-3years	56	67	1.67(0.40,6.99)	
	3-5 years	32	30	2.13(0.48,9.30)	
	>5years	22	18	2.44(0.54,11.17)	
Social support	Yes	77	94	0.61(0.34,1.10)	
	No	36	27	1.00	

N.B: **=P-value<0.05 and ***=P-value<0.005

DENIAL

Of the total 234 respondents interviewed, 105(44.9%) refused to believe that it had happened. In bivariate logistic regression analysis denial was found to be significantly associated with marital status, educational level, occupational status and average monthly income of participants. However, after controlling for possible confounding variables, none of these characteristics were significantly associated with denial.

DISCUSSION

The purpose of this study was to investigate how breast cancer patients` cope up with their diseases. The result of this study indicated that most of the participants experienced negative coping activities. They had also poor communication with health care professionals about their disease process and with significant others.

Educational and occupational statuses of the participants were positively associated with positive coping approaches of the respondents. Those who are literates and have some occupation coped positively as compared to those who are illiterates and have no occupation. This is consistent with the study conducted by Lehto et al., M [9]. Also educational status was found to be the main predictor, independently and negatively associated with participants' isolation (AOR=0.2; 95% CI: 0.10- 0.21). This can be justified as participants who are educated may have information about breast cancer to realize the situation and to protect them from isolation. Similar findings had also reported by Hasida Ben-Zur. The authors indicated that patients with higher educational level are experienced low emotion-focused coping activities. Conversely, patients with a low educational level may be particularly vulnerable to distress [10-13]. We suggested that education may be considered as a means to enhance positive coping measures.

 The type of treatment given to the patient is also one of the factors which affect the clients coping behavior. None of the participants received breast reconstructive therapy after mastectomy which may have poor body image or negative coping effect. As a result patients may isolate themselves. This assumption is in consistent with other studies which suggested that surgery in combination with reconstruction has a positive effect on health related quality of life (HRQL) and good adjustment [14].

Among coping strategies escape avoidance is the major predictor of negative coping. In this study 92.7% of the participants experienced it. Likewise 94.0% of the respondents believed or accepted that nothing could be done about their disease which is also the main component of escape avoidance coping activities. This is agreement with study conducted by Lehto et al [9]. The more the clients felt helpless or hopeless, the more they are vulnerable to negative coping. Therefore, behavioral escape-avoidance coping strongly predicts worse psychological well-being. It is generally believed that a person's mental attitude in response to a diagnosis of cancer affects his or her chances of survival, and the psychological coping factors that are most well known in this respect are fighting spirit and helplessness/hopelessness [10]. These behavioral escape-avoidance copings strongly predict poorer quality of life(QOL) [10]. It has been suggested that clinicians need to detect coping styles such as helplessness or hopelessness and treat them vigorously [15].

Seeking social support is also the major component of positive coping strategies. The result of this study clearly shows that many of the participants had limited communication and social interaction even with health care professionals, which leads to poor coping. Similar results were also reported by Duncan et al [16]. Social support has generally been reported to be the means of changing psychological stress processes, especially coping, and their outcomes [10]. Thus, breast cancer patients' perception on how much social support they receive from others may influence their choice of specific coping strategies between active (i.e. positive reframing) and passive (i.e. self-blame) coping, which in turn may influence their emotional well-being. The beneficial factors included also social support received from family, relatives, acquaintances and other patients which appeared to be a health-enhancing factor [10, 16]. Active participation of others can influence breast cancer patients' efforts to manage their physical as well as emotional conditions. As a result, social support can help bolster self-esteem of individuals as well as the sense of control over their situations. A strong sense of control and confidence would strengthen breast cancer patients' own coping efforts by leading them to rely on active coping strategies (e.g. positive reframing) rather than passive/avoidance coping strategies (e.g. Self-blame) [16,17].

The more patients avoided communication, the less they will get emotional support from others, which in turn associated with negative coping [14, 15]. In this study 171(73.1%) participants reported that they did not talk with their friends or relative and professionals who could do something about their problem. Receiving effective emotional support can be very helpful and detrimental for women with cancer, especially when that support comes from their partners. When patients avoid talking about cancer with their partners, there is a possibility that they may be misinformed about reality of the disease and lost commitment with life [18]. Patients avoiding communication tended to blame themselves for the cancer, and self-blame was related to higher depression and anxiety [15, 18].

Plan full problem solving is one of the measures of positive coping activities. The more the patients use plan full problem solving, the more they cope positively and the reverse is true. However, majority of respondents in this

study indicated that they did not use plan full problem solving. Similar results were also reported by Ben-Zur [10]. An examination of specific coping strategies shows that positive reinterpretation, humor, and planning on the part of the patient seem to be particularly related to good adjustment [10].

Exercise is also the major component of plan full problem solving coping activities. Combining innovative physical activity interventions with innovative dietary interventions may be a suitable approach to develop sustainability of healthy behaviors in this population [14, 17]. Conversely 97 % of respondents in our study stated that they did not jog or exercise. This result is consistent with the study conducted by Mark P., Ruth B.2009 [17]. The fact that any physical activity has a positive influence on quality of influence is encouraging and suggests the importance of encouraging physical activity rather than rest to persons receiving treatment for breast cancer [14].

Religious coping is also the major component of positive reappraisal which has a great influence on patients' adjustment. In this study all of the participants mentioned that they prayed. Positive religious coping can help clients for good psychological adjustment while negative religious coping predicts worse psychological adjustment [19]. Clinicians rarely ask patients with serious illness about their religious coping despite the fact that the majority want their physicians to be aware of their spiritual beliefs. Because negative rather than positive religious coping predicts important health outcomes, inquiring about negative religious coping may be most beneficial. Clinicians could therefore facilitate referrals to clergy for people in the midst of religious spiritual struggle [19].

Self-image, sense of control, and supportive relations may affect the course of long-term adjustment. There appears to be a substantial relationship between well-being, mood disturbance, level of depressive symptoms, subjective quality of life and social disruption shortly after treatment [21].

These data suggests that breast cancer affects the clients coping strategies in potent ways, and that coping mechanisms acts as an intervening or mediating factor between stress and breast cancer disease. Majorities of clients in this study cope negatively and needs psychological support. Early and appropriate psychosocial support and physical rehabilitation could enhance the cancer patients' quality of life, facilitate their adjustment process and possibly prevent them from developing chronic psychiatric disease [21, 22]. Therefore, health care professionals should be aware of psychological support and religious coping of clients' in order to facilitate positive coping to the disease. Coping behaviors can also reduce the negative effect of life strains brought on by disease.

CONCLUSION

The result of this study shows that the majority of patients had negative coping activities in many categories of coping dealings. Majority of participants included in this study had no formal education, income and were housewives. This may have a big influence for experiencing negative coping to their situation.

RECOMMENDATION

Since breast cancer disease affects quality of life and the clients` coping in a dominant ways strategies should be in place to encourage positive coping activities and discourage negative coping activities. Health information and education regarding the disease process, treatment options and treatment side effect, prognosis and disease outcome provided through public agencies, mass media, in the hospital environment, in churches and other places are urgently needed. Moreover, social and psychological support needs to be incorporated in addition to the physical care in our settings.

Conflicts of interest

The authors declare that there is no conflict of interest.

Acknowledgments

The authors would like to thank all the staffs of Tikur Anbesa Hospital oncology clinic, and data collectors and study participants involved in the study.

Authors Contributions

Conceived and designed the study: MA KE EB. Performed the study: MA KE EB, Analyzed the data: MA KE EB, Contributed to study analysis tools: MA KE EB. Wrote the paper: MA KE EB.

Prepare and wrote the manuscript: EA TA EB.

REFERENCES

[1]   Oluwole O.C. Awareness, Knowledge and Practice of Breast-Self Examination amongst Female Health Workers in Nigerian Community. Sudan JMS 2008; 3(2):129-140.
[2]   Brian N. Fink, Jeffrey G. Weiner, Timothy R. Jordan, Amy J. Thompson, Timothy C. Salvage et al. Early Stage Breast Cancer and Its Association with Diet and Exercise-Related Perceptions and Behaviors to Prevent Recurrence. Breast Cancer: Basic and Clinical Research 2010; 4:65–72.
[3]   Akpo E., Akpo M & Akhator A.: Breast Cancer Knowledge And Screening Practices Among Nigerian Medical Students. The Internet Journal of Health. 2010; 11(2):140-151.

[4]   Fiona Mahapatro, Shubhangi R. Parkar. A comparative study of coping skills and body image: Mastectomized vs. lumpectomized patients with breast carcinoma. Indian Journal of Psychiatry 2005; 47(4): 198–204.

[5]   Annette L. Stanton, Sharon Danoff-Burg, Melissa E. Huggins. The First Year After Breast Cancer Diagnosis: Hope and Coping Strategies as Predictors of Adjustment. Psycho-Oncology 2002; 11: 93–102

[6]   Parkin DM. Cancer in developing countries. Cancer Surveys 1994, 19(20):519-561.

[7]   Hermann Faller, Heinrich Bu¨ lzebruck, Peter Drings, Hermann Lang. Coping, Distress, and Survival Among Patients With Lung Cancer. Arch Gen Psychiatry 2011; 56: 190-196.

[8]   Al-Azri M, Al-Awisi H, Al-Moundhri M. Coping With a Diagnosis of Breast Cancer-Literature Review and Implications for Developing Countries. The Breast Journal 2009; 15(6): 615–622.

[9]   U.-S. Lehto, M. Ojanen, P. Kellokumpu-Lehtinen. Predictors of quality of life in newly diagnosed melanoma and breast cancer patients. Annals of Oncology 2005; 16: 805–816.

[10]   Hasida ben-zur, Ora gilbar,Shirley Lev. Coping With Breast Cancer: Patient, Spouse, and Dyad Models. Psychosomatic Medicine2001; 63:32–39.

[11]   Lynne Wittenberg, Maya Yutsis, Sharee Taylor, Janine Giese-Davis, Caroline Bliss-Isberg et al. Marital Status Predicts Change in Distress and Well-being in Women Newly Diagnosed With Breast Cancer and Their Peer Counselors. The Breast Journal 2010; 16(5): 481–489.

[12]   Sharon L. Manne, Jamie S. Ostroff, Tina R. Norton, Kevin Fox, Lori Goldstein et al. Cancer-Related Relationship Communication In Couples Coping With Early Stage Breast Cancer. Psycho-Oncology 2006;15: 234–247

[13]   Kamal Abdel-Aal, Mohamed Hassanein, Brian T. Musgrove, Eileen Bradbury. Psychological outcome of patients following treatment of oral cancer and its relation with functional status and coping mechanisms. Journal of Cranio-Maxillofacial Surgery 2005; 33(6):404-409.

[14]   Barbara K. Fatigue, Self-efficacy, Physical Activity, and Quality of Life in Women with Breast Cancer. Cancer Nursing 2011; 34(4): 344-345.

[15]   Jenny Larsson, Kerstin Sandelin, Christina Forsberg. Health-Related Quality of Life and Healthcare Experiences in Breast Cancer Patients in a Study of Swedish Women. Cancer Nursing 2010; 33(2):167-168.

[16]   Junghyun Kim, JeongYeob Han, Bret Shaw, Fiona Mctavish, David Gustafson. The Roles of Social Support and Coping Strategies in Predicting Breast Cancer Patients' Emotional Well-being. Journal of Health Psychology 2010; 15(4):543–552.

[17]   Mark Petticrew, Ruth Bell, Duncan Hunter. Influence of psychological coping on survival and recurrence in people with cancer. Cancer Nursing 2007; 325(9): 324-325.

[18]   Erin Donovan-Kicken, John P. Caughlin. Breast cancer patients' topic avoidance and psychological distress: The mediating role of coping. Journal of Health Psychology 2011; 16(4): 596–606.

[19]   Randy Hebert, Bozena Zdaniuk, Richard Schulz, Michael Scheier. Positive and Negative Religious Coping and Well-Being in Women with Breast Cancer. Journal of Palliative Medicine 2009; 12 (6):330-343.

[20]   Hae-Chung Yang, Brittany M. Brothers, and Barbara L. Andersen. Stress and Quality of Life in Breast Cancer Recurrence: Moderation or Mediation of Coping? Ann Behav Med. 2008; 35(2): 188-197.

[21]   Silvia Schmid-Buchi, Ruud J.G. Halfens, Theo Dassen, Bart van den Borne. Psychosocial problems and needs of posttreatment patients with breast cancer and their relatives. European Journal of Oncology Nursing 2011; 260–266.

[22]   U.-S. Lehto, M. Ojanen, P. Kellokumpu-Lehtinen. Predictors of quality of life in newly diagnosed melanoma and breast cancer patients. Annals of Oncology 2005; 16: 805–816.