

Effect of Optimism on Psychological Stress in Breast Cancer Women

Nighat Shaheen

Jinnah College for Women, University of Peshawar

Salma Andleeb

Shaheed Banazeer Bhuto, Women University, Peshawar

Summiya Ahmad

University of Peshawar

Asad Bano

Public Service Commission Peshawar

The present study aimed to examine the effect of optimism on pre and post diagnosed psychological stress in breast cancer women. Sample consisted of eighty women in age range of 45 to 60 years, (M=52.6, SD=9.15) who were scheduled for diagnosis at the Institute of Radiotherapy and Nuclear Medicine (IRNUM), of Peshawar, Khyber Pakhtun khawa, Pakistan. Convenience sampling technique was used. The sample was matched on certain demographic variables, such as age, socioeconomic status and education and was assessed by Life Orientation Test Revised (Scheier & Carver, 1985), and Impact of Event Scales (Horowitz, Wilner, & Alvarez, 1979). The t-test analyses were carried out to test the significance of difference between two groups. Results show that breast cancer women having higher optimism experience less stress before and after the diagnosis of breast cancer as compared to those with low optimism ($p < .001$). The data support the hypotheses. The findings conclude that optimism has supportive effect during the psychological stress experienced by the women at pre and post diagnostic stage of breast cancer and it can be a useful tool in minimizing stressful life events such as breast cancer.

Key Words: breast cancer, optimism, psychological stress

Cancer is a common and serious health problem in the world. Despite new solutions in preventing, screening and treatment, 10 million new invasive cancers (in both sexes) are diagnosed every year. Among them 10% are diagnosed with breast cancer, which after lung makes it the second most common site of malignant neoplasm (Parkin, 2001). In 2008 breast cancer caused 4, 58503 deaths worldwide, 13.7% of cancer deaths in women (World Cancer Report, 2008). This hold true for Pakistani women with an estimated incidence rate of 31.5% cases per 100,000 women per year (World Cancer Report, 2008). According to a report 38,285 cases were registered in KPK during 2012 (Breast cancer awareness, 2013). In another report 50% of the breast cancer women in Pakistan die without seeking proper treatment (Public health, 2014).

The diagnosis of breast cancer elicits greater distress than any other disease. An accurate and fast diagnosis and timely treatment is essential to the breast cancer women. Besides, addressing the psychological needs, quality of life of these women is equally important and has become a part of the modern cancer treatment and care in the recent years.

Women diagnosed with breast cancer face many challenges. A major concern among them is that how treatment will affect their physical attractiveness and appearance (Carver et al., 1998; Spencer et al. 1999). Compared to other diseases, the diagnosis of breast cancer carries with it a great threat on the women's attractiveness and sense of femininity due to disfiguration or loss of breast or breasts. The women's adjustment to these challenges varies with several factors including type of treatment (such as chemotherapy, hormonal therapy & radiation), surgical procedures (e.g. lumpectomy & mastectomy) prognosis (cancer stage & risk of recurrence), demographic factors (e.g, age, education, marital status, & employment), patient's social relationship (interpersonal resources available & social support), cognitive processes and control over the disease. Person's state of mind, whether he /she is optimist or pessimist, greatly influences one's adjustment to the life threatening disease. Optimism is a state of positive attributes with more positive outcomes than the negative while pessimism is devoid of positivity. (Scheier & Carver, 1985). Individual high on optimism, having expectancy that good outcome occur, is less likely to develop tension and anxiety and is less likely to prone to certain mental and physical disorders.

Correspondence concerning this article should be addressed to Nighat Shaheen, Assistant Professor, Jinnah College for Women, University of Peshawar, Email: nighatshaheen96@gmail.com

According to the Scheier and Carver's optimism theory (1985) optimism refers to a person's generalized expectancies. Based on the expectancy value model of motivation, the theory emphasizes that human behavior is

goal directed. As a generalized expectancy of achieving one's goal, optimism also affects the situations specific thoughts of the people. Optimistic people thus, hold positive expectations for their future. Pessimists, on the other hand, are inclined to have negative expectations.

A relatively large amount of empirical studies have demonstrated that optimists face adversity and handle challenges more effectively than the pessimists and thus, benefit psychologically (Brissette, Scheier & Carver, 2002; Carver & Gains, 1987; Segerstrom, Taylor, Kemeny & Fahey, 1998) and physically (Rainkkonen, Mathews, Floy, Owens & Gump, 1999; Scheier & Carver, 1985; Scheier et al. 1989). There is also evidence that optimists adjust more favorably to important life transition than do the pessimists (Aspinwall & Taylor 1992).

Numerous studies demonstrated optimism as an important trait in buffering of stress and a protective factor that contributes to resilience under stress (Carver et al. 1993; Miller, Manne, Taylor, Keates & Dougherty, 1996). For example, Carver, Lehman and Antoni (2003) studied relationship between optimism, social disruption and chemotherapy in breast cancer women at 4 time points (1, 4, 7&16 months) after surgery. Result showed a positive correlation between pessimism and social disruption than between chemotherapy and social disruption. Further, pessimism predicted later distress in these women even after controlling the earlier distress. In an early study the researchers measured optimism, pessimism and subjective well-being in 70 breast cancer women at the time of diagnosis, 1 day before surgery and 3, 6 and 12 months follow ups. At each follow up women also reported their sex life, physical discomfort and thought intrusion. Result revealed that as compared to optimists, pessimists were found poorly adjusted at each time by all measurements. However, their sexual life and thought intrusion did not increase over time. (Carver et al, 1994b). In another study Kurtz (2008) investigated the effect of dispositional optimism and mastery in 214 patients undergoing chemotherapy. Patients completed a symptoms control intervention program and assessed at start, after end of the program and again after 16 weeks. He found that patients with higher level of optimism and mastery reported less severe pain and fatigue. No significant difference was found between early and late stage patients in terms of degree of optimism and level of mastery, an important finding which, to some extent, ruled out the possibility that optimistic attitude of these patients may had been caused by less severe pain and fatigue at stage I. The findings also revealed that the number of additional health issues on the top of cancer did not influence the optimism and mastery of these patients.

Several researchers in their study on healthy subjects found association between optimism and higher immune parameters (Cohen et al. 1999; Segerstrom, Taylor, Kemeny & Fahey, 1998), including higher number of natural killer cell activity (NKCA) a well-known sensitive immunological marker

of stress (Spiegel & Sephton, 2001) and increase in T cell Cytokine, decrease of T cell of IFN has been associated with increase in breast cancer relapse and decreased breast cancer survival (Arduino et al, 1996). In a more recent study the researchers studied immune responses and optimism in law students before the class and 5 times over 6 months. With each measure of optimism about law school, subjects were injected to examine a part of immune system responsible for fighting viral and some bacterial infections. It was found that each subject's immune response was stronger (a large bump in skin was an indication of strong immune response) at more optimistic time and more sluggish at a more pessimistic time (International Association for the Study of lung cancer, 2010).

The purpose of the present study was to investigate the effect of optimistic attitude on one's level of psychological stress in breast cancer women.

Hypotheses

Following hypotheses were formulated to examine the role of optimism in affecting the degree of psychological stress being displayed by the breast cancer women.

1. High optimistic women will experience less stress at prediagnosed stage of breast cancer than low optimistic women.
2. Women having higher optimism will obtain less score on the stress scale than those having low optimism after diagnosis of the disease.
3. Stress level of the low optimistic women will be further intensified after diagnosis of the disease.

Method

Study Design

In the present study Between Subjects Design was used to assess the effect of optimism on breast cancer patients. Two groups of women having high and low scores on scale measuring optimism, that is, Life Orientation Test Revised (LOT-R) were examined for stress tolerance at pre –and –post diagnostic stage of their disease. Convenience sampling technique was used to select the sample.

Sample

The sample included 80 women enrolled for the diagnosis of breast cancer. The age range of the sample was 45 to 60 years ($M=52.6$, $SD=9.15$). All these women were married, belonged to middle socio economic class and were at least undergraduate. Women having past history of psychiatric disorders, serious cardiovascular disorders, thyroid and immune disorders such as hepatitis, diabetes or were taking any anti-depressant drugs were excluded from the sample.

Instruments

Life Orientation Test Revised (LOT-R)

The LOT was developed by Scheier and Carver, (1985) to measure individual differences in the generalized optimism

and pessimism. Having adequate psychometric properties it has been used in a wide variety of research. It was however, criticized on the ground that item sets which form two factors (optimism & pessimism) are not strongly inter related (Chang, D'zurilla & Maydeu-Olivares, 1994), further some of its items asked about things slightly different from expectation for the future. In 1994 Scheier, Carver and Bridges revised it. The LOT-R is brief than the original. It consists of 10 items including 4 filter items (that are not scored as part of the scale). Score on each item range from 0-4 with following response categories, (0) strongly disagree, (1) disagree, (2) neutral (3) agree and (4) strongly agree. Maximum score on the scale is 24. Total score is obtained by scoring reverse item no 3, 7 and 9. The following score range was used to classify, optimistic people.

Score	Classification
	Optimistic personality
	Low
14-18	Moderate
19-24	High

The author determined validity by item sum correlation. The correlation ranged from .43 to .63. The Cranach's alpha, for the entire 6 items established is .78. The test- retest reliability was established by administering the test on different sample of college graduates at 2 points in time separated by different time intervals. The test – retest interval for the four groups were 4 months (n = 96), 12 months (n = 96), 24 months (n = 52), and 28 months (n = 21). The computed correlations ranged from .68, .60, .56 and .79 respectively.

Impact of Event Scale (IES)

It is 15 items self reported instrument widely used to measure the current subjective stress to any event (Horowitz, Wilner & Alvarez, 1979). Available in two forms, original 15 items and revised 22 items (Weiss, & Marmer, 1997). It is based on the Horowitz's model of Emotional Processing Following a Trauma (Horowitz 1976). According to the model until traumatic experiences are psychologically assimilated the individual will oscillate between the experience of intrusive thoughts in one moment and avoidance strategies in the next. Following this model, IES has two subscales: The *Intrusion* and *Avoidance* (also prominent in other reports of psychological reactions to stress e.g. Horowitz 1976; Janis, 1969; Lazarus, 1966 & Lindemann, 1944). The Intrusion responses include repeated thought about the trauma, e-g, unbidden thought and images, troubled dreams, strong wave of feelings and repetitive behavior. The Avoidance includes the effortful avoidance of the situations that remind the trauma such as denial of the meanings and consequences of the event behavior inhibitions or counter activity and the awareness of emotional numbness. As an individual cannot report the unconscious aspects of denial process, but only felt such as numbness, the term Avoidance, therefore, instead of denial is used to describe this subscale. The Intrusion subscale

includes seven items and the Avoidance subscale is consisted of eight items. Score on each item range from 0 – 5 with the following response categories, *not at all* (0) *rarely* (1) *sometime* (3) and *often* (5). The respondents rate the frequency of their thought in the past seven days. The maximum score range from 0 to 75. High scores indicate higher perceived level of stress. The score can be separated into following categories. *Mildly significant level of stress* (9-25), *moderately significant level of stress* (26-43), and (44-75) *severe post traumatic stress*. The test- retest reliability computed by the author is 0.87 for total stress core, 0.89 for the Intrusion subscale and 0.79 for the Avoidance subscale. The split half reliability of the total score is 0.86. The validity established by the internal consistency using Cranach's Alpha (Cronbach, 1996 & Nunally, 1978) is 0.78 for the Intrusion and 0.82 for the Avoidance subscale. A correlation of 0.42 ($P < .0002$) between Intrusion and Avoidance subscales indicates that two subscales are associated but do not measure identical dimensions. The IES has been found a valid and reliable instrument in adult cancer patients including breast cancer (Osowiecki & Compas, 1998) and women with increased risk of breast cancer (Thewes, Meiser & Hickie, 2001). In the present study the alpha computed is 0.80 for all items.

Procedure

Formal permission from the hospital authority before the study was obtained. The medical staff was requested for cooperation in the data collection. Women fulfilling the eligibility criteria were given information about the nature of the study. Each woman was individually interviewed and ensured about the confidentiality of their information provided. Data were collected at scheduled hospital time. Women were classified on high and low optimism category on the basis of their LOT-R scores. The IES was administered on these women to measure their stress level at pre and post diagnosis stage of breast cancer.

Scoring and statistical analysis

Standard procedures were used for scoring both the scales and then were statistically analyzed through SPSS package.

Results

Table-1
Mean Scores, Standard Deviations and t-Values showing pre diagnosed difference between high and low optimistic respondents on IES.

Optimism Scores	M	SD	t-Values	Sig
High (n=41)	37.42	8.11	3.28	.001
Low (n=39)	41.01	10.58		

$p < .001$

Data presented in table 1 reveal significant difference between high optimistic and low optimistic women in terms

of psychological stress before diagnosis ($t = 3.28$, $df = 78$, $P < .001$). High optimistic women experience less stress before diagnosis as compared to low optimistic women.

Table 2
Mean Scores, Standard Deviations and t-Values showing post diagnosed difference between high and low optimistic women on IES.

Optimism Scores	M	SD	t-Values	Sig.
High (n= 41)	37.71	9.71	5.27	.001
Low (n= 39)	45.88	11.91		

P<.001

Data presented in table 2 demonstrate that high optimism exerts a significant influence on the psychological stress of women ($t = 5.27$, $df = 75$, $P < .001$). Women with higher optimism experience less stress after the positive diagnosis of breast cancer than those with low optimism.

Table 3
Mean Scores, Standard Deviations and t-Values showing difference in degree of stress at pre and post diagnosed stage of breast cancer by low optimistic women.

Low Optimistic	M	SD	t-Values	Sig.
Pre-Diagnosed (n=41)	41.01	10.58	22.1	.001
Post Diagnosed (n=39)	45.88	11.91		

p<.001

Table 3 shows that low optimism contributed to further increase stress of the women after diagnosis of breast cancer ($t = 22.21$, $df = 37$, $P < .001$).

Discussion

The present study aimed to examine the effect of optimism on the psychological stress faced by breast cancer patients at pre and post state of diagnosis. The total score on the Life Orientation Test Revised was used to measure the high and low optimism level and total score (intrusion & avoidance) on the Impact of Event Scale was used to measure the stress level of the women before and after the diagnosis of breast cancer. The findings reveal significant effect of optimism on the psychological stress in the respondents. The results clearly support the first and second hypothesis which postulated a significant effect of optimism on the stress level of the women before and after the diagnosis of breast cancer. Data (table 1& 2), show that mean scores of the women with higher optimism is significantly less as compared to women with low optimism

on the IES. These results suggest that higher optimistic women experience significantly less psychological stress both before and after the diagnosis of breast cancer than those with lower level of optimism. These results are in line with the previous research which demonstrated a positive association between higher optimism and better psychological adjustment and health outcomes (Brisette, Scheier & Carver, 2002; Carver & Gains, 1987; Segerstrom, Taylor, Kemeny & Fahey, 1998).

As an internal resource, optimism has long been thought an important factor to confront adversity including specific health threats such as the diagnosis of breast cancer (Carver, et al). David, Montgomery and Bovbjerg (2006) studied breast cancer women scheduled for breast surgery. Result showed that breast cancer women with high optimism were less depressed than women with lower optimism.

Schou, Ekeberg and Ruland (2005) in a longitudinal study examined relationship between optimism, quality of life and coping strategies among 165 women diagnosed for breast cancer. Their findings demonstrated that optimistic women responded to the diagnosis and treatment with fighting spirit which in turn had positive effect on their quality of life while the pessimistic responded with hopelessness / helplessness which had negative impact on their quality of life. Other research found that breast cancer survivors who were 5 to 13 years post breast cancer surgeries showed higher dispositional optimism and better quality of life (Carver, Smith, Petronis & Antoni, 2006).

Several researches reported that higher optimism and better psychological adjustment have been linked with increase survival rate. For example in a study the researchers identified 534 lung cancer patients (both male & female) with optimistic and pessimistic personality who had completed MMPI 18 years before their diagnosis for lung cancer (between 1997 & 2006). These researchers found that on the average patients with optimistic personality survived 6 months longer than the pessimists. Further 5 years survival rates for optimistic was 39.9% significantly greater than the 21.1% for the pessimists, independent of smoking, cancer stage, treatment, comorbidities, age and gender (International Association for Study of Lung Cancer, 2010). In another study Allison, Guichard, Fung and Gilain (2003) examined association between dispositional optimism and survival one year after diagnosis in 101 head and neck cancer patients. They found that patients who scored higher on optimism were more likely to survive after one year of diagnosis than low scorer on the optimism. Similar results were reported by other research (Maruta, Colligan & Malinchoc, 2000). Positive effect of optimism has also been reported among stroke patients. For example, a study published in Science Daily (2011, July 22) researchers analyzed the self-reported stroke and psychological data in 6044 adults over age 50, collected between 2006 and 2008 by an ongoing health and retirement study. These adults stroke free at the start of the study rated their level of

optimism. Result showed that each point increase in optimism level corresponded to 9% decrease in acute risk over two years follow up period even after controlling the factors that might affect stroke. Similar findings were reported by other researchers among patients with cardiovascular disease (Giltay, Kamphuis, Kalmijn, Zitman, & Kromhout, 2006; Tindle et al; 2009). The results obtained in the present study support the first and second research hypotheses.

The third hypothesis of the study assumed that level of stress of women having low optimism will be further intensified after the diagnosis of breast cancer. Data reveal (table 3) that women with low optimism obtained higher mean score on the IES after the diagnosis of breast cancer as compared to mean scores they obtained before the diagnosis. These results suggest that the stress level of these women with low optimism increased after the diagnosis of breast cancer.

Research suggests that optimism is a healthy life style which may influence the disease. For example, optimists are more physically active, smoke less, eat more fruits and vegetable and drink moderate amount of alcohol (Giltay, Geleijnse, Zitman, Buijse & Kromhout, 2007). Solberg-Nes, Evans and Segerstrom (2009) examined impact of optimism on college retention, motivation and adjustment in 2189 participants. Their results indicated that dispositional and academically optimistic students were highly motivated, better adjusted and less likely to drop out. Further their academic optimism was also associated with higher grade point average. In a recent study Busseri (2013) compared optimists and pessimists in terms of past, present and anticipated future life satisfaction in 3871 adults across 6 age decades. He found that optimists rated the three temporal perspectives more positively. Further, their present life satisfactions were more consistently related to optimism. Findings of the study clearly support the third hypothesis.

The findings of the present study conclude that women with higher optimism experienced less stress pre and post diagnosed breast cancer than those with lower optimism. It seems clear in the light of the present study that the personality trait optimism plays an important role in tempering stress, related to diagnosis and experience of breast cancer.

Implication

The findings of the present study have important implications for the clinicians and nurses to recognize, encourage and promote these traits in the patients to help them more effectively manage their disease and achieve a better quality of life. In fact it is through such an outlook as many of us actually believe that can improve one's chances of defeating the disease.

Limitations

The main limitation of the present study is that the data was obtained from a homogenous sample, in that all the women were married, belonged to middle socio economic class. Sample size in the study was not large enough; the result cannot be confidently generalized.

Suggestions

On the basis of above mentioned limitations following suggestions are recommended.

1. The effect of optimism on stress in more diverse sample including, unmarried, uneducated and those of high and low socio economic status may be examined.
2. Further researchers can use a large and more representative sample in order to generalize the results confidently.
3. The impact of optimism may be investigated in women with advanced breast cancer and after different type of surgeries such as lumpectomy and mastectomy.

References

- Aspinwall, L.G; & Taylor, S.E. (1992). Modeling cognitive adaptation: A longitudinal investigation of the impact of individual differences and coping on college adjustment and performance. *Journal of Personality and Social Psychology*, 63, 989-1003. Doi: 10.1037/0022-3514. 63.989.
- Arduino, T; Tessarolo, M; Bellino, R. Colombatto, S; Leo, L & Wierdis, et al. (1996).
- Allison, P.K; Guichard, C; Fung, K; & Gilain, L. (2003). Dispositional optimism predicts survival status 1 year after diagnosis in head and neck cancer patients. *Journal of Clinical Psychology*, 21, (3), 543-48. Doi: 10. 1200/jcp. 2003.10.092
- American Heart Association. (2011, July 28). Optimism associated with lower risk of having stroke. *Science Daily*. Doi: 10.1161/STROKEAHA.
- Breast cancer awareness: Month long drive to educate women. *The Express Tribune* (2013, October 2). Retrieve www.breastcancercampaign.org/.
- Brissette, I; Scheier, M; & Carver, C.S. (2002). The role of optimism in social network development: Coping and psychological adjustment during a life transition. *Journal of Personality and Social Psychology*, 82, 101-111.
- Busseri, M.A. (2012). How dispositional optimists and pessimists evaluate their past, present, and anticipated future life satisfaction: A lifespan

- approach. *European Journal of Personality*, 27, (2), 185-99. Doi: 10.1002/Per.1854.
- Carver, C.S; Smith, R.G; Petronis, V.M.; & Antoni, M.H. (2006). Quality of life among long term survivors of heart cancer: Different types of antecedents. *Psycho-Oncology*, 15, (9), 749-58. Doi:10.1002/Pon.1006.
- Carver, S.C, & Gaines, J.G. (1987). Optimism, pessimism and post-partum depression. *Cognitive Therapy and Research*, 11, 449-62. Retrieved from www.psy.miami.edu/faculty/carver/documents/PO3-opt.sip-jpsr.pdf.
- Carver, C. S. ; Pozo, C; Harris, S.D; Noriega, V. Scheier, M.F; & Robinson, et al. (1993). How coping mediates the effect of optimism on distress: A study of women with early stage breast cancer. *Journal of Personality and Social Psychology*, 65, 375-90. Doi:10.1037/0022-3514.65.2.375.
- Carver, C.S; Pozo, C; Harris, S.D; Noriega, V. Scheier, M.F; & Robinson, et al. (1994b). Optimism versus pessimism predicts the quality of women's adjustment to early stage breast cancer. *Cancer*, 73(4), 1213-20, Doi: 10.1037/02786133.24.5.508.
- Carver, C.S; Lehman, J.M; & Antoni, M.H. (2003). Dispositional optimism predicts illness-related disruption of social and recreational activities among breast cancer patients. *Journal of Personality and Social Psychology*, 84, (4) 813-21. Retrieved from www.psy.miami.edu/faculty/carver/ccrespo.htm/
- Carver, C.S; Pozo-Kaderman, C; Price, A.A; Noriega, V; Harris, S.D, & Derhagopian, et al. (1998). Concern about aspects of body image and adjustment to early stage breast cancer. *Psychosomatic Medicine*, 60, 168-74. Retrieved from shodhganga.inflibnet.ac.in/jspui/bitstream/10603.
- Cohen, F; Kearneg, K.A Zegans, I.S; Kemeny, M.E; Neuhaus, J.M; & Stites, D.P. (1999). Differential immune system changes with acute and persistent stress for optimists' vs pessimists. *Brain Behaviour and Immunity* 13, 155-74. Doi.10.1006/brbi.1998.0331.
- Change, E.C; D'Zurilla, T.J; & Maydeu-Olivares, A. (1994). Assessing the dimensionality of optimism and pessimism using a multimeasure approach. *Cognitive Therapy and Research*, 18, 143-60. Retrieved from www.ub.edu/gdue/problemasen.html
- David, D; Montgomery, G.H; Bovbjerg, D. H. (2006). Relationship between coping responses and optimism-pessimism in predicting anticipatory psychological distress in surgical breast cancer patients. *Personal Individual Difference*, 40, 203-13. Doi:10.1016/paid.2005.05.018.
- Giltay, E.J; Geleijnse, J.M; Zilman, F.G; Buijsse ,B ; Kromhout, D. (2007). Life style dietary of Psychosomatic Research, correlates of dispositional optimism in men: The zuphen elderly study. *Journal of Psychosomatic Research*.63, (5) 483-90, Doi:10./016/j.jpsychores.2007.07.014.
- Horowitz, M.J; Wilner, N; & Alvarez, W. (1979). Impact of event scale: A measure of subjective stress. *Psychosomatic Medicine*, 41 (3), 209-18. Retrieved from www.ncbi.nlm.nih.gov/pubmed/2472086
- International Association for Study of lung cancer. (2010, March, 24). Lung cancer patients with optimistic attitude have longer survival, study find. *Science Daily*. Retrieved from www.Sciencedaily.com/releases/2010/03/1003031656.htm
- International Agency for Research on Cancer. (2008). *World Cancer Report*. Retrieved from www.iavc.fr/en/publications/pdfs-online/wcr2008
- Kurtz, M.E. (2008). Patient optimism and mastery-Do they play a role in cancer patients' management of pain and fatigue? *Journal of Pain and Symptoms Management*. Retrieved from www.jpsmjournal.com/article/50885-3924 (08)00058-4/abstract.
- Miller, D.L; Manne, S.L; Taylor, K; Keates, J; & Dougherty, J. (1996). Psychological distress and well-being in advanced cancer: The effects of optimism and coping. *Journal of clinical psychology in Medical Setting*, 3, 115-30. Doi:10.1007/BFO 1996132.
- Maruta, T; Colligen, R.C; & Malinchoc, M. et al. (2000). Optimists vs pessimists: Survival rate among medical patients over a 3 year period. *Mayo Clinical Process* 75, 140-43. Retrieved from <http://jco.ascopubs.org/content/21/3/543.full>.
- Parkin, D.M. (2001). Global cancer statistics in the year, 2000, *Landcet Oncology*, 2, 533-40. Doi:10.1002/ijc.1440.
- Public Health: Pakistan's breast cancer patients reporting late. *The Express Tribune*, February, 2014).Retrieved from tribune.com.pk

- Rainkkonen, K; Matthews, K.A; Flory, J.D; Owens, J.F; & Gump, B.B. (1999). Effects of optimism, pessimism and trait anxiety on ambulatory blood pressure and mood during everyday life. *Journal of Personality and Social Psychology*, 76, 104-13. Retrieved from www.sci.sdsu.edu/cgallo/galloghaedbrackken.pdf
- Reduced IL-2 level concentration in patients with breast cancer as a possible risk factor for relapse. *European Journal of Gynaecological Oncology*, 17, 1329-38.
- Scheier, M.F & Carver, C.S. (1985). Optimism, coping and health: Assessment and implications of generalized outcome expectancies. *Health Psychology*, 4, 219-47. Doi: apa.org/?Uid=19862-001pubmed/4029106.
- Scheier, M.F; Carver, C.S; & Bridges M.W. (1994). Distinguishing optimism from neuroticism and trait anxiety, self-mastery and life esteem: A re-evaluation of the life orientation test. *Journal of Personality and Social Psychology*, 67, 1063-78. Retrieved from www.psy.miami.edu/faculty/ccarver/ccresop.html
- Scheier, M.F; Magovern, G.J; Abbott, R.A; Matthews, K.A; Owens, J.F& Lefebvre. et al. (1989). Dispositional optimism and recovery from coronary artery bypass surgery: The beneficial effects on physical and psychological well being. *Journal of personality and Social Psychology*, 57, 1024-40. Retrieved from www.ncbi.nlm.nih.gov/NCB Literature Bookshelf.
- Spiegel, D;& Sephton, S. (2001). Psychoneuro-immune and endocrine pathways in cancer: Effects of stress and support. *Seminars in Clinical Neuropsychiatry*, 6, 252-65. Retrieved from www.ispne.org/about-ISPI
- Spencer, S.M; Lehman, J.M; Wynings, C; Arena, P; Carver, C.S. & Antoni, M.H, et al. (1999). Concerns about breast cancer and relations to psychosocial well-being in a multiethnic sample of early stage patients. *Health Psychology*, 18, 159-68. Retrieved from, www.psy.miami.edu/faculty/ccarver/ccresbc.html
- Schou, I; Ekeberg, O; & Ruland, C.M. (2005). The mediating role of appraisal and coping in the relationship between optimism pessimism and quality of life. *Psycho-Oncology*, 14(9), 718-27. Doi:10.1002/Pon.896.
- SelbergNes, L; Evans, D. R & Segerstrom, S.C. (2009). Optimism and college retention: Mediation by motivation; performance and adjustment. *Journal of applied Social Psychology*, 39, 1887-1912. Doi: 10.1111/j.1559-1816.2609,00508.x
- Sergestrom, S.C; Taylor, S.E; Kemeny, M.E; & Fahey, J.L. (1998). Optimism is associated with mood coping and immune changes in response to stress. *Journal of Personality and Social Psychology*, 74, 1646-55. Doi:10.1037/0022-3514.74.6.1646.
- Tindle, H.A; Chang, Y.F; Kuller, L.H; Manson, J.E; Robinson, J.G. Rosal, M.C. et al. (2009). Optimism, cynical hostility and incident coronary heart disease and mortality in the women's health initiative. *Circulation*, 120(8), 656-62. Doi: 10.1161/CIRCULATIONAHA.108.8262.
- Thewes, B; Meiser, B; & Hickie, I.B. (2001). Psychometric properties of the impact of event scale among women at increased risk of hereditary breast cancer. *Psycho-Oncology*, 10, 459-68. Retrieved from www.ncbi.nlm.nih.gov/pubmed/11747058
- Weiss, D.S; & Marmar, C.R. (1997). The impact of event scale-revised. In J.P. Wilson & T.M. Keane. (Eds). *Assessing Psychological trauma and PTSD* PP.399-41. New York: Guilford

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