Connecting the dots: understanding the relationship between religiosity, psychological resilience and depression in breast cancer patients

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ABSTRACT

Introduction: Death anxiety, fear of abundance, isolation, stigma of the disease and medication side effects are among the most common sources of anxiety and depression in patients with breast cancer.
Purpose: To examine the possible relationship between religiosity, psychological resilience and depression on breast cancer patients.
Materials and methods: A cross-sectional design was employed in this study which 152 breast cancer patients participated. Data were collected with the following instruments: Patient Health Questionnaire-2-item scale, Connor-Davidson Resilience Scale 25 and Centrality of Religiosity Scale and a special designed sheet reporting social, demographic and clinical characteristics. Statistical analyses were conducted with the Statistical Package for the Social Science V25. Descriptive statistics such means, and frequencies were calculated and inferential statistics such correlation test, simple and multiple regression analysis were applied.
Results: Approximately 1 in 3 patients suffered symptoms of depression while they were reporting moderate religiosity and resilience values. Based on the four-step mediation analysis religiosity was strongly associated with psychological resilience but it was not found to affect directly either depression, but psychological resilience can be a mediator between religiosity and depression.
Conclusion: This study supports the notion that religiosity and spirituality can have a beneficial influence on health outcomes.
Keywords: Religiosity, breast cancer, depression, psychological resilience

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INTRODUCTION

According to World Health Organization (WHO), breast cancer is the most frequent cancer among women and it is estimated that over 1.5 million women each year are affected from breast cancer and the rates are higher among women in developed countries. Moreover, in 2015 nearly 570,000 women died from breast cancer, number that consisted 15% of cancer deaths among women [1].

Being diagnosed with breast cancer and cancer in general is a major stressor in one's life, mostly since the diagnosis makes the individual to confront his own mortality as he faces the prospect of death [2]. In addition a variety of changes are induced in patients daily life and the variety of therapeutic interventions that are used with individuals with breast cancer may contribute to alteration of body image. As a result, patients may feel less attractive and have low self-esteem whch may lead to depression [3]. The prevalence of depression among breast cancer patients varies from 4.5 up to 42% and has been associated with the progress of the disease itself, the amount of the experienced pain, the functional level and autonomy [4-6]. While it is estimated that prevalence rates for anxiety are more increased. More specifically according to recent studies 30-40% of people diagnosed with breast cancer are experiencing moderate and severe levels of anxiety. Breast cancer may lead to many associated factors of anxiety such as the disease itself and various somatic symptoms such as agitation, headaches, nausea, vomiting, anorexia and menstruation disturbances. Death anxiety, fear of abundance, isolation, stigma of the disease and medication side effects are among the most common sources of anxiety in breast cancer [6-8]. While one of the greatest challenges in the detection of depression and anxiety in breast cancer patients is to distinguish between the symptoms of depression/anxiety and those caused by the cancer itself or by its treatment.

Religion and spirituality are for many people important dimensions of their existence as they are a source of support that contributes to the wellbeing and the daily difficulties of their lives [9]. Also, the search for the use of religious support is getting more and more frequent for patients dealing with chronic diseases, such as cancer [10]. According to the study of Choumanova, Wanat, Barrett and Koopman the use of religiosity as a coping strategy may facilitate the process of recovery [11]. While in the context of a study conducted by Khodaveirdyzadeh et al in 2016, it was found that the use of spiritual coping strategies can have a crucial role in adjustment process in patients with breast cancer [12]. The impact that religion and spirituality may have on the particular patient group has been a subject of controversy and led to contradictory results of many studies. According to a study conducted by Gall, Miguez de Renart and Boonstra, an established relationship with god and religious coping behavior were related to the breast cancer patient's well-being and religiosity was strongly correlated with a lack of psychological distress [13]. Nairn and Merluzzi yielded the exact opposite results as they found that religious support did not mediate symptom distress and was not directly related to Quality of Life (QoL) among breast cancer patients [14]. Other studies suggested that a mediating variable must interact to link religiosity and psychological outcomes. For example according to the study of Lim and Yi in which 161 women diagnosed with breast and gynecologic cancer were participated, it was found that spirituality and religiosity may increase social support and social support can have a positive effect on QoL of those patients [15].

Aim of the present study is to examine the possible relationship between religiosity, psychological resilience and depression on breast Cancer patients. Moreover, we aim to examine the effect of religiosity on psychological resilience and depression among breast cancer patients.

MATERIALS AND METHODS

Study design, Participants and Setting

A cross-sectional design was employed in this study which was conducted in outpatient oncology department of a Greek hospital between February and March 2017. Women who were attending the facility for follow up after their mastectomy or lumpectomy, were recruited to participate in the study. Inclusion criteria were to be 18 years old or older, underwent breast surgery, ability to communicate in Greek language and to be orientated in time and space and not being diagnosed with a psychiatric disease. From the total of 180 eligible patients that were recruited only 164 agreed to participate in this study and completed and submitted the questionnaire. After screening for incomplete data 152 questionnaires remained and were included to the analysis.

Ethical considerations

Patients who met the entry criteria were informed by the researcher for the purposes of the study and participated only after they had given their written consent. All of the patients participated in the study on a voluntary basis and had their anonymity preserved. All participants were informed about their rights to refuse or to discontinue their participation, according to the ethical standards of the Helsinki Declaration of 1983. The study was approved by the Medical Research Ethics Committee of the hospital.

Instruments

A four part self-administrated Questionnaire was used for data collection in this study consisting by:

1. A sheet containing sociodemographic and clinical characteristics such as: age, living arrangement, number of children, educational level, type of surgery and stage of cancer.
2. Patient Health Questionnaire Two-Item (PHQ-2) questionnaire was used to assess depression. These is ultra-brief instrument that IS used for the detection of depression, suitable for use in epidemiological studies. It is a four point Likert scale ranging from "0 = not at all" to "3 = nearly every day" and they offers results from 0 to 6 for each questionnaire. According to receiver-operating characteristic curve analysis, the optimal cutpoint is ≥ 3 [16-19].
3. Psychological resilience was assessed using the Connor-Davidson Resilience Scale 25 (CD-RISC25). The CD-RISC25 is a unidimensional measure that reflects the ability of an individual to cope and recover from challenges such as illness, emotional pressure or painful feelings. Test is consisted of 25 questions that are answered in a a 5-point scale (0 = "not true at all" to 4 = "true nearly all the time") providing a total sum score ranging from 0–100, with higher scores reflecting greater resilience. [20,21].
4. Religiosity was assessed using the Centrality of Religiosity Scale (CRS) which consists of 15 items (CRS-15) answered on a 5-point Likert scale ranging from "not at all" to "very much"[22]. The Greek version of the instrument was used in this study [23].

Statistical Analysis

Descriptive statistics such as means and standard deviations for continuous data and frequencies were used to present sample social, demographic and clinical characteristics. Normality was first tested for each variable. Pearson correlation coefficient was used to identify the relationship between the examined variables. Simple linear regression analysis with enter method was applied to identify the effect of religiosity on resilience and mental health of breast cancer patients and to identify the effect of resilience on mental health of breast cancer patients. Statistical analyses were conducted with SPSS, version 25.0. Significance for all statistical tests was set at 0.05 or less (2-tailed).

RESULTS

A total of 152 breast cancer patients were included in this study. The mean age of the patients was 53.25 years (SD=12.10) and most of them were married 55.3%, urban residents 58,6% with a high school degree 41.4%. Regarding sample's clinical characteristics, 69.7% of the patients underwent mastectomy and were diagnosed in stage three breast cancer 43.4%. Sample's demographic, social, and clinical characteristics are provided in Table 1.

The mean score of religiosity was 3.4±1, for depression was 2.08±1.7, and for psychological resilience was 65.55±19.0. Of the subjects, 38.2% of the cases were classified as cases of depressed.

Correlations of the variables are shown in Table 2. Religiosity was found to be strongly related only to psychological resilience (r=0.246*p<0.001), while psychological resilience was found to be strongly related with depression and anxiety as well.

For exploring the relationship between religiosity, psychological resilience, depression and the possible mediating effect of psychological resilience the four step madiating analysis was perfomed. According to the recommendations three simple linear regression and one multiple regression analysis were perfomed (Tables 3-6) [24]. Depression seemed to be affected from religiosity and psychological resilience. More specific as is it shown in Table 1, first we calculated the effect of religiosity in depression using simple linear regression, which demostrated a statistical significant effect (β = -0.316 (0.139), t=-2.274 p=0.024).

The second step included the calculation of the effect of religiosity in psychological resilience which also proved significant (β=5.80 (1.39), t=4.151, p=0.000).

In the third step the effect of psychological resilience in depression was examined and it was found to be significant (β = -0.037 (0.007), t= -4.807, p=0.000).

In the final fourth step multiple regression analysis was perfomed with depression as dependent variable and religiosity and psychological resilience as predictors.

The purpose of this test was to see if the effect of religiosity is reduced in the presence of psychological resilience, as it was and thus the madiating effect of psychological resilience was proved; results indicated that it is not affected (β = -0.124 (0.139), p=0.374).

In addition, the Sobel statistic value testing the mediating effect was statistically significant (p < 0.001) (see Figure 1)

Table 1. Sample characteristics

		N (%)
Marital Status	Single	24(15.8)
	Married	84(55.3)
	Divorced	26(17.1)
	Widowed	18(11.8)
Area of Residence	Rural	26 (17.1)
	Semi-urban	37 (24.3)
	Urban	89 (58.6)
Educational Level	Mandatory Education	21 (20.3)
	High School	63(41.4)
	University	58(38.2)
Occupation	Unemployed	15(9.9)
	Household	22(14.5)
	Private Sector	21(13.8)
	Public Sector	30(19.7)
	Pension	29(19.1)
	Other	35(23)
Religion Affiliation	Christian Orthodox	135 (88.8)
	Christian Catholic	9 (5.9)
	Muslim	2 (1.3)
	Other	6 (3.9)
Stage Of Cancer	I	25 (16.4)
	II	44 (28.9)
	III	66 (43.4)
	IV	17 (11.2)
Type of Surgery	Mastectomy	106 (69.7)
	Ongectomy	46 (30.3)

Table 2. Correlations between Religiosity. Psychological resilience. Depression and Anxiety

	Religiosity	Psychological Resilience	Depression
Religiosity	1	**0.246****	-0.138
Psychological Resilience	**0.246****	1	**-0.392****

Table 3. The effect of religiosity in depression

R^2	F	p	β	SD	t	p
41%	2.279	0.050	-0.316	0.139	-2.274	0.024

Table 4. The effect of religiosity in resilience

R^2	F	p	β	SD	t	p
14%	6.060	0.000	5.806	1.39	4.151	0.000

Table 5. The effect of resilience in depression

R^2	F	p	β	SD	t	p
41%	6.015	0.000	-0.037	0.007	-4.807	0.000

Table 6. The effect of religiosity and resilience in depression

R^2	F	p		β	SD	t	p
41%	5.138	0.000	Resilience	-0.033	0.008	-4.254	0.000
			Religiosity	-0.124	0.139	-0.891	0.374

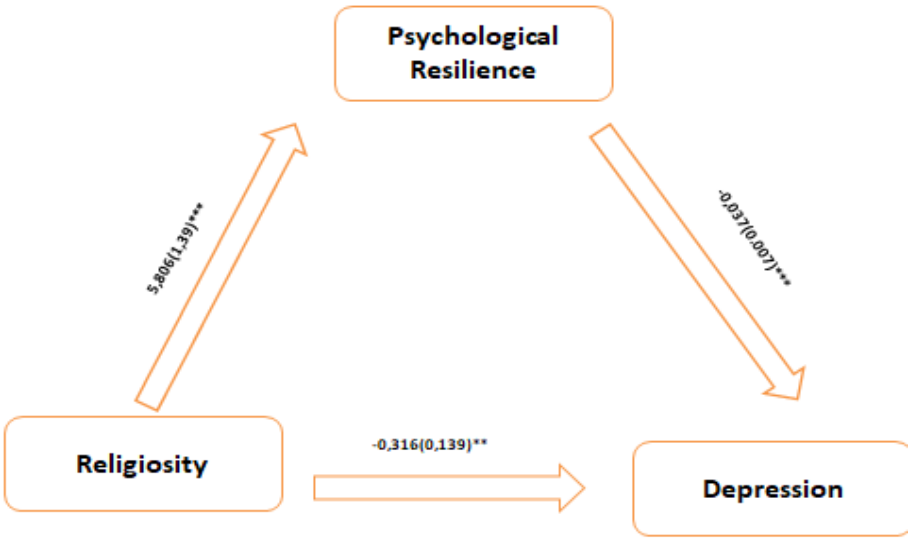

Figure 1. A pathway leading to understand how religiosity imrove Depression in Breast Cancer patients

DISCUSSION

The purpose of this study was to examine the possible relationship between religiosity, psychological resilience and depression on breast Cancer patients and to understand the way that religiosity can affect psychological resilience and depression among breast cancer patients. Although religiosity was strongly associated with psychological resilience no association was found between religiosity with depression. To the contrary, according to our results, a strong relationship between resilience and depression was found. The statistical tests and their results lead us to the conclusion that although depression does not seem to be affected by religiosity, it positively affects resilience, which, in its turn, positively affects anxiety and depression, suggesting that resilience can be a mediating factor between these variables.

First, according to Huber's categorization Greek breast cancer patients can be characterized as having a moderate level of religious commitment. The mean value of religiosity in our sample is similar to many other European countries such as Spain and Italy [22]. There is a general assumption that a cancer diagnosis can be associated with changes in a person's religiosity, although some other factors can influence these changes. Being diagnosed with cancer can cause various changes in one's life related to ages and social roles [25]. In addition the importance of evaluating and integrating religiosity and religious preference of breast cancer patients is highlighted in many contemporary researches. It is argued that religion and spirituality can contribute to coping with their condition and should be recognized by health care professionals [26].

According to our results 38.2% were classified as depressed, percentage that can be considered as very high. Similar high percentages were reported in a recent study conducted in Nepal and which involved evaluation of 149 patients. Nonetheless, such results disagree with other studies that self-reported measures of the prevalence of depression among cancer patients varying from 7-17% and those percentages are decreasing in studies which psychiatrists or clinical psychologists are conducting diagnostic interviews [28,29]. In addition, it is worth mention that our results for high prevalence of depression could be interpreted in the light of the general social and economic situation in Greece and the increase in mental distress in the general population [30].

One of the key findings in our study is that, religiosity was strongly associated with psychological resilience, but it was found not to directly affect either depression or anxiety. When in this equation psychological resilience is added, we

see that it can be a mediator between religiosity and depression. Our results reinforce previous findings in which religiosity or spirituality can affect mental health outcomes as mediators through aspects as social support [15], sense of coherence [31] and physical/emotional functioning among others [32]. In general, religiosity is referring to faith in higher power and that everything is a part in a greater plan. In this light breast cancer patients may find a relief and draw strength to continue and to deal with their disease. Taking this under consideration, the finding that psychological resilience mediates the relationship between religiosity and depression may be understandable.

There are some limitations in this study that should be taken under consideration. First, the use of self-reported measures that totally relies on the honesty of the individual which is reporting. Another limitation is related to the sample of our study that could be characterized as small, as the convenience sampling that was applied leads to a potential selection bias.

CONCLUSION

This study adds up to the existing evidence of the international literature regarding the positive effects of religion and spirituality in health outcomes.

Religiosity and Psychological resilience may contribute to coping with breast cancer and in promoting and maintaining mental health.

In conclusion it is valued to integrating religiosity and taking under account religious belief and preference when providing adequate and satisfactory care.

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Conflicts of interest

The authors declare that they have no conflicts of interest.

REFERENCE

1. Breast cancer. World Health Organi-zation [Internet] 2018 [cited 2018 Sept 1]. Available from: http://www.who.int/-cancer/prevention/diagnosis-screening/breast-cancer/en/
2. Burgess C, Cornelius V, Love S, Graham J, Richards M, Ramirez A. Depression and an-xiety in women with early breast cancer: five year observational cohort study. BMJ. 2005 Mar 26;330(7493):702.
3. Karamouzis M, Patsou E, Alexias G, Anagnostopoulos F. Association between physical activity, psychological mood profile and self-esteem among breast cancer survivors. Ann Oncol. 2016;27(suppl_6).
4. Zainal N, Nik-Jaafar N, Baharudin A, Sabki Z, Ng C. Prevalence of Depression in Breast Cancer Survivors: a Systematic Review of Observational Studies. Asian Pac J Cancer Prev 2013;14(4): 2649-56.
5. Jafari A, Goudarzian AH, Nesami MB. Depression in Women with Breast Cancer: A Systematic Review of Cross-Sectional Studies in Iran. Asian Pac J Cancer Prev 2018 Jan27; 19(1):1-7.
6. Fradelos EC, Papathanasiou IV, Veneti A, Daglas A, Christodoulou E, Zyga S, Kourakos M. Psychological Distress and Resilience in Women Diagnosed with Breast Cancer in Greece. Asian Pac J Cancer Prev. 2017 Sep 27; 18(9):2545-2550.
7. Ching L, Devi M, Kim Emily DNurs A. Anxiety in patients with breast cancer undergoing treatment: a systematic review. JBI Database System Rev Implement Rep. 2010;8(25):1016-57.
8. Baqutayan SMS. The Effect of Anxiety on Breast Cancer Patients. Indian J Psychol Med. 2012 Apr;34(2):119-23.
9. Fradelos E, Tzavella F, Koukia E, Papathanasiou I, Alikari V, Stathoulis J et al. Integrating Chronic Kidney Disease Patient's Spirituality in their Care: Health Benefits and Research Perspectives. Mater Sociomed. 2015;27(5):354.
10. Borges M, Caldeira S, Loyola-Caetano E, Magalhães P, Areco F, Panobianco M. Spiritual/Religious Coping of Women with Breast Cancer. Religions 2017;8(11):254.
11. Choumanova I, Wanat S, Barrett R, Koopman C. Religion and Spirituality in Coping with Breast Cancer: Perspectives of Chilean Women. Breast J 2006 Jul-Aug;12(4):349-52.
12. Khodaveirdyzadeh R, Rahimi R, Rahmani A, Ghahramanian A, Kodayari N, Eivazi J. Spiritual/Religious Coping Strategies and their Relationship with Illness Adjustment among Iranian Breast Cancer Patients. Asian Pac J Cancer Prev. 2016;17(8):4095-9.
13. Gall TL, Miguez de Renart RM, Boonstra B. Religious resources in long-term adjustment to breast cancer. J Psychosoc Oncol 2000;18(2): 21-37
14. Nairn RC, Merluzzi TV. The role of religious coping in adjustment to cancer. Psychooncology 2003 Jul-Aug;12(5):428-41
15. Lim JW, Yi J. The effects of religiosity, spirituality, and social support on quality of life: a comparison between Korean American and Korean breast and gynecologic cancer survivors. Oncol Nurs Forum. 2009 Nov;36(6):699-708.
16. Kroenke K, Spitzer RL, Williams JB, Löwe B. The patient health questionnaire somatic, anxiety, and depressive symptom scales: a

systematic review. Gen Hosp Psychiatry 2010 Jul-Aug;32(4):345–59.
17. Kroenke K, Spitzer RL, Williams JB, Monahan PO, Löwe B. Anxiety disorders in primary care: prevalence, impairment, comorbidity, and detection. Ann Intern Med. 2007 Mar 6;146(5):317–25.
18. Kroenke K, Spitzer RL, Williams JB. The Patient Health Questionnaire-2:validity of a two-item depression screener. Med Care. 2003 Nov;41(11):1284–92.
19. Löwe B, Wahl I, Rose M, Spitzer C, Glaesmer H, Wingenfeld K, Schneider A, Brähler E. A 4-item measure of depression and anxiety: validation and standardization of the Patient Health Questionnaire-4 (PHQ-4) in the general population. J Affect Disord. 2010 Apr;122(1-2):86-95.
20. Connor KM, Davidson JR. Development of a new resilience scale: the Connor-Davidson Resilience Scale (CD-RISC). Depress Anxiety. 2003;18(2):76–82.
21. Windle G, Bennett KM, Noyes J. A methodological review of resilience measurement scales. Health Qual Life Outcomes. 2011 Feb;9(1):8.
22. Huber S. The Centrality of Religiosity Scale (CRS). Religions 2012; 3: 710–724.
23. Fradelos EC, Kourakos M, Zyga S, Tzavella F, Tsaras K, Christodoulou E, Daglas A, Papathanasiou IV. Measuring Religiosity in Nursing: Reliability, Validity and Psycho-metric Properties of the Greek Translation of the Centrality of Religiosity Scale-15. Am J Nurs. 2018;7(3-1):25-32.
24. Baron RM, Kenny D. The moderator-mediator variable distinction in social psychological research: Conceptual, strategic and statistical considerations. J Pers Soc Psychol 1986; 51(6):1173–82.
25. McFarland MJ, Pudrovska T, Schieman S, Ellison CG, Bierman A. Does a cancer diagnosis influence religiosity? Integrating a life course perspective. Soc Sci Res. 2013; 42(2):311-20.
26. Feher S, Maly R. Coping with breast cancer in later life: the role of religious faith. Psychooncology. 1999;8(5):408-16.
27. Shrestha JS Social support, quality of life and mental health status in breast cancer patients. Cancer Rep Rev.2017;1
28. Walker J, Holm Hansen C, Martin P, Sawhney A, Thekkumpurath P, Beale C, Symeonides S, Wall L, Murray G, Sharpe M. Prevalence of depression in adults with cancer: a systematic review. Ann Oncol. 2013;24(4):895-900.
29. Krebber AMH, Buffart LM, Kleijn G, et al. Prevalence of depression in cancer patients: a meta-analysis of diagnostic interviews and self-report instruments. Psychooncol. 2014;23(2): 121-30.
30. Economou M, Angelopoulos E, Peppou L, Souliotis K, Stefanis C. Major depression amid financial crisis in Greece: Will unemployment narrow existing gender differences in the prevalence of the disorder in Greece? Psychiatry Res. 2016;242:260-61.
31. Rohani C, Abedi H-A, Sundberg K, Langius-Eklöf A. Sense of coherence as a mediator of health-related quality of life dimensions in patients with breast cancer: a longitudinal study with prospective design. Health Qual Life Outcomes. 2015 Dec;13:195.
32. Holt CL, Wang MQ, Caplan L, Schulz E, Blake V, Southward VL. Role of religious involvement and spirituality in functioning among African Americans with cancer: testing a mediational model. J Behav Med 2011 Dec;34(6):437-48.