ASSOCIATION BETWEEN RELIGIOSITY AND QUALITY OF LIFE IN WOMEN WITH BREAST CANCER UNDERGOING CHEMOTHERAPY RELIGIOSITY AND QUALITY OF LIFE IN WOMEN WITH CANCER

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ABSTRACT

Objective: To verify the correlation between religiosity and health-related quality of life in women with breast cancer. Method: Analytical longitudinal, prospective study, conducted between January 2019 and March 2020, on a public hospital in Maranhão. A sociodemographic questionnaire and the instruments EORTC-QLQ-C30, EORTC-QLQ-BR23 and DUREL Scale were applied. The data were verified by the Shapiro-Wilk test, Pearson correlation coefficient and Spearman. Results: Eighty women, mean age 52 years, married, with high school education, white, Catholic participated in the research. A positive correlation was observed between religiosity and quality of life in all stages of chemotherapy treatment. Conclusion: The positive association between religiosity and quality of life in women with breast cancer undergoing chemotherapy was the conclusion of our study. Religiosity is an essential factor of quality of life in oncological diseases.

Keywords: Breast Cancer. Chemotherapy. Religiosity. Quality of Life. Woman.

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INTRODUCTION

Cancer patients have many stressors that can affect their quality of life (QoL) [1,2,3]. Therefore, it is of great value that the multidisciplinary team assess QoL in order to develop strategies thus improving QoL [4,5,6].

Among these resources is religiosity, understood as adherence to practices that the individual believes and follows. Religious coping can present itself as an element that contributes to treatment adherence [7,8].

The objective of this study was to verify the correlation between religiosity and HRQoL of women with breast cancer undergoing chemotherapy treatment.

METHOD

STUDY TYPE

A longitudinal, observational, analytical study of the prospective cohort type, with a follow-up time frame of six months.

POPULATION

Women with breast cancer undergoing chemotherapy treatment at the Chemotherapy Service of the Hospital Estadual de Câncer Tarquínio Lopes Filho, located in the city of São Luís - Maranhão. Women with breast cancer in chemotherapy treatment exclusively, in any stage of the disease, aged 18 years or older were included. Excluded were those who were undergoing hormone therapy and/or radiotherapy.

SAMPLE

The sample was sized in a non-probability manner, sequentially including all breast cancer patients undergoing chemotherapy treatment from January 2019 to March 2020.

DATA COLLECTION

After initial presentation and signing of the informed consent form, the data were collected by the researchers, through individual interviews and completion of questionnaires and instruments on the first day of treatment (phase 01) and at the end of six months (phase 02), at the end of the chemotherapy cycles.

The interviews were conducted during the chemotherapy session, in a suitable place, lasting approximately 60 minutes. Three questionnaires were used: questionnaire of sociodemographic and clinical characterization, constructed by the researchers with data such as age, sex, marital status, education, professional occupation, religious activity,

medical diagnosis, previous surgeries, chemotherapy schemes applied in the first phase; the HRQoL questionnaires elaborated by the *European Organization for Research and Treatment of Cancer Quality of Life Questionnaire -Core 30* (EORTC QLQ-C30) and the *Quality of Life Questionnaire - Breast Cancer Module (*QLQ-BR23), both in Portuguese and validated in Brazil, applied in all phases of the research. The EORT QLQ C30 questionnaire is self-explanatory, composed of 30 questions, and divided into three dimensions: general quality of life, functional scales (physical function, emotional function, cognitive function, general function, and social function), and symptom scales (fatigue, pain, dyspnea, insomnia, loss of appetite, nausea and vomiting, constipation, diarrhea, and financial difficulty). The BR23 questionnaire, a specific module for patients who had breast cancer, is composed of 23 questions divided into two dimensions: functional scales (body image, future perspective, sexual function and sexual satisfaction) and symptom scales (chemotherapy effects, concern about hair loss, breast symptoms and arm symptoms). For the evaluation of religious coping, the Duke Religiosity Scale (DUREL) was used, validated for the Brazilian culture by Taunay [9]. It is an instrument that has five items measuring religious involvement associated with the health outcome. Item 1 is about organizational religiosity (OR), in which the frequency of religious meetings is verified. Item 2, non-organizational religiosity (NOR), deals with the frequency of private religious activities, such as prayers and religious programs on open television. Items 3 to 5 comprise intrinsic religiosity (IR) and denote the perspective of the search for the experience of religiosity as an individual objective [9].

DATA ANALYSIS AND TREATMENT

The data from this study were analyzed quantitatively, applying the principles of descriptive and inferential statistics. They were entered into an Excel spreadsheet, with double entry of the answers and their validation. After database validation, the statistical procedures were performed in the SPSS version 19 program, considering a significance level of 5%.

For the descriptive analysis of nominal or categorical variables, measures of position, minimum and maximum values, and standard deviation were used for continuous variables.

Bivariate analysis was performed, demonstrating the association relationship between the variables, in which the Fisher's Exact Test was used. Spearman's Linear Correlation was also used to evaluate the correlation between the domains of the WHOQOL and the DUREL scale. To verify differences between groups, the non-parametric Kruskal-Wallis test and the Mann-Whitney test were used.

ETHICAL ASPECTS

The development of the study met the national and international standards of ethics in research involving human beings, of the National Health Council, and was approved by the Research Ethics Committee of the UNICEUMA University institution with Ruling Nº. 606.999, CAAE: 27793614.6.0000.5084

RESULTS

The sample consisted of 80 women, whose mean age was 52.54 ± 9.54 years, predominantly white, married, Catholic, with a medium level of education [10].

Regarding the HRQoL assessment of patients in phase 01, we observed higher mean QoL scores for the dimensions of the functional scale (physical function) and symptom scale (dyspnea, loss of appetite, nausea and vomiting, constipation, diarrhea, effects of chemotherapy, concern with hair loss, and arm symptoms). The worst mean QoL scores were present within the functional scale (sexual function) and symptom scale (Insomnia) (Table 1) [10].

Table 1: Minimum, maximum, mean, and standard deviation values of the responses for the domains of the Quality of Life questionnaires in phase 01 and phase 02 chemotherapy oncology treatment.

EORTC QLQ-C30 Questionnaire									
	Dimensions	**Minimum**	**Maximum**	**Mean ± Standard Deviation**		**Dimensions**	**Minimum**	**Maximum**	**Mean ± Standard Deviation**
Phase 01	**Overall quality of life**	58,33	83,33	77,71 ± 7,36	***Phase 02***	**Overall quality of life**	50	75	66,15 ± 5,19
	Functional Scale					**Functional Scale**			
	Physical function	86,67	100	97,25 ± 3,63		*Physical function*	80	100	94,50 ± 5,49
	Emotional function	58,33	100	81,35 ± 10,71		*Emotional function*	58,33	91,67	78,13 ± 8,00
	Cognitive Function	83,33	100	95,83 ± 7,26		*Cognitive Function*	83,33	100	96,88 ± 6,55
	General function	83,33	100	92,71 ± 8,32		*General function*	50	100	78,13 ± 18,10
	Social function	33,33	100	66,88 ± 25,09		*Social function*	33,33	66,67	62,08 ± 8,38
	Symptom Scale					**Symptom Scale**			
	Fatigue	0	22,22	5,56 ± 7,50		*Fatigue*	0	33,33	9,44 ± 9,37
	Pain	0	33,33	3,96 ± 7,61		*Pain*	0	33,33	0,83 ± 5,24
	Dyspnea	0	0	0		*Dyspnea*	0	0	0

	Insomnia	0	33,33	16,25 ± 16,77		*Insomnia*	33,33	33,33	33,33 ± $0,10^{-7}$
	Loss of appetite	0	0	0		*Loss of appetite*	0	33,33	16,67 ± 16,77
	Nausea and vomiting	0	0	0		*Nausea and vomiting*	0	50	19,38 ± 17,48
	Constipation	0	0	0		*Constipation*	0	0	0
	Diarrhea	0	0	0		*Diarrhea*	0	33,33	4,58 ± 11,55
	Financial Difficulty	0	33,33	3,75 ± 10,60		*Financial Difficulty*	33,33	33,33	33,33 ± $0,10^{-7}$
EORTC QLQ-BR23 Questionnaire									
	Dimensions	**Minimum**	**Maximum**	**Mean ± Standard Deviation**		**Dimensions**	**Minimum**	**Maximum**	**Mean ± Standard Deviation**
Phase 01	**Functional Scale**				***Phase 02***	**Functional Scale**			
	Body image	0	66,67	25,73 ± 18,57		*Body image*	16,67	50	34,06 ± 6,10
	Future outlook	33,33	66,67	34,58 ± 6,37		*Future outlook*	33,33	66,67	40,00 ± 13,42
	Sexual Function	0	16,67	8,54 ± 8,38		*Sexual Function*	0	16,67	4,38 ± 7,38
	Sexual satisfaction	-	-	-		*Sexual satisfaction*	-	-	-
	Symptom Scale					**Symptom Scale**			
	Effects of chemotherapy	0	0	0		*Effects of chemotherapy*	0	19,08	12,50 ± 6,49
	Hair loss	0	0	0		*Hair loss*	0	100	48,33 ± 36,32
	Breast Symptoms	0	16,67	4,90 ± 4,72		*Breast Symptoms*	0	16,67	8,54 ± 1,86
	Symptoms in the arm	0	0	0		*Symptoms in the arm*	0	11,11	7,50 ± 5,24

In phase 02, better ratings were recorded for the functional scale (cognitive function) and symptom scale (dyspnea and constipation). The worst evaluations were descriptive for the functional scale (sexual function) and symptom scale (concern about hair loss) (Table 1) [10].

As for religiosity, in general, the indices showed median values in both phases of treatment. For the OR, the averages were 2.00 ± 0.00 (min. 2 and max. 2) (phase 1) and 1.31 ± 0.47 (min. 1 and max. 2) (phase 2). For the NOR, the means were described as 2.21 ± 0.41 (min. 2 and max. 3) (phase 1) and 2.00 ± 0.00 (min. 2 and max. 2) (phase 2). In the

IR index, the mean values were 4.61 ± 0.93 (min. 3 and max. 6) (phase 1) and 4.84 ± 1.32 (min. 3 and max. 8) (phase 2). (Table 2).

Table 2: Minimum, maximum, mean and standard deviation values of the responses for the domains of the Duke Religiosity Scale (DUREL) questionnaire in phase 01 and phase 02 chemotherapy oncology treatment.

Phase 01 - Duke Religiosity Scale (DUREL)			
Key Figures	**Minimum**	**Maximum**	**Mean ± Standard Deviation**
Organizational religiosity (OR)	2	2	2,00 ± 0,00
Non-Organizational Religiosity (NOR)	2	3	2,21 ± 0,41
Intrinsic religiosity (IR)	3	6	4,61 ± 0,93
Phase 02 - Duke Religiosity Scale (DUREL)			
Key Figures	**Minimum**	**Maximum**	**Mean ± Standard Deviation**
Organizational religiosity (OR)	1	2	1,31 ± 0,47
Non-Organizational Religiosity (NOR)	2	2	2,00 ± 0,00
Intrinsic religiosity (IR)	3	8	4,84 ± 1,32

When comparing the Religiosity Scale in the two phases of treatment, it was observed that the indices of OR (t = 13.18; G.L. = 79; p = 0.000) and NOR (t = 4.62; G.L. = 79; p = 0.000) showed a significant decrease in the evaluation score (Table 3). While IR, did not show any significant variation between the two evaluation periods of the patients (t = -1.69; G.L. = 79; p = 0.095) (Table 3).

Table 3: Comparison between the mean scores of the Duke Religiosity Scale (DUREL) questionnaire in phase 0 1and phase 02 chemotherapy oncology treatment.

	Duke Religiosity Scale *Questionnaire* (DUREL)			
Key Figures	**Phase 01**	**Phase 02**		**p-value[(a)]**
	Mean ± Standard Deviation	**Mean ± Standard Deviation**	**Difference**	
OR	2,00 ± 0,00	1,31 ± 0,47	0,69	0,000*
NOR	2,21 ± 0,41	2,00 ± 0,00	0,21	0,000*
IR	4,61 ± 0,93	4,84 ± 1,32	-0,23	0,095

(a)Student's t-test for paired samples/ *Significant difference, p < 0.05
Legend: OR - Organizational religiosity; NOR - Non-organizational religiosity; IR - Intrinsic religiosity.

The correlation matrix between QL domains and the Religiosity Scale (DUREL) in phase 01 of chemotherapy treatment indicated positive associations for: GQL and NON; GQL and IR; General Quality of Life (GQL) and EORTC QLQ-C30 functional scale, EORTC QLQ-C30 functional scale and EORTC QLQ-BR23, General Quality of Life (GQL) and EORTC QLQ-BR23 functional scale, NOR and R (Table X). Negative associations were also recorded between: GQL and EORTC QLQ-C30 symptom scale, GQL and EORTC QLQ-BR23 symptom scale, functional scale and EORTC QLQ-BR23 symptom scale (Table 4).

Table 4: Correlation matrix between Quality of Life domains (EORTC QLQ-C30 and EORTC QLQ-BR23) and Duke Religiosity Scale (DUREL) indices in phase 01 chemotherapy oncology treatment.

Variables	Functional Scale[a]	General Quality of Life [a]	Symptom Scale[a]	Functional Scale [b]	Symptom Scale [b]	NOR[c]	IR[c]
Functional Scale [a]	-	0,348*	-0,126	0,534*	-0,151	0,147	0,217
General Quality of Life [a]	0,348*	-	-*0,244	0,350*	-*0,311	0,156*	0,201*
Symptom Scale [a]	-0,126	-*0,244	-	-0,081	0,131	0,214	0,084
Functional Scale [b]	0,534*	0,350*	-0,081	-	-*0,455	0,076	0,180
Symptom Scale [b]	-0,151	-*0,311	0,131	-*0,455	-	0,109	-0,067
NOR[c]	0,147	0,156*	0,214	0,076	0,109	-	0,381*
IR[c]	0,217	0,201*	0,084	0,180	-0,067	0,381*	-

[a]EORTC QLQ-C30/ EORTC[b] QLQ-BR23/[c] Duke Religiosity Scale (DUREL)/ *Significant difference, $p < 0.05$
Legend: NOR = Non-Organizational Religiosity; IR = Intrinsic Religiosity.

In the correlation matrix with the same variables in treatment phase 02, positive relationships were observed between: EORTC QLQ-C30 and EORTC QLQ-BR23 symptom scale, EORTC QLQ-C30 and EORTC QLQ-BR23 functional scale, IR and GQL (Table 12). Negative relationships were described for: NOR and GQL, EORTC QLQ-C30 functional scale and EORTC QLQ-C30 symptom scale, EORTC QLQ-C30 functional scale and EORTC QLQ-BR23 symptom scale (Table 5).

Table 5: Correlation matrix between Quality of Life domains (EORTC QLQ-C30 and EORTC QLQ-BR23) and Duke Religiosity Scale (DUREL) indices in phase 02 chemotherapy oncology treatment.

Variables	Functional Scale[a]	General Quality of Life [a]	Symptom Scale[a]	Functional Scale [b]	Symptom Scale [b]	NOR[c]	IR[c]
Functional Scale [a]	-	0,101	-0,448*	0,251*	-0,366*	0,145	-0,014
General Quality of Life [a]	0,101	-	-0,165	0,087	-0,053	-0,019*	0,121*
Symptom Scale [a]	-0,448*	-0,165	-	0,104	0,472*	0,032	0,004
Functional Scale [b]	0,251*	0,087	0,104	-	-0,213	-0,007	0,018
Symptom Scale [b]	-0,366*	-0,053	0,472*	-0,213	-	-0,121	-0,086
NOR[c]	0,145	-0,019*	0,032	-0,007	-0,121	-	0,001
IR[c]	-0,014	0,121*	0,004	0,018	-0,086	0,001	-

[a]EORTC QLQ-C30/ EORTC[b] QLQ-BR23/[c] Duke Religiosity Scale (DUREL)/ *Significant difference, $p < 0.05$
Legend: OR = Organizational Religiosity; IR = Intrinsic Religiosity.

DISCUSSION

The average age of the interviewees was 52 years, most were married, with a high school education, data corroborated by research conducted nationally and internationally, such as the studies conducted in Fortaleza - Ceará, Belo Horizonte - Minas Gerais and Thailand, which investigated the HRQoL of women with breast cancer. [11,12,13]

With the exponential growth of BC cases, the consequences of chemotherapy treatment on the physical, psychological, social and spiritual/religious conditions of this public have also undergone robust changes, making room for better and continuous investigations of the influence of CT on the QL of these patients [14].

HRQoL assessment, therefore, has been listed as an essential tool in measuring the impact of the disease on the patient, generating indicators of disease severity and progression [15].

This study entailed the description of real-world data about changes in HRQL linked to CT. This helps the multidisciplinary team to quantify and qualify the effects of CT on potential [16] biopsychosocial characters.

In this study, the patients' HRQoL is worse when comparing phase 01 with phase 02 of treatment. The GQL decreased due to CT, inferring that woman with BC considered the worsening of their health status during CT. This was also observed in Binotto [16], Jang et al [17], and Wildes [18], who showed that overall health worsened following CT and worsening symptoms conferred by chemotherapy treatment.

This study also examined religiosity and its relationship to HRQL in breast cancer patients undergoing chemotherapy.

The results of the study made explicit a direct correlation between NOR and IR with GQL in phase 01 and IR and GQL in phase 02 of the treatment. GQL was significantly higher in patients with high IR.

Zamanian *et al.* [19], Jang et al [17], Aukst-Margetic [20], Wildeset al [18] , despite methodological and cultural differences, showed that positive religious *coping* was associated with better GQL, while negative religious *coping* was significantly linked to worse HRQL , like our study.

Carvalho [21], when relating the domains of the WHOQOL-bref with the dimensions of religiosity of the Durel scale, identified a significant correlation between the physical domain and IR. It is inferred that the decrease in individual religious activities (prayers, meditations) increases physical pain, as observed in our study. The IR evaluates how much religion can influence individual behavior and daily life, explaining how much and how the patient sees the importance of religion in her life [22].

In recent times, a diversity of evidence has inferred a relationship between religiosity and GQL with no clear mechanism of this relationship. Studies have induced that religiosity was associated with biopsychosocial support mechanisms that may mitigate the severity of BC [23] symptoms. Sadath and [24] Scheder [25] explained that women with BC align themselves to life-threatening illness by preserving hope, compensating for loss, and actively conserving their personal lives through experiential learning process. This learning process allowed patients to create or discover opportunities that enabled them to maintain or gain pleasure in life, even if suffering persisted during the cancer [24,25] problem.

Given our results, the importance of GQL in cancer treatment, the numerous physical, psychological, and religious changes of patients with BC, it is essential to gain information despite the religious care within the holistic.

Health professionals, especially those who work directly with cancer patients, tend to optimize assistance when they consider religious aspects in the humanized approach to care. It also provides a better discernment by the professional of the coping strategies used by the patients, implementing the bond, respect, integrity, and motivation during therapy.

We emphasize the importance of supporting these healthcare professionals' own religiosity, being available as a religious resource for their patients, and recognizing, understanding, and meeting the patients' religious needs.

CONCLUSION

The positive association between religiosity and quality of life in women with BC undergoing cancer chemotherapy treatment was the conclusion of our study. Religiosity is an essential factor for quality of life in oncological diseases, optimizing the ability to face the disease, both for patients and caregivers, whether family and/or professional. Thus, it is necessary for health professionals to carry out studies on religiosity, with the objective of better interventions during the treatment of women with BC.

AUTHOR CONTRIBUTIONS

All authors made substantial contributions to conception and design, acquisition of data, or analysis and interpretation of data; took part in drafting the article or revising it critically for important intellectual content; agreed to submit to the current journal; gave final approval of the version to be published; and agree to be accountable for all aspects of the work.

DISCLOSURE

The authors report no conflicts of interest associated with this publication.

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