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CORRELATION OF RELIGIOUSNESS WITH THE QUALITY OF LIFE AND PSYCHOLOGICAL SYMPTOMS IN ONCOLOGY PATIENTS

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SUMMARY

Introduction: *Malignant diseases are one of the leading mortalities in the world, causing a range of psychological symptoms and reducing the quality of life in oncology patients. Examine the correlation of religion with the quality of life and psychological symptoms in oncology patients.*

Subjects and methods: *The cross-sectional study included 100 oncology patients in the test group and 80 internal medicine patients in the control group. A sociodemographic questionnaire was specifically designed for this study, the Duke University Religion Index, the Symptom Check List 90, and the WHOQOL-100 quality of life assessment were used to collect the data.*

Results: *The average score in oncology patients was significantly lower on the subscales for physical health ($p<0.000$), social connections ($p<0.002$), and intrinsic religiousness ($p<0.046$) in comparison to internal medicine patients. On the psychological symptoms scale, the average score was higher in oncology patients with the largest difference observed on the psychoticism subscale ($p<0.078$).*

Conclusion: *Oncology patients are statistically less religious and are not satisfied with the quality of life in comparison to internal medicine patients. Psychological symptoms are more pronounced in oncology patients but the difference is not statistically significant. A lower level of religiousness is statistically negatively correlated with a higher severity of psychological symptoms.*

Key words: *correlation – religiousness - quality of life - psychological symptoms - oncology patients*

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INTRODUCTION

Nowadays, malignancies represent one of the biggest public health problems, one of the leading causes of morbidity and mortality in the world causing a series of psychiatric symptoms and reducing the quality of life among oncology patients (Vuk Pisk et al. 2017). Specialists who work with oncology patients on a daily basis need to be alert to the symptoms of psychological distress. Among the adults with cancer, depression is a common reaction and very often occurs with anxiety and pain (Vidovic 2016). Recent research findings indicate that suicidal risk is higher within depressed patients and it is increasing (Bortolato et al. 2017). Religiosity is an important factor in preventing suicidal behavior (Kopeyko et al. 2020, Shaheen et al. 2016). In psychology, religiosity is defined as a system of understanding, beliefs, behaviors, rituals and ceremonies by which individuals or communities put themselves in a relationship with God or the supernatural world and often in relation to one another, and from which a religious person obtain a set of values that the supernatural world is treated and judged (Čorić 1998). Religion refers more to the socio-cultural aspect, and religiosity to the individual aspect (Oliveira & Menezes 2018). It is measured by multidimensional scales (Traphagan 2005). In studying religiosity, it is necessary to include all its cognitive, behavioral and emotional components (McClintock et al. 2019, Kioulos et al. 2014). The four major dimensions of religiosity are: ideological religiosity pertaining to religious beliefs, ritualistic religiosity pertaining to religious practice, experiential religiosity pertaining to religious sentiments, consequential religiosity pertaining to the effects of religion, and later a fourth and fifth intellectual dimension pertaining religious knowledge (Pearce et al. 2017, Woodhead 2011). Religiosity affects the quality of life of oncology patients (Atef-vahid et al. 2011). Quality of life is an extremely complicated concept that is almost impossible to clearly define (Celebrate 2012). The conception of quality of life refers to the experience of satisfaction with the way of life, with its course and conditions, perspective, possibilities and limitations (Crnković et al. 2015). Health-based quality of life differs from the wider concept of quality of life and it is defined as a state of well-being (Janda et al. 2009). Patients diagnosed with cancer often experience a diminishing quality of life, but patients can adjust to life with cancer (Hinz et al. 2018). Numerous studies have been conducted around the world on the relation of religiosity with quality of life and psychiatric symptoms in oncology patients. In the past

studies, the positivity and negativity of the results relative to the correlation of these variables mainly depends on the population studied (Dos Reis et al. 2020, Delgado Guay et al. 2018, El Nawawi et al. 2012). The main goal of this study is to examine thecorrelation between religiosity and quality of life and psychiatric symptoms in oncology patients.

SUBJECTS ANDMETHODS

The study was conducted using a cross-sectional prospective study on a suitable sample of 180 subjects. The study was conducted in 2019. The study group consisted of 100 cancer patients treated at the Oncology Clinic of the University Clinical Hospital (*SKB*) Mostar. The control group consisted of 80 internist patients treated by family medicine physicians at the Mostar Health Center. The criteria for inclusion of the respondents were: diagnosed malignant disease, male and female population, age of respondents from 35 to 80 years, voluntary consent to participate in the study. The exclusion criteria of the respondents were diagnosed with mental illness and mental retardation, incorrect/ incomplete questionnaires. Prior to the conduct of the research, the written consent of the Ethics and Human Rights Commission of SKB Mostar was obtained. The reasearch was conducted in accordance with ethical principales and human rights in the research. The interviewing for study was anonymous.

Questionnaries

We used the sociodemographic questionnaire personally designed, made for this research, to obtain data on respondents such as: gender, age, employment status, qualifications, marital status. The DUREL-The Duke University Religion Index was used to assess respondents' religiosity. The DUREL questionnaires consisted of five-items scale that capture the three dimensions of religiosity that are most relevant to health outcomes (Koening & Büssing 2010). A self-assessment questionnaire (SCL-90 - SymptomCheck List 90) was used to assess psychiatric symptoms in oncology patients, which measures nine personality dimensions: somatization, obsessive-compulsive reactions, interpersonal sensitivity, depression, anxiety, phobic anxiety, hostility, paranoid ideation, psychoticism (Derogatis & Savitz 2000). A shortened version of the World Health Organization Quality of Life Brief (WHOQOL-BRIEF) was used to assess quality of life. Psychometric studies have shown that WHOQOL-BRIEF is a reliable and standardized instrument and correlates highly with WHOQOL-100, around 0.89. Due to the smaller number of questions and faster resolution, he is given preference over WHOQOL - 100. The questionnaire consists of 26 particles, and each question is scored on a Likert scale from 1 (worst) to 5 (best) (Skevington et al. 2004). All the above instruments are standardized, validated and approved by the author.

The collected data were processed by the descriptive statistics method. Arithmetic mean and standard deviation were used to represent the mean and scatter measure. A χ^2-test was used to calculate the significance of the distributions between nominal and ordinal variables. Microsoft Excel software (version 11, Microsoft Corporation, Redmond, WA, USA) was used for statistical analysis. The analysis was performed in the statistical software STATISTICA 25. The data are presented in tables. The probability level in all tests of $p<0.05$ is taken as statistically significant.

RESULTS

The arithmetic mean for the age of the patients in the study group is 56.9 years (SD=11.134). The age of the control group is between 41 and 73 years. The arithmetic mean for the age of the control group is 58.22 years (SD=10.227). The age of the control group is between 46 and 79 years.The socio-demographic data of the respondents included in the study are presented in detail in Tabel 1.

The results show that psyhiatric symptoms are more pronounced in oncological patients. The average difference between the control and examination group is six points. The largest difference between the control and examination group was recorded on the anxiety and psychoticism subscales. The difference between the two groups of patients in terms of the severity of psychiatric symptoms was not statistically significant. A comparison of the control and examination group scores on the psychic symptom subscales is shown in Table 2.

The control group was more satisfied with their physical health ($p<0.000$) and social ties ($p<0.002$) compared to cancer patients. The difference between the two groups of patients on the other quality of life subscales is not statistically significant. Table 3 shows the comparison of control and examination group scores on quality of life scales.

The control group was statistically significantly more intrinsically religious compared to the study group ($p<0.046$). Oncology patients are more likely to attend religious services than internist patients, but the difference from the control group is not statistically significant (0.999). The control group has a higher level of frequency of private religious activities compared to cancer patients. The difference between the two groups on the indicated subscale was not statistically significant ($p<0.582$). Comparison of control and exmination group scores on religiosity scales is detailed in Table 4.

Table 1. Sociodemoraphic data of examiners

	Control group (N)	%	Total	Exam group (N)	%	Total
Gender						
male	45	56.25	80	21	21	100
female	35	43.75	80	79	79	100
Age						
40-50	17	21.25	80	27	27	100
50-60	25	31.25	80	36	36	100
60-70	23	28.75	80	20	20	100
70-80	15	18.75	80	17	17	100
Working status						
employed	31	38.75	80	60	60	120
unemployed	49	61.25	80	40	40	100
School education						
university degree	33	41.25	80	25	25	100
higher expertise	10	12.50	80	43	43	100
high school degree	37	46.25	80	32	32	100
Marriage status						
married	47	58.75	80	52	52	100
divorced	20	25.00	80	37	37	100
widowed/widow	13	16.25	80	11	11	100

Table 2. Comparison of control and exam group scores on psychic symptoms scale

Psychic symptoms	M		sd		t	df	p*
	Exam group	Control group	Exam group	Control group			
Somatization	1.37	1.31	0.34	0.24	1.45	178	0.147
Obsessive-compulsive reactions	1.53	1.50	0.41	0.35	0.56	178	0.574
Interpersonal sensitivity	1.46	1.40	0.42	0.30	1.04	178	0.299
Depression	1.36	1.30	0.38	0.30	1.15	178	0.250
Anxiety	1.37	1.29	0.37	0.26	1.61	178	0.108
Phobic anxiety	1.41	1.38	0.36	0.31	0.67	178	0.499
Hostility	1.33	1.26	0.40	0.25	1.23	178	0.219
Paranoid ideas	1.48	1.44	0.44	0.40	0.66	178	0.507
Psychoticism	1.30	1.22	0.36	0.23	1.77	178	0.078

*Chi square test; Df: Degrees of freedom; t: Student's t- test; M: Arithmetic mean; sd: standard deviation

Table 3. Comparison of control and exam group scores on life quality scale

Life quality	M		sd		t	df	p
	Exam group	Control group	Exam group	Control group			
Psychical health	24.59	28.20	3.40	3.07	7.04	178	0.000**
Mental health	23.93	23.89	3.33	2.93	0.04	178	0.962
Social relationships	11.49	12.31	1.65	1.65	3.09	178	0.002*
Environment	30.50	31.51	4.31	3.57	1.53	178	0.126

*P<0.001; **P<0.05; Df: Degrees of freedom; t: Student's t- test; M: Arithmetic mean; sd: standard deviation

Table 4. Comparison of control and test group scores on religiosity scales

Religiosity	M		sd		t	df	p
	Exam group	Control group	Exam group	Control group			
Attending religious services	1.96	1.34	1.44	1.47	0.01	178	0.999
Frequency of private religious activities	1.98	2.08	1.39	1.46	0.55	178	0.582
Intrinsic religiosity	1.79	2.03	0.71	0.86	2.00	178	0.046*

*p<0.05; Df: Degrees of freedom; t: Student's t- test; M: Arithmetic mean; sd: standard deviation

DISSCUSION

The results of our study did not confirm the cognition and findings of previous studies showing that religious beliefs and practices are associated with greater life satisfaction, pleasant feelings, happiness, and other indicators of well-being (Abu et al. 2018). Our results, like numerous studies to date, show that there is a positive association between religiosity and psychiatric symptoms of oncologic patients (Jang et al. 2013, Ng et al. 2017). The results of some studies show that there is no correlation between religiosity and psychological symptoms, but rather that religiosity is only positively related to psychological resilience (Fradelos et al. 2018). In the said study, the sample was limited to oncology patients with breast cancer.

Religiosity and quality of life

Numerous studies to date indicate that religiosity is positively associated with a better quality of life with oncology patients. Des Rois and colleagues in a study of religiosity and quality of life in patients with head and neck cancer suggest that religiosity has a positive effect on quality of life and faster recovery. In their study, Des Rois et al. used a larger number of subjects compared to our study (n=202) and a different methodology (no control group) (Des Rois et al. 2020). Our results are consistent with the above study regarding the relationship between religiosity and quality of life. The religiosity subscale "attendance at religious services" in our results is not positively correlated with the better quality of life of oncology patients. Although our results show that oncology patients attend religious services more often than the control group, the quality of life of oncology patients was lower than with the control group. Lim et al. stated that religiosity is positively related to certain aspects of quality of life, especially with the social support. The methodology of this research is consistent with our research. A smaller number of respondents were used in this study compared to our study (Lim & Yi 2009). According to the above study, our results show that intrinsic religiosity and increased frequency of private religious activities are positively related to particular aspects of quality of life, such as physical health and social support. Oncology patients reported lower levels of intrinsic religiosity and lower levels of physical health and social support.

Oncology patients reported lower levels of intrinsic religiosity and lower levels of physical health and social support. Some studies indicate negative results in relation to the association between religiosity and quality of life. Panzini et al. state that the coherence between religiosity and quality of life has not yet been demonstrated with certainty, and that additional research is needed (Panzini et al. 2017). Such a high level of extrinsic religiosity may cause a higher level of fear of death and a lower level of quality of life, or with mental health in oncology patients (Wen 2010). Our results show that a statistically significant negative association was found between physical health and (non) organizational religious activities. Respondents who were less satisfied with their physical health participated more in non-organizational religious activities, and contrariwise.

There was also a statistically significant negative association between physical health and intrinsic religiosity. Respondents who were less satisfied with their physical health were more intrinsically religious, and contrariwise. Furthermore, a statistically significant negative association between environment and intrinsic religiosity was found. Respondents who were less satisfied with their environment were more intrinsically religious, and contrariwise. These research results are in line with many studies to date (Zargani et al. 2018, Bernard et al. 2017, Safari et al. 2016). Some studies state that religiosity is only partly related to the quality of life of cancer patients (Assimakopoulos et al. 2009). Considering that quality of life can also be influenced by factors that are strictly related to the disease (disease stage, recovery phase) of the individual, the authors of this paper consider that additional research is needed on this topic using research variables related to cancer characteristics.

Mental symptoms and quality of life

Numerous studies have been conducted in relation to the association between psychic symptoms and the quality of life of cancer patients. Kugbey et al. in a study that examined the correlation between psychiatric symptoms and quality of life in women with breast cancer reported that depression and anxiety had a negative impact on quality of life, as well as higher level of social support affecting better quality of life in anxious cancer patients (Kugbey et al. 2020). Numerous studies indicate that depression is more frequent and has more intense symptoms in cancer patients than other types of patients. According to studies to date, psychiatric symptoms, and especially depression, not only affect poorer quality of life but also affect higher mortality rates of cancer patients (Baczweska et al. 2014, Guo et al. 2006). Parker and coworkers report that cancer patients who are older and have higher levels of social support show less anxiety and other psychiatric symptoms. A study conducted by Parker et al. contains a large sample of respondents (n=351) (Parker et al. 2003). Compared to the aforementioned research, our research shows that social support is impaired in oncology patients and is statistically significantly lower compared to the control group. According

to the methodology, the aforementioned studies are consistent with our research. Our results are consisted with other mentioned studies, which show that the majority of oncology patients show on average showed a lower level of quality of life and a higher level of psychological symptoms, especially anxiety, comperd to the control group. Our results, such as the aforementioned studies, show that a statistically significant negative association was found between physical health and psychological symptoms such as interpersonal sensitivity and paranoid ideas. On average, the less satisfied a person was with their physical health, the more pronounced the psychic symptoms were, and contrariwise. Our results, such as the aforementioned studies, show that a statistically significant negative association was found between psysical health and psyhological symptoms such as interpersonal sensitivity and paranoid ideas. On averege, the less satisfied a person was with their psysical health, the more pronounced the psychic symptoms were, and contrariwise. Our results show that there is a negative association between environment and paranoid ideas. Respondents who were less satisfied with their environment had a more pronounced psychic symptom, and contraiwise. These results are consistent with a number of studies to date (Meraner et al. 2012, Christensen & Drago 2016, Mehta & Roth 2015).

Religiosity and psychic symptoms

Research to date has shown that religious people are less susceptible to stress and depression and have more positive attitudes toward life and less fear of death (Gregurek & Bras 2018). In a large number of studies, a positive association has been found between religiosity, less fear of death and happiness (Stolz et al. 2017). Some studies show that depression and anxiety are not related to religiosity in relation to their impact on quality of life (Kugbey et al. 2019). Our study confirms this claim. A group of subjects who were more religious, or who had a higher level of scores on the intrinsic religiosity subscale, had lower levels of depression and anxiety. However, we cannot determine with certainty whether the higher level of psychiatric symptoms is affected by intrinsic religiosity or the severity of the disease. Some studies state that anxiety is negatively related to religiosity (Zarzycka et al. 2017). Some studies report that religiosity is not a protective factor in relation to the psychological symptoms of cancer patients, especially in cases of depression and anxiety (Abbou Kassm et al. 2018). Accordingly, the results of studies to date show that religiosity is positively associated with the level of psychological resilience in patients with breast cancer (Fradelos et al. 2018). According to aforementioned studies, the results of our study show that religiosity is positively associated with lower levels of psychic symptoms, especially in those who are more likely to perform private religious activities. Our research shows that attending religious services is not associated with lower levels of anxiety and other psychiatric symptoms. Still, our results show that respondents who are less involved in (non) organizational private religious activities have more pronounced psychic symptoms. The group of respondents who had more frequent private religious activities and who were more intrinsically religious had less severe psychiatric symptoms. On average, the less intrinsically religious a person was, it had more severe psychological symptom of hostility, and contrariwise. These results are consistent with the results of previous studies (Helms et al. 2015, Pirutinsky et al. 2011, Pace 2014).

Compared to the studies cited in this discussion, the number of subjects included in our study is generally higher except in one study (Parker et al. 2003). Previous studies differ from our study by the instruments used for data collection and by the type of control group. When we are talking about the instruments used for data collection, the most common coincidence of our study with the research conducted so far is in the questionnaires for measuring religiosity. Some of the studies mentioned used only respondents who are Muslim or Orthodox (Safari et al. 2016, Assimakopoulos et al. 2009) in the sample. In our study, the inclusion criterion was not represented by the type of religion practiced by the respondents. Therefore, in further research, it would be interesting to conduct a study comparing different types of religions in relation to psychological symptoms and quality of life for oncological patients. In contrast to our study, in some studies, the inclusion criterion is a type of cancer (Dose Reis et al. 2020, Fradelos et al. 2018, Zargani et al. 2018, Shaheen et al. 2016). Some studies show that women go to church more often than men, follow religious instructions, spend more time talking to the clergy, perform daily prayer on daily basis, pray for personal well-being, follow religious media more, take on the role of religious education for upbringing children and the church is used more to gain their social support (Mukerjee 2018). In our study, no gender difference was directly measured in relation to religiosity. Furthermore, in some studies, the inclusion criterion is the type of oncology modality (operative, chemotherapy, radiotherapy) (Assimakopulos et al. 2009). In our study, oncology patients were included regardless of the type of oncology treatment. In relation to the application of the type of reseach , our study is consistent with most previous researches (Ng et al. 2017, Fradelos et al. 2018, Bernard et al. 2017). Other research has been conducted on the health problems of oncology patients in our area. Hrkać et al. achieved statistically significantly higher scores on the anxiety

scale (Hrkać et al. 2019). Franjić et al. pointed out the importance of resilience in cancer patients with colorectal cancer, stating that a faster recovery and healing process showed for cancer colon and that the introduction of psychological interventions is extremely important for oncologic institutions for faster healing, control of psychological symptoms and better quality of life for oncological patients (Franjić et al. 2019).

Bacic et al. found that radiation-treated oncologic patients had a statistically significantly higher rating of their satisfaction with the health that they had a lower incidence of psychiatric symptoms in patients treated with chemotherapy (Bacic et al. 2018). Perkovic et al. found that no statistically significant difference was found in overall satisfaction with quality of life in women with cancer compared to healthy women (Perković et al. 2018). Ostrogonac et al. state that objectifying factors that impair the quality of life of women with breast cancer is a starting point in the development of guidelines in the rehabilitation process in order to improve intervention procedures in the treatment process (Ostrogonac et al. 2016).

CONCLUSION

Oncologic patients are statistically significantly less religious and satisfied with their physical appearance, health and social relationships than internistic patients. Mental symptoms are more pronounced in oncological patients, but the difference with internist patients is not statistically significant. A lower level of religiosity was statistically significantly correlated with a higher severity of psychic symptoms. Less satisfaction with physical health was significantly negatively associated with stronger mental symptoms and higher levels of intrinsic religiosity.

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Contribution of individual authors:

Antonija Kvesić is the project coordinator, participated in the study concept data interpretation, literature appraisal, and also critically drafted and revised the final appearance of the paper.

Dragan Babić, Marko Martinac & Romana Babić participated in the study concept, paper composition, theoretical explanations, data interpretation, literature appraisaland English language proofreading.

Darjan Franjić & Inga Marijanović were responsible for the methodological approach and for the study concept, paper composition, theoretical explanations, data interpretation, literature appraisal.

All authors provided their approval for the final version of the manuscript.

References

1. *Abou Kassm S, Hlais S, Khater C, Chehade I, Haddad R, Chahine J et al: Depression and religiosity and their correlates in Lebanese breast cancer patients. Psycho-oncology 2018; 27:99-105*
2. *Abu HO, Ulbricht C, Ding E, Allison JJ, Salmoirago-Blotcher E, Goldberg RJ et al: Association of religiosity and spirituality with quality of life in patients with cardiovascular disease: a systematic review. Qual Life Res 2018; 27:2777-2797*
3. *Assimakopoulos K, Karaivazoglou K, Ifanti AA, Gerolymos MK, Kalofonos HP & Iconomou G: Religiosity and it's relation to quality of life in Christian Orthodox cancer patients undergoing chemotherapy. Psychooncology 2009; 18:284-9*
4. *Baczewska B, Kamińska M, Ciszewski T, Kubiatowski T, Makara-Studzińska M, Sygit K et al: Quality of life and occurrence of depression under chemotherapy in patients suffering from lung carcinoma. Ann Agric Environ Med 2014; 21:783-9*
5. *Bačić M, Babić D & Pavlović M: Usporedba kvalitete života i psihičkih simptoma u onkoloških pacijenata liječenih kemoterapijom i zračenjem. Zdravstveni glasnik 2018; 1:15-22*
6. *Bernard M, Strasser F, Gamondi C, Braunschweig G, Forster M, Kaspers-Elekes K et al: Relationship between spirituality, meaning in life, psychological distress, wish for hastened death, and their influence on quality of life in palliative care patients. J Pain Symptom Manage 2017; 54:514-522*
7. *Bortolato B, Hyphantis TN, Valpione S, Perini G, Maes M, Morris G et al: Depression in cancer: the many biobehavioral pathways driving tumor progression. Cancer Treat Rev 2017; 52:58-70*
8. *Christensen M & Drago A: Genetic determinants of psychic resilience after a diagnosis of cancer. Integr Cancer Sci Therap 2016; 3*
9. *Crnković I, Rukavina M & Ostrogonac K: Kvaliteta života laringektomiranih osoba. JAHS 2015; 2:107-118*
10. *Čorić ŠŠ: Psihologija religioznosti. Zagreb: Naklada slap, 1998*
11. *Delgado-Guay MO, Hui D, Parsons HA, Govan K, De la Cruz M, Thorney S et al: Spirituality, religiosity, and spiritual pain in advanced cancer patients. J Pain Symptom Manage 2011; 41:986-94*
12. *Derogatis LR & Savitz KL: The SCL-90-R and the Brief Symptom Inventory (BSI) in primary care In: M.E.Maruish (eds): Handbook of psychological assessment in primary care settings. 297-334. Lawrence Erlbaum Associates, 2000*
13. *Dos Reis LBM, Leles CR & Freire MDCM: Religiosity, spirituality, and the quality of life of patients with sequelae of head and neck cancer. Oral Dis 2020; 26:838-842*
14. *El Nawawi NM, Balboni MJ & Balboni TA: Palliative care and spiritual care: the crucial role of spiritual care in the care of patients with advanced illness. Curr Opin Support Palliat Care 2012; 6:269-74*
15. *Fradelos EC, Latsou D, Mitsi D, Tsaras K, Lekka D, Lavdaniti M et al: Assessment of the relation between religiosity, mental health, and psychological resilience in breast cancer patients. Contemp Oncol (Pozn) 2018; 22:172-177*

16. Franjić D, Babić D & Marijanović I: Karcinom debelog crijeva i rezilijencija. Health Bulletin 2019; 5:81-92
17. Gregurek R & Braš M: Psihoonkologija. Osijek: Grafika, 2018
18. Guo Y, Musselman DL, Manatunga AK, Gilles N, Lawson KC, Porter MR et al: The diagnosis of major depression in patients with cancer: a comparative approach. Psychosomatics 2006; 47:376-84
19. Helms SW, Gallagher M, Calhoun CD, Choukas-Bradley S, Dawson GC & Prinstein MJ: Intrinsic religiosity buffers the longitudinal effects of peer victimization on adolescent depressive symptoms. J Clin Child Adolesc Psychol 2015; 44:471-9
20. Hinz A, Weis J, Faller H, Brähler E, Härter M, Keller M et al: Quality of life in cancer patients-a comparison of inpatient, outpatient, and rehabilitation settings. Support Care Cancer 2018; 26:3533-3541
21. Hrkać I, Pavlović M, Haxhibeqiri S, Babić R, Martinac M & Babić D: Usporedba anksioznosti i depresivnosti u onkoloških pacijenata liječenih kemoterapijom i zračenjem. Health Bulletin 2019; 5:40-47
22. Janda M, DiSipio T, Hurst C, Cella D & Newman B: The Queensland cancer risk study: general population norms for the Functional Assessment of Cancer Therapy-General (FACT-G). Psychooncology 2009; 18:606-14
23. Jang JE, Kim SW, Kim SY, Kim JM, Park MH, Yoon JH et al: Religiosity, depression, and quality of life in Korean patients with breast cancer: a 1-year prospective longitudinal study. Psychooncology 2013; 22:922-9
24. Kioulos KT, Bergiannaki JD, Glaros A, Vassiliadou M, Alexandri Z & Papadimitriou G: Religiosity dimensions and subjective health status in Greek students. Psychiatriki 2015; 26:38-44
25. Koening HG & Büssing A: The Duke University Religion Index (DUREL): A five-item measure for use in epidemological studies. Religions 2010; 1:78-85
26. Kopeyko GI, Borisova OA, Gedevani EV & Kaleda VG: The influence of religiosity on depressive disorders and suicidal behavior. Zh Nevrol Psikhiatr Im S S Korsakova 2020; 120:103-110
27. Kugbey N, Oppong Asante K & Meyer-Weitz A: Depression, anxiety and quality of life among women living with breast cancer in Ghana: mediating roles of social support and religiosity. Support Care Cancer 2020; 28:2581-2588
28. 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; 36:699-708
29. McAuley E: Physical activity and psychosocial outcomes. Human Kinetics 1994; 551-68
30. McClintock CH, Anderson M, Svob C, Wickramaratne P, Neugebauer R, Miller L et al: Multidimensional understanding of religiosity/spirituality: relationship to major depression and familial risk. Psychol Med 2019; 49:2379-2388
31. Mehta RD & Roth AJ: Psychiatric considerations in the oncology setting. CA Cancer J Clin 2015; 65:300-14
32. Meraner V, GamperE, Grahmann A, Giesinger JM, Wiesbauer P, Sztankay M et al: Monitoring physical and psychosocial symptom trajectories in ovarian cancer patients receiving chemotherapy. BMC Cancer 2012; 12:77
33. Mohammad-Kazem Atef-vahid, Mehdi Nasr-Esfahani, Mohsen Saberi Esfeedvajani, Homayoon Naji-Isfahani, Mohammad Reza Shojaei, Yasavoli M Masoumeh et al: Quality of life, religious attitude and cancer coping in a sample of Iranian patients with cancer. J Res Med Sci 2011; 16:928-937
34. Mukerjee S & Venugopal A: Religiosity and health through the decades: is there a gender difference? Am J Health Promot 2018; 32:1028-1041
35. Ng GC, Mohamed S, Sulaiman AH & Zainal NZ: Anxiety and depression in cancer patients: the association with religiosity and religious coping. J Relig Health 2017; 56:575-590
36. Oliveira ALB & Menezes TMO: The meaning of religion/religiosity for the elderly. Rev Bras Enferm 2018; 71:770-776
37. Ostrogonac K, Rukavina M & Crnković I: Aspekti kvalitete života žena oboljelih od raka dojke u kreiranju rehabilitacijskog procesa. Zdravstveni glasnik 2016; 2:47-56
38. Pace S: Effects of intrinsic and extrinsic religiosity on attitudes toward products: empirical evidence of value-expressive and social-adjustive functions. JABR 2014; 30:1227-1238
39. Panzini RG, Mosqueiro BP, Zimpel RR, Bandeira DR, Rocha NS & Fleck MP: Quality of life and spirituality. Int Rev Psychiatry 2017; 29:263-282
40. Parker PA, Baile WF, de Moor Cd & Cohen L: Psychosocial and demographic predictors of quality of life in a large sample of cancer patients. Psychooncology 2003; 12:183-93
41. Perce LD, Hayward GM, Pearlman JA: Measuring five dimensions of religiosity across adolescence. Rev Relig Res 2017; 59:367-393
42. Perković R, Vlašić A, Hrkać A & Vasilj I: Kvaliteta života žena oboljelih od raka dojke na području Livna. Health Bulletin 2018; 1:50-57
43. Pirutinsky S, Rosmarin DH, Holt CL, Feldman RH, Caplan LS, Midlarsky E et al: Does social support mediate the moderating effect of intrinsic religiosity on the relationship between physical health and depressive symptoms among Jews? J Behav Med 2011; 34:489-496
44. Predovan V & Stipančić S: Uloga medicinske sestre u zbrinjavanju onkološkog pacijenta. Medicina Flumiensis 2015; 51:413-417
45. Saffari M, Pakpour AH, Mortazavi SF & Koenig HG: Psychometric characteristics of the Muslim Religiosity Scale in Iranian patients with cancer. Palliat Support Care 2016; 14:612-620
46. Shaheen A, Ahwal M, Al Zaben F, Sehlo MG, Khalifa DA & Koenig HG: Religious beliefs, practices, and health in colorectal cancer patients in Saudi Arabia. Psychooncology 2016; 25:292-9
47. Skevington SM, Lotfy M, O'Connell KA & WHOQOL Group: The World Health Organization's WHOQOL-BREF quality of life assessment: psychometric properties and results of the international field trial. A report from the WHOQOL group. Qual Life Res 2004; 13:299-310
48. Slavuj L: Objektivni i subjektivni pokazatelji u istraživanju koncepta kvalitete života. Geoadria 2012; 17:73-92
49. Stolz E, Mayerl H, Gasser-Steiner P & Freidl W: Attitudes towards assisted suicide and euthanasia among care-dependent older adults (50+) in Austria: the role of socio-demographics, religiosity, physical illness, psychological distress, and social isolation. BMC Med Ethics 2017; 18:71

50. *Traphagan J: Multidimensional measurament of religiousness/spirituality for use in health research in cross-cultural perspective. Research on Aging 2005; 27:387-419*
51. *Vidović B: Logoterapijski pristup depresiji. Crkva u svijetu 2016; 51:78-97*
52. *Vuk Pisk S, Filipčić I, Bogović A, Milovac Ž, Todorić Laidlaw I & Caratan S: Maligne bolesti i psihički poremećaji - prevalencija, mortalitet, terapijski izazov. Soc psihijat 2017; 45:187-201*
53. *Wen YH: Religiosity and death anxiety. The Journal of Human Resource and Adult Learning 2010; 6:31-37*
54. *Woodhead L: Five concepts of religion. International Review of Sociology 2011; 21:121-143*
55. *Zargani A, Nasiri M, Hekmat K, Abbaspour Z & Vahabi S: A survey on the relationship between religiosity and quality of life in patients with breast cancer: a study in Iranian Muslims. Asia Pac J Oncol Nurs 2018; 5:217-222*
56. *Zarzycka B, Śliwak J, Krok D & Ciszek P: Religious comfort and anxiety in women with cancer: the mediating role of hope and moderating role of religious struggle. Psychooncology 2019; 28:1829-1835*

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