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Original Article

The Influence of Sociodemographic Factors on the Level of Hope in Women with Breast Cancer

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Abstract

Background: We aimed to determine the level of hope in breast cancer patients along with the influence of sociodemographic characteristics on the expressed level of hope.

Methods: A descriptive cross-sectional study was conducted on the sample size of 72 female patients with breast cancer diagnosis. The study was conducted at the University Clinical Center of Kragujevac, Serbia from November 2020 until March 2022. Data were collected from the patients in a form of the Sociodemographic Variables Questionnaire (Q-SV). The Herth Hope Index (HHI) was used in assessing the level of hope.

Results: The value of the total HHI score was ranging from 14 to 48, whereas the mean value of the HHI score was 40.00±5.92. The significantly higher level of hope was reported in female patients who: searched the Internet for gathering information on their disease (39.24±6.23; *P*=0.047), were religious (38.77±6.13; *P*=0.003), believed in God (38.45±5.51; *P*=0.004), had no formal medical education (38.44±5.75; *P*=0.036) and after therapy (38.76±6.49; *P*=0.022).

Conclusion: Hope is an existential internal resource possibly affecting the manner in which female patients perceive their own health state and future as well. A better understanding of the meaning of hope during treatment can be of great value in supporting cancer patients.

Keywords: Herth hope index; Women; Breast cancer; Sociodemographic factors

Introduction

Breast cancer has been the most common type of cancer diagnosed in women in Serbia and at the same time, it is the leading cause of cancer death in women. The very process of treatment may be followed by patients' developing short or long-term side effects, psychosocial distress along with

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encountering difficulties in coping with physical, cognitive, emotional, social and professional fields of their everyday life (1-5).

The diagnosis of breast cancer frequently represents a turning point in the life of patients, or even more a breaking point transforming the patients' perception of her own being and her future endeavors as well. The diagnosis is accompanied by significant emotional changes, fear, a feeling of uncertainty about life, anxiety and loss of hope (6-11).

Hope is an existential internal resource possibly affecting the manner in which female patients perceive their own health state and future as well, influencing the way in which a disease-affected person copes with stressful and life-threatening situations, and above all providing inner strength (12, 13), finding the true meaning of life, having a positive attitude and raising a level of optimism, along with improving the quality of their life. The sense of hope, particularly in patients with chronic diseases, may increase the level of motivation of patients to maintain their physical, psychological, emotional and social health status during the length of disease (14).

Hope was an important factor in terms of enhancing wellbeing of patients (15), providing patients with inner strength needed to fight the disease (16).

Accordingly, the aim of our study was to determine the level of hope in breast cancer patients along with the influence of sociodemographic characteristics on the expressed level of hope.

Methods

A descriptive cross-sectional study was conducted on the sample size of 72 female patients with breast cancer diagnosis. The study was conducted at the University Clinical Center of Kragujevac, Serbia from Nov 2020 until Mar 2022.

The study was conducted in accordance with the Declaration of Helsinki and Good Clinical Practice guidelines, approved by the Ethics Committee of the University Clinical Center of Kragujevac, Serbia (N° 01/20/529 from 29.05.2020.). A written informed consent was obtained from patients prior to their involvement in the study.

Inclusion criteria were patients over 18 with breast cancer diagnosis confirmed by the oncologist. Exclusion criteria were the following: the presence of serious chronic health state during the late stages of terminal illness, acute infections, recent surgical interventions, alcohol abuse or drug abuse, mental disorder comorbidity, pregnancy, severe cognitive impairment. All the patients were successively included in the study according to the inclusion and exclusion criteria, until the exact number of patients planned to be included in the study sample was reached.

Data were collected from the patients in a form of the Sociodemographic Variables Questionnaire (Q-SV), whereas the data retrieved from the patients' medical history and health records contained information on diagnosis, diagnosis date, treatment and joint comorbidities.

The Herth Hope Index (HHI) was used in assessing the level of hope (17). The 12-item instrument was designed to measure a global sense of hope. The 4-point Likert-type scale was used, with options ranging from 1 (I completely disagree) to four (I completely agree). Items 3 and 6 were negatively worded, the rest of the items were positively worded. The Likert-type scale had one global score ranging from 12 to 48. A higher score denoted higher levels of hope. According to the programmer's instructions, a high score was defined as the score higher than 36 points, the scores ranging from 24 to 35 were considered as medium, whereas the scores lower than 23 were considered as low. The original instrument defined three domains of hope: temporality and future (it contained the following items: 1, 2, 6 and 11), positive readiness and expectancy (it contained the following items: 4, 7, 10 and 12) and interconectedness, i.e. the relation to self and others that helped us feel hopeful (it contained the following items: 3, 5, 8 and 9). The HHI of hope was assessed at two time points, at the beginning and at the end of therapy. The author of the instrument gave the permission to use the HHI instrument. The Serbian version of the

aforementioned instrument was used in our study.

Data collection

The majority of patients completed a questionnaire without intervention of the researcher (e.g. an interviewer) collecting the data, but if it was necessary the researcher helped them by reading the questionnaire (to the patients who were completing the questionnaire at the moments when they were receiving chemotherapy and therefore were unable to complete it by themselves because of the presence of cannula, a vascular access device).

Statistical data analysis

Descriptive statistics methods were used to present the data: tabulation and graphical representation. Kolmogorov-Smirnov test of normality was used to determine whether sample data was normally distributed. The Pearson rank correlation coefficient was used to measure the degree of statistically significant association between the HHI values and numerical variables. A one-way ANOVA was used for three or more groups of data, to gain information about the relationship between the dependent and independent variables. T-test was used to measure difference between the mean values between two groups. A P-value of 0.05 or lower ($P \leq 0.05$) was used to indicate statistically significant results. In our sample Cronbach's alpha was 0.897 for HHI. By applying the statistical technique of exploratory factor analysis (EFA), i.e. the Kaiser criterion (and graphically by using the screeplot), we established the presence of two factors in our analysis accounting for 58.22% of total variance. The first "positive" factor was comprised of the questions expressing patients' positive, optimistic outlook on life (and how they felt they had inner strength, desire, willingness, etc.), whereas the second "negative" factor was comprised of the questions expressing patients' negative pessimistic outlook on life (and how they felt lonely, scared, etc.). All statistical calculations were performed with the standard commercial, standard software package SPSS, version 18.0 (Chicago, IL, USA).

Results

Sociodemographic characteristics

The average age of female patients was 50.39±14.18 years. Their sociodemographic characteristics were shown in Table 1.

The Herth Hope Index (HHI)

The value of the total HHI score was ranging from 14 to 48, whereas the mean value of the HHI score was 40.00±5.92. After reviewing the patients' responses and bearing in mind the fact that each response was assigned a point value, ranging from 1 to 4, a significantly greater number of patients were reported to select answer choice 3 and 4 to the questions related to the sense of hope. The question that the study participants gave the most positive response to was related to how they felt that their own life had its own value and worth, and then they responded by saying that they were able to give and receive love. The question that the study participants gave the most negative response to was related to how they felt scared about their future, Table 2.

The relationship between the level of hope and sociodemographic and clinical variables in patients with breast cancer were shown in Table 3.

The influence of sociodemographic factors on the level of hope in women with breast cancer before and after therapy were shown in Table 4.

Table 1: Sociodemographic characteristics of breast cancer patients

Variables		***N (%)***
Education level	Elementary school	11 (15.3)
	Secondary school	41 (56.9)
	Higher education school < 4 years	9 (12.5)
	University/college ≥ 4 years	11 (15.3)
Marital status	Married	49 (68.1)
	Unmarried	4 (5.6)
	In a relationship	1 (1.4)
	Divorced	7 (9.7)
	Widowed	11 (15.3)
Work status	Permanent employment	29 (40.3)
	Unemployed	13 (18.1)
	Retired	29 (40.3)
	Other	1 (1.4)
Monthly income	Less than 30.000 RSD	25 (34.4)
	From 30.000 to 50.000 RSD	15 (20.8)
	More than 50.000 RSD	7 (9.8)
Place of residence	City	45 (62.5)
	Suburban settlement	14 (19.4)
	Village	13 (18.1)
Number of family members		3.13±1.64
Disease duration	0-4 years	50 (69.4)
	5-9 years	17 (23.6)
	>10 years	5 (6.9)
Comorbidities	Yes	42 (60.9)
	No	27 (39.1)
Cigarette consumption	Yes	31 (43.1)
	No	41 (56.9)
Alcohol consumption	Yes	2 (2.8)
	No	70 (97.2)
Consumption of psychoactive substances	Yes	18 (25.0)
	No	54 (75.0)
The use of the Internet	Yes	56 (77.8)
	No	16 (22.2)
Searching the Internet	Yes	42 (58.3)
	No	30 (41.7)
Search type	Forums	29 (69.0)
	Professional articles	13 (31.0)
Religiosity	Yes	60 (83.3)
	No	12 (16.7)
Faith in God	Yes	63 (87.5)
	No	9 (12.5)
Attendance at church religious services	Yes	62 (86.1)
	No	10 (13.9)
Formal medical education	Yes	6 (8.3)
	No	66 (91.7)

Table 2: An analysis of the sense of hope in women with breast cancer

HERTH HOPE INDEX - ITEMS	***1***	***2***	***3***	***4***
I have a positive outlook on life	0	4	33	35
I have short and/or long-range goals	1	9	42	20
I feel all alone	1	8	28	35
I see possibilities in the midst of difficulties	0	9	39	24
I have faith that gives me comfort	0	3	25	44
I feel scared about my future	15	8	26	23
I can recall happy/joyfull times	0	13	29	30
I have deep inner strength	0	10	26	36
I am able to give and receive love	0	4	19	49
I have a sense of direction	0	7	38	27
Each day has potential	0	5	29	38
I feel my life has value and worth	0	3	22	47

Table 3: The influence of sociodemographic factors on the level of hope in women with breast cancer

Variables		***Mean±SD(HHI)***	***p***
Age			R*=-0.125, *P*=0.295
Education level	Elementary school	35.56±3.5	F**=0.783, *P*=0.540
	Secondary school	38.20±6.29	
	Higher education school < 4 years	39.4±2.40	
	University/college ≥ 4 years	39.0±7.74	
Marital status	Married	38.04±6.04	F=0.474, *P*=0.754
	Unmarried	34.20±6.05	
	In a relationship	41.25±3.95	
	Divorced	39.00±6.0	
	Widowed		

Work status	Permanent employment	40.9±4.79	F=0.829, *P*=0.512
	Unemployed	37.75±7.27	
	Retired	38.21±4.67	
	Other	38.29±5.66	
Monthly income	Less than 30.000 RSD	40.1±13	F=0.165, *P*=0.955
	From 30.000 to 50.000 RSD	39.50±5.8	
	More than 50.000 RSD	41.78±5.33	
Place of residence	City	39.64±5.25	F=0.872, *P*=0.423
	Suburban settlement	35.29±6.79	
	Village	38.56±4.61	
Disease duration	0-4 years	39.22±6.27	t***=0.599, *P*=0.551
	5-9 years	38.45±7.2	
	>10 years	37.32±6.98	
Comorbidities	Yes	36.54±5.68	t=0.582, *P*=0.563
	No	37.61±6.44	
Therapy	Before therapy	37.76±5.41	t=0.241, *P*=0.022
	After therapy	38.76±6.49	
Cigarette consumption	Yes	37.96 ±7.11	t=1.882, *P*=0.064
	No	35.50±2.12	
Alcohol consumption	Yes	36.00±6.48	t=0.582, *P*=0.563
	No	38.44±5.88	
Consumption of psychoactive substances	Yes	39.02±6.33	t=1.199, *P*=0.235
	No	36.05±3.96	
The use of the Internet	Yes	38.42±5.24	t=1.597, *P*=0.115
	No	37.12±6.76	
Searching the Internet	Yes	39.24±6.23	t=2.020, *P*=0.047
	No	37.12±5.43	
Search type	Forums	36.97±5.42	t=1.355, *P*=0.183
	Professional articles	39.43±6.19	
Religiosity	Yes	38.77±6.13	t=3.111, *P*=0.003
	No	36.00±6.1	
Faith in God	Yes	38.45±5.51	t=2.981, *P*=0.004
	No	36.50±6.11	
Attendance at church religious services	Yes	36.00±6.60	t=0.573, *P*=0.569
	No	37.82±4.15	
Formal medical education	Yes	37.00±7.08	t=2.140, *P*=0.036
	No	38.44±5.75	

* Pearson correlation
** ANOVA
*** t test

Table 4: The influence of sociodemographic factors on the level of hope in women with breast cancer before and after therapy

Herth Hope Index (Hhi)	***Breast cancer***			
	Before therapy		After therapy	
	*	*P*	*	*P*
Age of respondents	-0.111	0.351	-0.076	0.524
The presence of comorbidities	0.917	0.359	1.582	0.114
Education level	3.443	0.328	2.555	0.465
Marital status	1.987	0.575	1.440	0.696
Employment status	0.803	0.669	1.789	0.409
Monthly income	0.359	0.836	0.012	0.994
Place of residence	2.106	0.349	0.834	0.659
The number of family members	0.097	0.416	0.057	0.632
Family relationships	6.381	0.094	6.037	0.110
Your friends care about you	12.963	0.002	7.208	0.027
My friends do not understand me	3.012	0.390	1.144	0.767
Closeness with friends	13.244	0.001	9.534	0.009
Help and support given by closer family members	0.146	0.221	0.236	0.046
Help and support provided by members of the extended families	0.032	0.788	0.023	0.848
Help provided by a friend	0.197	0.097	0.223	0.059
Help provided by a marital spouse	0.155	0.250	0.291	0.028
Help provided by the state	-0.172	0.148	-0.075	0.532
Self-help	0.207	0.081	0.296	0.012
The number of childbirth	0.220	0.063	0.270	0.022
Have you ever breastfed your baby/babies?	2.059	0.040	1.398	0.162
Have you ever used birth control pills?	0.196	0.844	0.265	0.791
Have you ever had mastitis?	1.098	0.272	1.130	0.258
Have you ever had a miscarriage?	0.587	0.557	1.166	0.244
How many miscarriages have you had so far?	0.150	0.389	0.082	0.640
Do you have a family history of breast cancer?	0.794	0.427	0.783	0.434
Are you a smoker?	1.818	0.069	1.330	0.183
Do you consume alcohol?	0.034	0.973	0.361	0.718
Do you use psychoactive substances?	1.362	0.173	0.672	0.501
Do you use the Internet?	1.568	0.117	2.462	0.014
Do you search the Internet for acquiring information on the disease?	2.117	0.034	2.145	0.032
Do you browse the Internet in search of health-related forums?	1.105	0.269	0.439	0.661
Do you browse the Internet in search of scientific articles?	0.575	0.565	0.780	0.435
Are you religious?	2.725	0.006	2.526	0.012
Do you believe in God?	2.559	0.010	2.069	0.039
Do you attend religious services at church?	0.326	0.744	0.850	0.395
Do you have formal medical education?	2.154	0.031	2.414	0.016

* The statistical test appropriate to the type and number of data

Discussion

Breast cancer patients are facing numerous challenges during a complex and demanding process of cancer diagnosis and treatment that could be accompanied by the feeling of loss of control over their own life along with the loss of hope. Hope is considered to be a positive psychological resource helping patients to adjust to life with cancer (13, 18).

The female patients included in our study displayed a high level of hope, higher than the one found in a similar study (19). The significantly higher level of hope is reported in female patients who: searched the Internet for the purpose of gathering information on their disease, were religious, believed in God, had no formal medical education and after therapy, which is in line with another study (20).

A study demonstrated a low level of knowledge on risk factors, signs and symptoms of the disease along with the methods of diagnosis (21). High-quality information retrieved on the web can make it easier for patients to understand fully the nature of a disease, enabling them to become more ready to face the disease (22). Of particular significance was the possibility to collect information on the causes and course of a disease, its treatment options, side effects of the therapy prescribed to patients by their physician, for a more informed patient was more likely to increase the level of hope despite the disease progression (23). Studies informed us that various online communities, forums and support groups had a potential to enhance emotional wellbeing of breast cancer patients (24, 25). The provision of adequate information not only increased the level of hope, but it also enhanced the level of comprehension of goals and development of abilities to face the disease, encouraging patients to become actively engaged in their own care and treatment, reducing the level of anxiety and increasing the quality of life (26).

Additionally, studies indicated that a higher level of patient knowledge on cancer, its treatment and prognosis did not lead to the loss of hope (27, 28). Therefore, empowering patients to achieve a more efficient communication with their physicians is of significance (29).

Formal medical education, as one of the variables in our study, was associated with a lower level of hope. In addition, our study show that religious beliefs have significant and positive effects on patients' overall perceived hope. Higher levels of hope can be found in breast cancer patients who have faith in God and that people with high levels of hope are more confident in their ability to overcome challenges and tend to focus on success. They are able to identify more effective coping strategies that are likely to help them make the right decisions (30-32).

Study limitations

Considering the fact that the study was conducted at one center, perhaps this population was not typical of the Serbian population as a whole. The patient follow-up period was insufficient. Longitudinal research should be conducted for a deeper understanding of the dynamics of hope.

Implications for practice

Developing countries, such as Serbia, do not possess sufficient resources due to which it would be possible to provide adequate chosocial psychosocial support to cancer-affected patients along with their family members. Practitioners can enhance the benefits of psychosocial support programs through strengthening. This study can serve as a model for investigations on other groups' patients. Another contribution of the study is the acknowledgement that some groups are more vulnerable than others are, and that socioeconomic factors should be observed in order to identify them and help these groups overcome difficulties in the initial stages of cancer.

Conclusion

The level of hope was high. There was a positive correlation between the sense of hope in our female patients and their religion status along with their searching the Internet for gathering information on the disease itself. Considering the sig-

nificance and influence of hope on patients' mental and physical health, it is necessary not only to conduct further research studies on the factors having positive influence on the level of hope, but to implement various interventions for the the purpose of their promotion as well.

Journalism Ethics considerations

Ethical issues (Including plagiarism, informed consent, misconduct, data fabrication and/or falsification, double publication and/or submission, redundancy, etc.) have been completely observed by the authors.

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Conflict of interest

The authors declare that there is no conflict of interests regarding the publication of this paper.

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