ЗДРАВООХРАНЕНИЕ И ПРОФИЛАКТИЧЕСКАЯ МЕДИЦИНА

PUBLIC HEALTH AND PREVENTIVE MEDICINE

DOI: 10.12731/2658-6649-2023-15-3-239-253
UDC 159.9:614.2

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Original article | Medical Psychology

SUBJECTIVE AGE AND SUBJECTIVE EVALUATION OF THE HEALTH OF WOMEN WITH BREAST CANCER

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This article is devoted to the results of the study of the relationship between subjective age and subjective assessment of health among women with breast cancer. The analysis of the literature showed that subjective age is a predictor of death, mental wellness, assessment of life prospects (approach of death), possibility of coping with a bad trauma (e.g. oncological disease). The research included 170 women in the age of 31 to 85 (the average age is 56,5) diagnosed with breast cancer on different stages. Summarising received data, it should be noted that the women who feel rather danger than their chronological age address to own resources and, in general their subjective health assessment is connected with role functioning based on the emotional condition and general mental health. The women with adequate perception of their age have issues with role functioning connected with physical condition as well as the women who feel older than they actually are do. The results of this research expand a notion about potential predictors for breast cancer course, besides the results can be used for building the forecast of the disease course and its outcome.

Keywords: *subjective evaluation of the health; quality of life; subjective age; breast cancer; oncopsychology*

For citation. *Sergienko E.A., Tsiring D.A., Pakhomova Ya.N., Ponomareva I.V. Subjective Age and Subjective Evaluation of the Health of Women with Breast Cancer. Siberian Journal of Life Sciences and Agriculture, 2023, vol. 15, no. 3, pp. 239-253. DOI: 10.12731/2658-6649-2023-15-3-239-253*

Научная статья | Медицинская психология

СУБЪЕКТИВНЫЙ ВОЗРАСТ И СУБЪЕКТИВНАЯ ОЦЕНКА ЗДОРОВЬЯ ЖЕНЩИН С РАКОМ МОЛОЧНОЙ ЖЕЛЕЗЫ

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Данная статья посвящена результатам исследования взаимосвязи субъективного возраста и субъективной оценки здоровья среди женщин с раком молочной железы на разных стадиях заболевания. Анализ литературы показал, что субъективный возраст выступает в качестве предиктора смерти, психологического благополучия, оценки жизненной перспективы (близости смерти), возможности совладания с тяжелой травматической ситуацией (онкологическим заболеванием. В исследовании принимали участие 170 женщин в возрасте от 31 года до 85 лет (средний возраст 56,5) с диагнозом рак молочной железы на разной стадии заболевания. Обобщая полученные данные, следует указать, что женщины, чувствующие себя значительно моложе своего паспортного возраста, адресуются к собственным ресурсам и в целом их субъективные оценки здоровья указывают в большей степени на ролевое функционирование, связанное с эмоциональным состоянием, и на общую оценку психического здоровья. Женщины с адекватным представлением о субъективном возрасте испытывают проблемы с ролевым функционированием, связанным с физическим состоянием, так же, как и женщины, чувствующие себя старше. Результаты данного исследования расширяют представления о возможных предикторах течения рака молочной железы, а также могут быть полезны при построении прогнозов течения болезни и ее исходов.

Ключевые слова: *субъективная оценка здоровья; качество жизни; субъективный возраст; рак молочной железы; онкопсихология*

Для цитирования. *Сергиенко Е.А., Циринг Д.А., Пахомова Я.Н., Пономарева И.В. Субъективный возраст и субъективная оценка здоровья женщин с раком молочной железы // Siberian Journal of Life Sciences and Agriculture. 2023. Т. 15, №3. С. 239-253. DOI: 10.12731/2658-6649-2023-15-3-239-253*

Introduction

According to the data of WHO estimated increase in number of new cases of cancer will be 63,1% by 2040, whilst new mortality cases – 71,5%. Increase in number of new cancer cases in Russia is 17,4% [4; 13]. Breast cancer takes the

leading place in the pattern of morbidity connected with malignancies among the female population. Every year 1 250 000 new cases of breast cancer are registered in the world, 54 000 cases are in Russia only. Morbidity connected with malignancies is increasing in the majority of countries, this is connected with the range of factors. Despite the great success in treating this disease, the amount of lethal cases remains big. The analysis of mortality rate in Russia for the last decade (2004-2014) shows that the dynamic hasn't changed greatly (29,78 lethal cases per 100 000 women in 2004, 29,08 - in 2014) [2; 3; 13].

Breast cancer provokes distress, anxiety, despair; it leads to changes in lifestyle, working and family status. The role of the psychological factors in fighting against this severe condition may be quite relevant for surviving and mental wellness of women. The results of researches conducted all around the world are aimed at finding those psychological factors which, on the one hand, might clarify psychological risks of cancer, on the other hand, demonstrate a role of psychological factors in fighting against cancer as well as their possibility to forecast a lifespan after onset of caner.

Literature review

In an intensively developing sphere of psycho-oncology there is an increasing concern with subjective factors and resources as predictors for the outbreak of the disease, its course and outcome. As it was shown in the range of studies, people diagnosed with oncological diseases had been experiencing significant trauma in the events of their life as well as long-term post-traumatic stress before the before they was diagnosed [6; 8]. Moreover the diagnosis and disease course are extreme stress and a life threat, and even in favourable outcome might lead to drastic changes in lifestyle [7; 16]. Breast cancer is characterised by great intensity of traumatic impact because it not only threatens patients' lives, but also affects psychological, sexual and social aspects of women's lives.

We assume that one of the prognosis factor for treatment and lifespan of women with breast cancer is subjective evaluation attached to age, which is to say, self-perception own age which can be the same as chronological age or different from it. In previous researches it was shown that subjective age performs as general self-perception of one's own psychological resources [10]. As the studies revealed subjective age of a person is connected with physical and mental health, life satisfaction, time perspective and personal circumstances [9]. Thus in Y. Stephan's research conducted with the sample of 17 000 people was aimed to study subjective age as a mortality predictor. Subjective age was included in the list of health factors [14; 15]. Subjective age, demographic fac-

tors, present diseases, functional limitations, depression and physical inactivity were assessed as basic data, whereas the dates of deaths were tracked during 20 years. In this research it was noted that that patients' chronic illnesses, their physical inactivity, functional limitations and cognitive problems are connected with subjective age and mortality. Considering both seniors and middle-aged people, the mortality risk was higher among those patients who felt older in comparison with the patients who felt younger. Another study of the sample of seniors shows that younger subjective age is connected with relevantly low level of C-reactive protein [15]. The data indicates that subjective age might serve as the immune dysfunction predictor as well as the predictor of morbidity and mortality, that, apparently, reflects on subjective feeling of the age.

Evaluation of the subjective age, a feeling of loneliness and a level of mental health (symptoms of depression, anxiety, symptoms of trauma) of seniors during COVID-19 pandemic lockdown showed that much older subjective age increases the risk of negative outcomes of loneliness, consequently, subjective age serves as a buffer for traumatising events [12]. Thus, subjective age reflects a subjective perception one's resources and abilities to cope with difficult life events.

The analysis of the literature showed that subjective age is a predictor of death, mental wellness, assessment of life prospects (approach of death), possibility of coping with a bad trauma (e.g. oncological disease), which prevents from developing PTSD symptoms and leads to more favourable disease course.

The goal of this research is to study subjective age among women with breast cancer in connection with quality-of-life indicators (subjective evaluation of the health). It is important to note that this study is a continuation of an earlier study on the relationship of subjective age with the psychological characteristics of women with breast cancer [11].

Materials and methods of the research

The sample. The research included 170 women in the age of 31 to 85 (the average age is 56,5) diagnosed with breast cancer on different stages (1st stage - 48 women, 2nd stage - 41 women, 3rd stage - 10 women, 4th stage – 45 women). The research was conducted on the base of State-Financed Health Institution « Chelyabinsk Regional Center for Oncology and Nuclear Medicine»

In order to achieve the goals of the study following methods were used:

1) Russian version of SF-36 Health Survey (John E. Ware, et al.) recommended by International Centre for Research of Subjective Health Assessment. The test was adapted by Gurevich K.G., Fabricant E.G. [5; 17]. The questionnaire allows to evaluate subjective perception of physical and mental health, it includes following scales:

- Limitations in physical activities because of health problems.
- Limitations in social activities because of physical or emotional problems
- Limitations in usual role activities because of physical health problems
- Bodily pain
- General mental health (psychological distress and well-being)
- Limitations in usual role activities because of emotional problems
- Vitality (energy and fatigue)
- General health perceptions

All scales are combined into two cumulative measurements - physical health (scales 1-4) and mental health (scales 5-8).

2) «Age-of-Me" Test (B. Barak, 2009). The test was adapted by E. A. Sergienko in 2011 [10]. This questionnaire allows to assess general subjective age, biological subjective age (feel-age), emotional subjective age (look-age), social subjective age (do-age) and cognitive subjective age (interest-age)

3) Respondents' socio-demographic data collection forms

Data analysis was completed with the use of the following statistical methods:

- The descriptive statistics (the arithmetic mean, standard deviation, skewness, kurtosis)
- The comparative analysis (the Student's t-test)
- The correlation analysis (the r-Pearson's)

The analysis was conducted in SPSS Statistics v. 24.

The results of the research

In order to diagnose the normality of the distribution, the frequency distribution was analyzed. The results of this diagnosis showed that the distribution of results corresponds to normal: the skewness and kurtosis do not exceed their standard errors.

Table 1 provides the results of assessment of subjective age. The sample was divided into 3 groups according to the assessment (±1 standard deviation): younger than chronological age, equal to chronological age and older than chronological age.

The amount of women whose subjective age is equal to chronological is 26, whereas the women whose subjective age is older than chronological is 20. The majority (124 women) feels younger than their actual age. Furthermore, the difference between figures of average feel-age in the group of women whose age is younger than chronological age is almost 15 years. Other indicators show prominent difference as well. The women assessed themselves older than they actually are have max difference feel-age and chronological age.

Table 1.

The results of assessment of subjective age and the difference between subjective and chronological age among women with breast cancer

		Age					
N	Group	Chronological	Average subjective	Feel-age	Look-age	Do-age	Interest-age
		St.deviation	St.deviation	St.deviation	St.deviation	St.deviation	St.deviation
			Difference	Difference	Difference	Difference	Difference
		Average	*Average*	*Average*	*Average*	*Average*	*Average*
124	younger than chronological age	10,85	9,78	11,14	11,01	10,87	10,96
			10,98	15,09	8,23	8,98	9,99
		55,41	*44,81*	*40,84*	*48,09*	*47,18*	*44,88*
26	equal to chronological age	13,58	14,88	16	14,83	13,67	12,84
			1,62	3,07	2,1	1,2	1,38
		55,18	*53,26*	*53,1*	*53,78*	*54,65*	*55,12*
20	older than chronological age	13,02	11,01	11,25	12,6	10,44	11,65
			-5,63	-7,9	-0,71	-6,07	-5,93
		48,97	*54,72*	*55,02*	*48,32*	*54,6*	*53,99*

Table 2.

Statistical significance for the difference between average subjective age and chronological age difference

Groups	Chronological age	Statistical significance	Age				
			Average Subjective	Feel-age	Look-age	Do-age	Interest-age
< and =	0,875	p (between averages)	0,039	0,03	0,09	0,025	0,02
		p (between differences)	<0,001	<0,0001	<0,001	<0,0001	<0,0001
< and >	0,05	p (between averages)	0,185	0,005	0,88	0,41	0,161
		p (between differences)	<0,0001	<0,001	0,0001	<0,0001	<0,0001
= and >	0,198	p (between averages)	0,99	0,62	0,71	0,38	0,461
		p (between differences)	<0,0001	<0,0001	0,4	<0,001	<0,0001

Note: «<» – women with breast cancer whose subjective age is younger than chronological, «=» women with breast cancer whose subjective age is equal to chronological, «>» – women with breast cancer whose subjective age is higher than chronological.

The comparative analysis of average subjective age and chronological age in the groups shows statistical significance.

The difference between groups in assessment subjective age appeared to be statistically significant in all indicators except for subjective age, look-age and

do-age between the group of the women with breast cancer whose subjective age is younger than chronological and the group of the women with breast cancer whose subjective age is higher than chronological.

There is no statistic significance in difference average chronological age and subjective age in the group of women with breast cancer whose subjective age is equal to chronological and the group of the women with breast cancer whose subjective age is higher than chronological. The difference between chronological age and subjective age is statistically significant for all respondent groups.

Table 3.

Provides the correlation of subjective age with the indicators of quality of life (physical and mental)

The women with breast cancer who felt younger than their chronological age, n=124								
Subjective Age and its components	PF	RP	BP	GH	VT	SF	RE	MH
Average Subjective Age	-0,08	0,08	-0,03	-0,04	-0,12	-0,05	-0,24*	-0,23*
Feel-age	-0,06	0,04	-0,07	-0,02	-0,11	-0,03	-0,18	-0,12
Look-age	-0,04	0,06	0,02	-0,15	-0,12	-0,01	-0,14	-0,17
Do-age	0,03	0,06	0,01	-0,03	-0,14	-0,04	-0,25**	-0,15
Interest-age	-0,07	0,04	-0,05	-0,05	-0,2*	-0,071	-0,22*	-0,28**
The women with breast cancer whose subjective age is equal to chronological, n=26								
Subjective Age and its components	PF	RP	BP	GH	VT	SF	RE	MH
Average Subjective Age	-0,28	-0,48*	-0,03	-0,31	-0,11	-0,01	-0,26	-0,19
Feel-age	-0,34	-0,57*	-0,08	-0,31	-0,22	-0,1	-0,31	-0,21
Look-age	-0,19	-0,51*	-0,02	-0,29	-0,18	-0,14	-0,29	-0,2
Do-age	-0,23	-0,5*	0,24	-0,39	-0,14	0,02	-0,24	-0,19
Interest-age	-0,38	-0,48*	-0,12	-0,3	-0,19	0,13	-0,23	-0,2
The women with breast cancer who felt older than their chronological age, n=20								
Subjective Age and its components	PF	RP	BP	GH	VT	SF	RE	MH
Average Subjective Age	0,42	-0,89**	0,24	0,14	0,03	-0,14	-0,59	-0,2
Feel-age	0,43	-0,94**	0,45	0,16	0,13	0,019	-0,51	-0,24
Look-age	0,28	-0,88**	0,29	0,19	-0,09	-0,4	-0,63	-0,38
Do-age	0,6	-0,81**	0,36	0,55	0,17	0,5	-0,5	0,19
Interest-age	0,39	-0,91**	0,45	0,47	0,12	-0,43	-0,42	-0,17

Note: PF – physical functioning, RP – usual role activities because of physical health problems, BP – Bodily Pain, GH – General Health, MH – Mental Health, RE – usual role activities because of emotional problems, SF – Social Functioning, VT – Vitality. * – significant at $p \leq 0,05$; ** – at $p \leq 0,01$.

The women who feel younger have subjective age and its components are associated with role functioning, connected with emotional condition and general mental health: the younger subjective age is, the higher role functioning is and better mental health is. The women who assess their subjective age adequately (feel the same as their actual age) as well as those who feel older show relationships between subjective age and its components with role functioning because of physical health problems: the older subjective age is, the less effective role functioning is. One may suppose that younger subjective age shifts the emphasis in the assessment of role functioning to emotional conditions in comparison with women who feel older and focus on physical conditions.

Discussion of the results

Summarising received data, it should be noted that the analysis of subjective age and its variety among women with breast cancer allows to differentiate subjective assessment one's own health which appears in difficult traumatic life situation connected with the disease.

The women who feel rather danger than their chronological age address to own resources and, in general their subjective health assessment is connected with role functioning based on the emotional condition and general mental health: the younger subjective age is, the higher role functioning is and the better mental health is. This data allows to assume that subjective age plays the role of flexible psychological mechanism which modify measures for coping with difficult traumatising life situation connected with the disease. It appears that the women who feel younger make greater efforts to fight the disease, they need more social support and consequently request it more.

The women with adequate perception of their age have issues with role functioning connected with physical condition as well as the women who feel older than they actually are do.

It might be suggested that the women who feel subjectively younger experience more emotional problems, however turn to bigger variety of psychological sources while struggling with trauma. Despite the fact that chronological age of all three groups is on average not very different, we observe significant difference in the patterns of psychological resources system. It means that apart from the general psychological factors of breast cancer (depression, anxiety, distress) there are individual variants of psychological organisation connected with subjective age which becomes a psychological mechanism for the assessment one's own resources. This assumption needs further verification and argumentation.

A limitation for this work is a very small number of respondents with an adequate assessment of subjective age and especially those respondents who feel older than they actually are. Moreover, it's necessary to consider the impact of clinical factors e.g. disease severity, presence of complications, particular features of therapy and a stage of the disease on subjective age among the women with breast cancer, since subjective age can change under the impact of traumatic experience of the disease and be a consequence of a patient's emotional condition.

Conclusion

The research on subjective age as a factor of psychological resources among women with breast cancer showed that subjective age allows to differentiate subjective assessments of health condition which can appear in difficult life situations connected with breast cancer. The significant differences in patterns of the psychological resources system were registered among women of different ages (from 31-85). It means that apart from the general psychological factors of breast cancer (depression, anxiety, distress), there are individual variants of psychological organisation connected with age assessment which modifies actualisation and evaluation of one's own mental resources. The results of this research expand a notion about potential predictors for breast cancer course, besides the results can be used for building the forecast of the disease course and its outcome.

Funding. The reported study was funded by Russian Science Foundation, project number 19-18-00426.

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Поступила 23.11.2022 Received 23.11.2022
После рецензирования 05.12.2022 Revised 05.12.2022
Принята 18.12.2022 Accepted 18.12.2022