

Social Factors of Psychological Well-being of Cancer Patients During the COVID-19 Pandemic

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Abstract

Introduction. The combination of oncopathology and coronavirus infection significantly increases the risk of developing mental maladaptation. Currently, insufficient research has been conducted on the relationship of social factors with the psychological characteristics of cancer patients during the coronavirus pandemic. On this basis, this study examined the relationship between marital status and educational level with the characteristics of the personal, value-semantic sphere, quality of life, intensity of stress coping strategies, as well as the severity of psychopathological symptoms in cancer patients during the COVID-19 pandemic. **Methods.** The study was conducted on the basis of the Federal State Budgetary Institution "NMIC of Oncology" of the Ministry of Health of the Russian Federation (Rostov-on-Don), 112 cancer patients aged 18 to 62 years took part in it (the average age was 42 years, 36% of them were men), 49% had a diagnosis in the field of oncogynecology, 17% – in the field of oncomammology, 20% – in the field of oncurology, 14% had lymphomas. The following psychodiagnostics tools were used: the SCL-90-R questionnaire, the R. Lazarus coping test, 5PFQ, the "Test of meaning-life orientations" by D.A. Leontiev, the M. Rokich "Value Orientations", the WHO-100 scale. For statistical processing of the obtained results, one-factor ANOVA analysis of variance was used, as well as a posteriori Tukey's analysis for nonequilibrium sample sizes. **Results.**

Widowhood reduces the resource potential of the individual; it is associated with a low level of meaningfulness of life and a greater severity of psychopathological symptoms in cancer patients; the level of education is associated with the intensity of pain experience, as well as with the intensity of stress coping strategies. **Discussion.** The results obtained complement existing data on the impact of marital status and educational level on the psychological characteristics of patients with life-threatening diseases. The results of the study can be used to develop programs for psychological support of patients, taking into account their psychosocial characteristics.

Keywords

psycho-oncology, COVID-19, value orientations, quality of life, psychological well-being, coping strategies, oncology patients

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Introduction

An illness is a crisis period during which not only a person's life and health are threatened, but also his psychological well-being, values are being revised, new strategies for coping with stress are being developed.

Psychological well-being can be considered as "an integral systemic state of a person or group, which is a complex interrelation of physical, psychological, cultural, social and spiritual factors" (May, 2015).

Cancer patients during the COVID-19 pandemic experienced serious distress due to two life-threatening diseases, as well as social restrictions (including the inability to receive planned treatment). The study of the psychological characteristics of cancer patients, strategies for coping with stress, value orientations, as well as associated social factors is of interest not only from a scientific point of view, but also from the standpoint of developing measures of adequate psychological support, which allows to increase the level of psychological well-being of people who find themselves in similar circumstances.

The study of the relationship between psychosocial (quality of life and characteristics of socio-psychological adaptation) and psychobiological factors with the peculiarities

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of the course of cancer and comorbid disorders is carried out by interdisciplinary fields of knowledge located at the junction of psychology, sociology and medicine – psychoncology (Khozhaev et al., 2020; Archer et al., 2020; Millar et al., 2020), oncopsychiatry and psychoimmunology (Bower, Radin & Kuhlman, 2022; Brietzke, Magee, Freire, Gomes & Milev, 2020; Debnath, Berk & Maes, 2020). In this context, data from studies examining the self-concept and self-attitude of patients in connection with different physical health status are also important (Bespalova, 2022).

The relevance of the study of social factors of psychological well-being of cancer patients during the COVID-19 pandemic is explained by the fact that to date there has been insufficient research to understand the holistic picture devoted to studying the specifics of the influence of comorbid disorders – oncopathology and coronavirus infection – on the characteristics of mental activity, personality, as well as indicators of socio-psychological adaptation of patients.

It is known that mental disorders are comorbid to oncological diseases and coronavirus infection (Tarasevich, Baryash, Obe'dkov, 2020). Patients with oncopathology are at risk of developing mental illness: according to a number of studies, depression occurs in almost 30% of oncopathologists, anxiety occurs in 50% (Caliandro et al., 2023; Stiegelis, Ranchor, Sanderman, 2004), severe stress occurs in 20.8% (Juanjuan et al., 2020). A number of authors points to a significant increase in indicators of anxiety and depression, as well as the risk of suicide in women who have survived breast cancer, compared with conditionally healthy ones (Bates, Mostel & Hesdorffer, 2017; Carreira et al., 2018). Anxiety and depressive disorders also top the list of complications of coronavirus infection (Akimenko, 2022; Seledtsov, Kirina, Akimenko, 2020; Ho, Chee & Ho, 2020; Klaassen & Wallis, 2021; Liu et al., 2020; Ng et al., 2020; Romito et al., 2020; Venderbos et al., 2015; Watts et al., 2015; Wang et al., 2020).

Toquero P. et al. (2021) showed that the combination of oncopathology and coronavirus infection increases the level of emotional distress in patients by 10.3%, compared with patients with monopathology. The most life-threatening, according to research results, is a combination of coronavirus infection and malignant neoplasms (ZNO) of the lungs and organs of the gastrointestinal tract (Karakozov, Zotov, 2020).

The results of the meta-analytical study showed that COVID-19 had a pronounced effect on the psychological well-being and health of cancer patients. Fear of COVID-19, fear of progression of the underlying disease, interruptions in the work of cancer services, the stage of cancer and weakened immunity are factors that significantly influence the decision of cancer patients regarding further treatment of the underlying disease in a pandemic. Against this background, many patients refused to receive medical care for cancer (Momenimovahed et al., 2021).

Thus, the combination of oncopathology and coronavirus infection significantly increases the risk of developing mental disorders: according to data obtained by E. S. Gural (2022), 90% of patients from among those who suffer from oncopathology and

have suffered a coronavirus infection have mental disorders. Among these patients, 60% have neurotic disorders, 20% have affective disorders, and 10% have organic disorders.

There is a wide prevalence of postcovid syndrome (PTSD, anxiety disorders, depression). Bo et al. (2021) showed that the severity of post-traumatic stress disorder in the group of patients with COVID-19 was 96.2%. According to the results of Rogers et al. (2020), the average duration of postcovid syndrome is at least three months, it significantly reduces the quality of life of patients and often requires psychological support, which in a pandemic could only be implemented in an online format. At the same time, according to the results of a study conducted in China on the peculiarities of the population's attitude to crisis mental health services engaged in psychoeducation and counseling activities, only 50% of respondents trusted online psychological assistance services. Psychosocial obstacles in seeking psychological help online were caused by the elderly age of patients and concomitant conditions: decreased vision, inability to use electronic devices through which you can connect to the Internet, etc. (Wang et al., 2020).

Magomed-Eminov M.S. (2021) shows that in an extreme situation, the COVID-19 pandemic, there was a resocialization, a value transformation of personality, identity, and subjectivity of a person. At the same time, patients with lung, stomach, and intestinal cancers who participated in the Gural E. S. study (2022) and highly appreciated the social significance of family and children showed relative stability in the quality of life.

The purpose and hypothesis of the study

Thus, the study of social factors of psychological well-being of cancer patients during the COVID-19 pandemic is of particular importance due to their likely impact on the formation of the internal picture of the disease of patients, on the level of compliance, as well as on the success of psychological support. This determined **the purpose** of this study.

The hypothesis of the study was the assumption that psychological characteristics (including value-semantic orientations, strategies for coping with stress, personal characteristics, quality of life, severity of psychopathological symptoms) in the conditions of the COVID-19 pandemic may differ in patients with different marital status and educational level.

Methods

Sample Characteristics

The study involved 112 cancer patients aged from 18 to 62 years (average age – 42 years, of which 36% were men, 64% were women). 49% of patients were diagnosed in the field of oncogynecology (cervical cancer, uterine body cancer, ovarian cancer), 17% – in the field of oncomammology (breast cancer), 20% – in the field of oncurology (testicular cancer, kidney cancer, prostate cancer, bladder cancer), 14% of patients had lymphomas

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(Hodgkin's lymphoma, follicular lymphoma, non-Hodgkin's lymphoma). The study was conducted on the basis of the Federal State Budgetary Institution "NMIC of Oncology" of the Ministry of Health of the Russian Federation (Moscow Rostov-on-Don) from spring 2021 to autumn 2023.

Psychosocial characteristics of the sample participants

Let's present some psychosocial characteristics of the sample participants:

- The study involved cancer patients with secondary complete (12%), secondary specialized (34%) and complete higher education (54%).
- 48% of cancer patients surveyed had COVID-19. 15% are single, 39% are in a registered marriage, 14% are in an unregistered marriage, 20% are divorced, 12% are widows/widowers.
- 9% of respondents indicated that they considered their own childhood unhappy.
- 15% of the respondents had no children, 30% had one child, 30% had two children, 25% had three or more children.
- 61% of respondents live in the city, 39% in rural areas.

Psychodiagnosics tools

The following psychodiagnosics tools were used in the study:

- Symptom Checklist-90-Revised;
- Questionnaire "Methods of Coping Behavior" (CSP), S. Folkman, R. Lazarus;
- Five-factor personality questionnaire, 5PFQ;
- "Test of meaning-life orientations" by D. A. Leontiev;
- "Value orientations" methodology by M. Rokich;
- The WHO-100 scale.

For statistical processing of the obtained results, one-factor ANOVA analysis of variance was used (categorizing factors: COVID-19 in the anamnesis no earlier than 6 months in relation to the time of psychodiagnosics; marital status, level of education), as well as a posteriori Tukey's analysis for nonequilibrium sample sizes.

Results

The relationship of marital status with the psychological characteristics of cancer patients during the COVID-19 pandemic

According to the results of a one-factor analysis of variance, a significant influence of the variable "marital status" on the psychological characteristics of cancer patients was revealed ($F = 3.3$, the effect of art.sv. = 24, the error of art.sv. = 241.9, $p = 0.000$). Also,

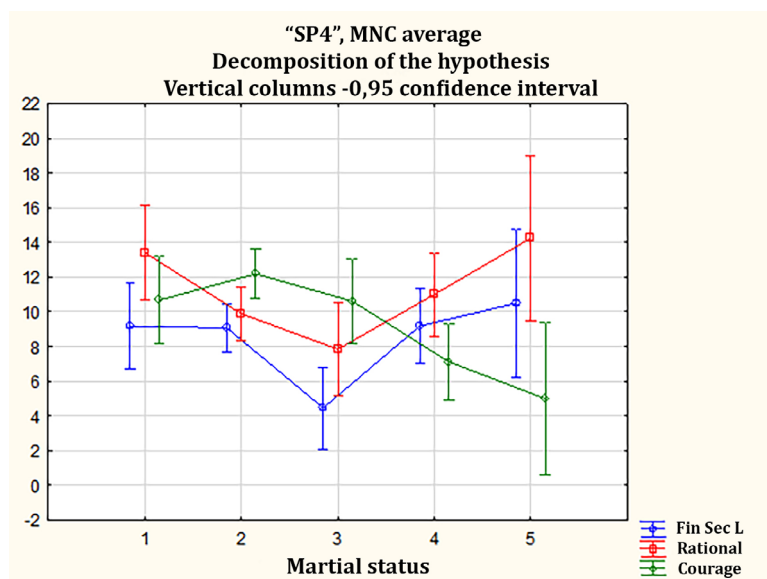
during the a posteriori Tukey's analysis, a number of significant differences in the severity of the signs we studied were revealed.

Statistical analysis showed that in the hierarchy of value orientations of oncology patients who are in an unregistered marriage (M3), such a terminal value as "financially secure life" occupies a significantly higher position (absence of material difficulties; M1 = 9.2, M2 = 9.1, M3 = 4.5, M4 = 9.2, M5 = 10.5; p = 0.01); rationalism occupies a higher position in the hierarchy of their instrumental values (the ability to think sensibly and logically, make deliberate, rational decisions; M1 = 13.4, M2 = 9.9, M3 = 7.8, M4 = 11.0, M5 = 14.3; p = 0.037).

Among divorced (M4) and widowed (M5) cancer patients, a higher position in the hierarchy of values is occupied by courage in defending one's opinion and views (M1 = 10.7, M2 = 12.2, M3 = 10.6, M4 = 7.1, M5 = 5.0; p = 0.002) (Figure 1).

Figure 1

Results of variance and post hoc analyzes of value orientations of cancer patients with different marital status (Tukey's Test for Post-Hoc Analysis after One-way ANOVA).



Note. Designations: (*Fin Sec L*) – terminal value "Financially secure life" (absence of material difficulties); *Rational* – instrumental value "Rationalism" (ability to think sensibly and logically, make deliberate, rational decisions); *Courage* – instrumental value "Courage in defending one's opinion, views". Marital status (hereafter): 1 – single; 2 – officially married; 3 – unregistered marriage; 4 – divorced; 5 – widow/widower.

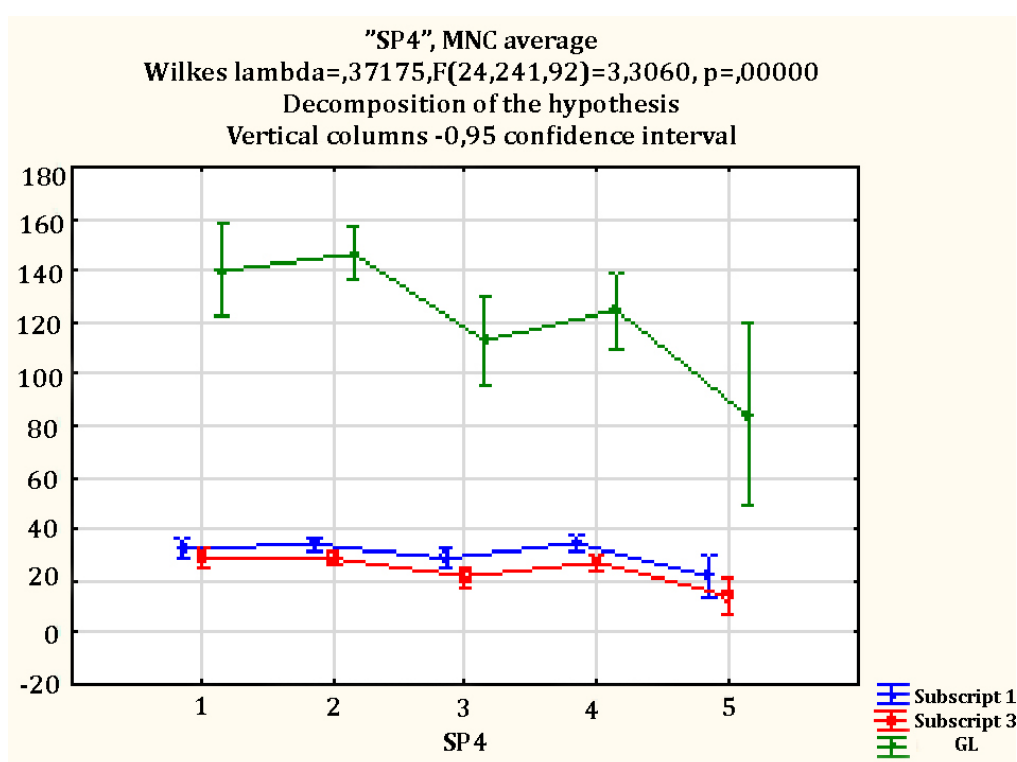
The study of life meaning orientations showed a significantly lower level of life meaning in the group of widowed cancer patients (M5); significantly higher - in the

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group of cancer patients who were married (M2), (M1 = 140.2, M2 = 146.5, M3 = 112.9, M4 = 124.8, M5 = 84.0; $p = 0,01$). The differences were expressed to a greater extent in lower commitment (M1 = 32.3, M2 = 33.9, M3 = 28.6, M4 = 34.4, M5 = 21.7; $p = 0.04$), as well as – life performance and satisfaction with self-realization (M1 = 29.1, M2 = 28.5, M3 = 21.3, M4 = 27.1, M5 = 14.0; $p = 0.004$) (Figure 2).

Figure 2

Results of variance and post hoc analyzes of life-meaning orientations of cancer patients with different marital status (Tukey's Test for Post-Hoc Analysis after One-way ANOVA).



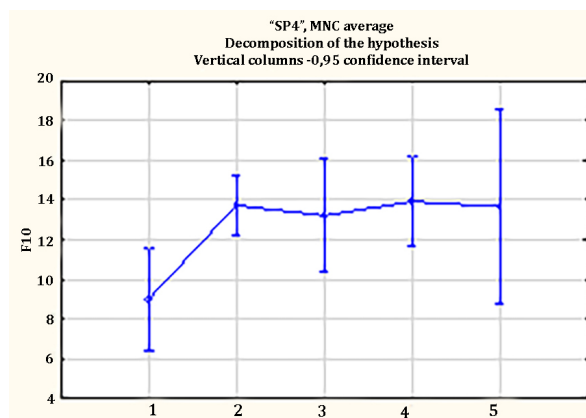
Note. Designations: *Subscript.1* – Subscale 1 "Goals in life". *Subscript.3* – Subscale 3 "The effectiveness of life or satisfaction with self-realization." *GL* is a general indicator of the meaningfulness of life.

There were no significant differences in the severity of stress management strategies depending on the marital status of cancer patients.

The study of the relationship between marital status and the quality of life of cancer patients demonstrated that single cancer patients cope worse than others with taking care of themselves and their property (M1 = 9.0, M2 = 13.7, M3 = 13.2, M4 = 13.9, M5 = 13.7; $p = 0.02$) (Figure 3).

Figure 3

Results of variance and post hoc analyzes of characteristics of the quality of life of cancer patients with different marital status (Tukey's Test for Post-Hoc Analysis after One-way ANOVA)

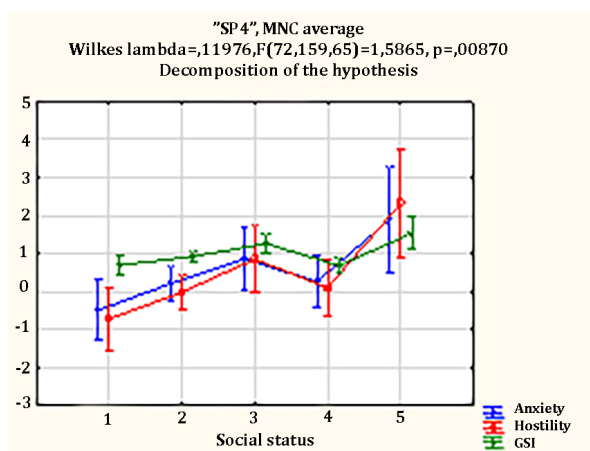


Note. Designations: F10 is an indicator of "Ability to perform everyday tasks".

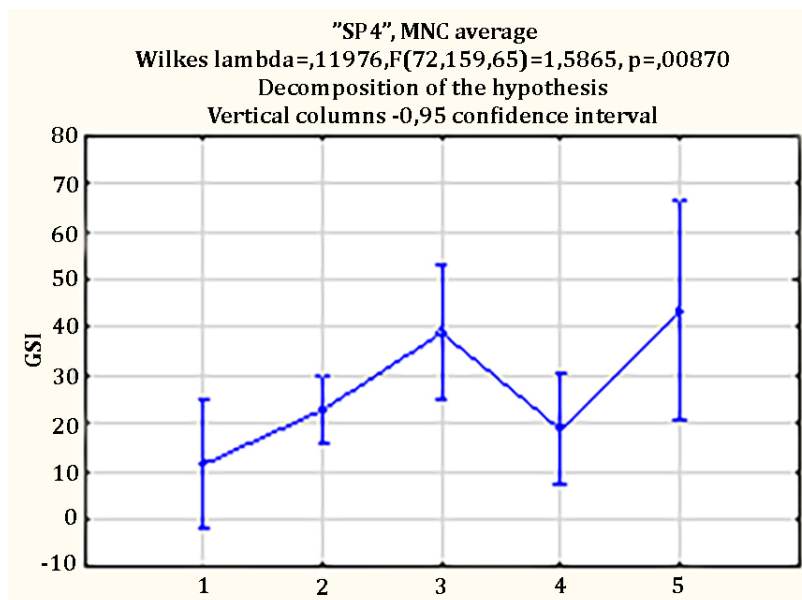
The study of the severity of psychopathological symptoms (Symptom check list-90-revised – SCL-90-R) demonstrated significantly high indicators of anxiety ($M = 1.9$, $p = 0.03$) and hostility ($M = 2.3$, $p = 0.004$), as well as the overall severity of symptoms ($MGSI = 1.5$, $p = 0.009$; $MPSI = 43.3$, $p = 0.046$) in widowed cancer patients (M5). Patients living in an unregistered marriage (M3) have a higher number of symptoms compared to single (M1), ($M1 = 38.9$, $M3 = 11.44$, $p = 0.046$) (Figure 4).

Figure 4

Results of variance and post hoc analyzes of the severity of psychopathological symptoms in cancer patients with different marital status (Tukey's Test for Post-Hoc Analysis after One-way ANOVA)



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Note. Notation: GSI is the general index of severity of symptoms.

The connection between the level of education and the psychological characteristics of cancer patients during the COVID-19 pandemic

According to the results of a one-factor analysis of variance, there was no significant effect of the variable "level of education" on the psychological characteristics of cancer patients ($F = 1.7$, effect of art.sv. = 72, error of art.sv. = 60, $p = 0.3$). However, Tukey's post hoc analysis revealed a number of significant differences in the severity of the signs we studied.

According to the results of Tukey's post-hoc analysis, the terminal value "active lifestyle (fullness and emotional richness of life) occupies significantly higher positions in the hierarchy of values of cancer patients with complete secondary education and is preferred and significant for them, while for groups of cancer patients with secondary education with special and complete higher education, this value is indifferent ($M_2 = 2.4$; $M_3 = 7.7$; $M_5 = 6.9$, $p = 0.02$) (Figure 5).

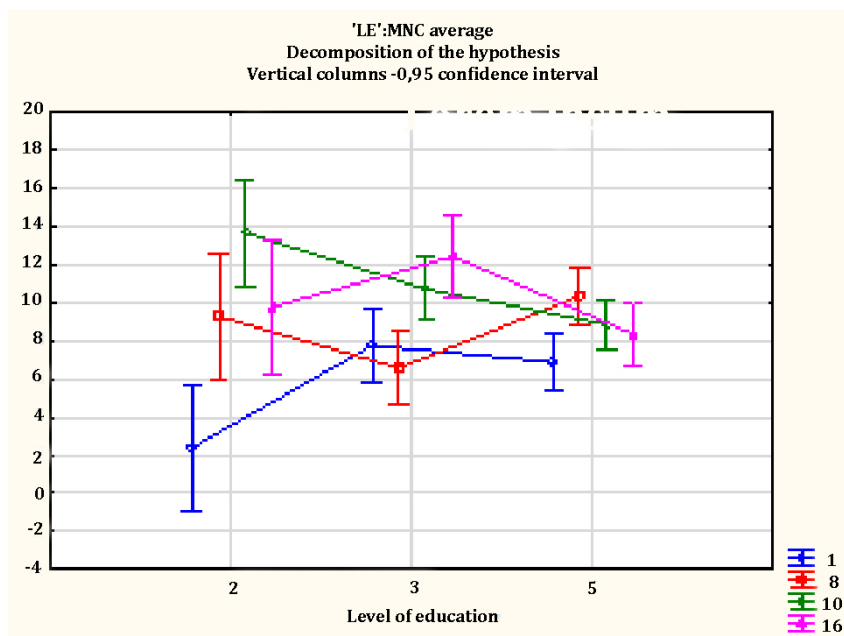
More significant for cancer patients with secondary specialized education is the value of "having good and loyal friends" ($M_2 = 9.3$; $M_3 = 6.6$; $M_5 = 10.3$, $p = 0.009$) (Figure 5).

Significantly less significant for cancer patients with complete secondary education is the value of "cognition" ($M_2 = 13.6$; $M_3 = 10.7$; $M_5 = 8.8$, $p = 0.009$) (Figure 5).

Significantly more significant for cancer patients with complete higher education is the instrumental value of "honesty" ($M_2 = 9.8$; $M_3 = 12.4$; $M_5 = 8.3$, $p = 0.009$) (Figure 5).

Figure 5

Results of variance and post hoc analyzes of the severity of terminal and instrumental values in cancer patients with different levels of education (Tukey's Test for Post-Hoc Analysis after One-way ANOVA)



Note. Designations: 1 – the value of "active lifestyle" (fullness and emotional saturation of life); 8 – the value of "having good and faithful friends"; 10 – the value of "cognition" (the opportunity to expand one's education, horizons, general culture, intellectual development); 16 – the value of "honesty" (truthfulness, sincerity). The level of education (here and further): 2 – complete secondary education; 3 – specialized secondary education; 5 – complete higher education.

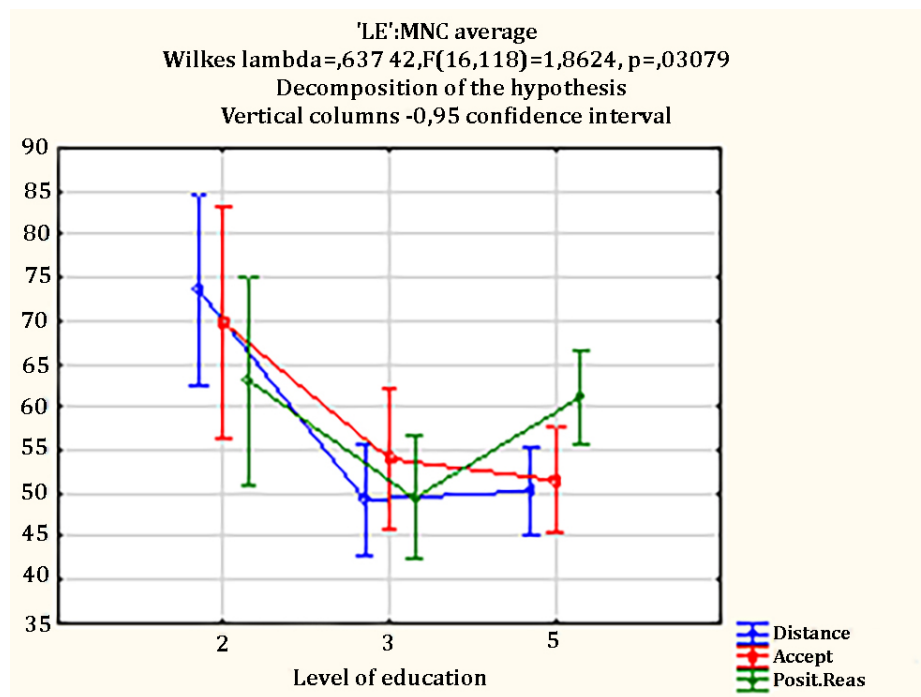
According to the results of a one-factor analysis of variance, a significant influence of the variable "level of education" on the coping strategies of oncopatients was revealed ($F = 1.9$, the effect of art.sv. = 16, the error of art.sv. = 118, $p = 0.03$).

During Tukey's post-hoc analysis, it was revealed that in cancer patients with secondary complete education, the intensity of coping strategies is "Distancing" ($M_2 = 73.6$; $M_3 = 49.3$; $M_5 = 50.3$, $p = 0.001$), "Taking responsibility" ($M_2 = 69.8$; $M_3 = 54.0$; $M_5 = 51.5$, $p = 0.045$) The "positive reevaluation" ($M_2 = 63.1$; $M_3 = 49.5$; $M_5 = 61.2$, $p = 0.003$) has significantly higher values compared to other groups, which may indicate the maladaptive severity of these strategies (Figure 6).

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Figure 6

Results of variance and post hoc analyzes of the severity of stress coping strategies in cancer patients with different levels of education (Tukey's Test for Post-Hoc Analysis after One-way ANOVA)



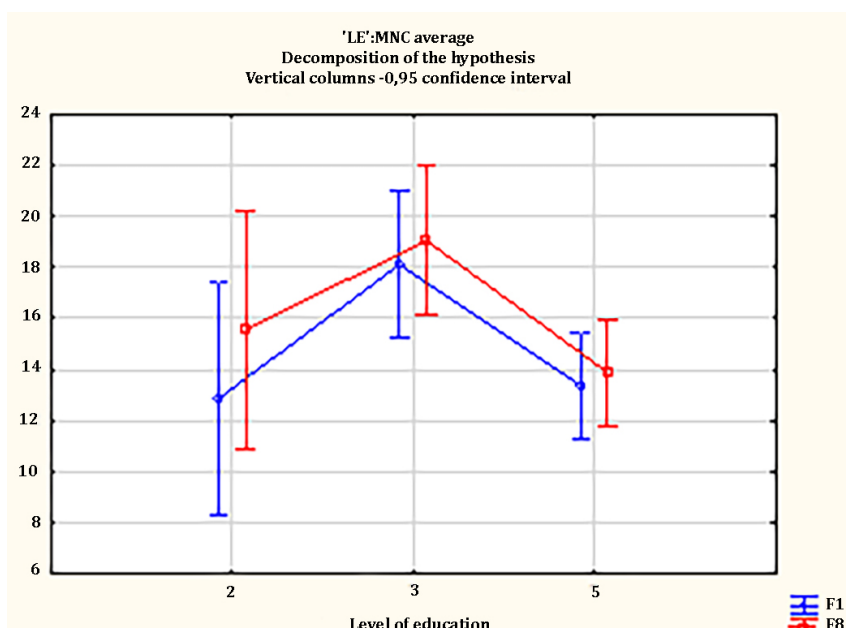
Note. Designations: *Distan.* - distancing; *Accept* - acceptance of responsibility; *Posit.Reas* - positive reassessment.

According to the results of post hoc Tukey analysis, significantly more pronounced indicators of physical pain, discomfort ($M_2 = 12.9$; $M_3 = 18.1$; $M_5 = 13.4$, $p = 0.03$) and negative emotions ($M_2 = 15.6$; $M_3 = 19.1$; $M_5 = 13.9$, $p = 0.014$), compared with other groups, cancer patients with secondary vocational education have (Figure 7).

There were no significant differences in the severity of life-meaning orientations ($F = 1.2$, the effect of $St. = 12$, the error of $St. = 118$, $p = 0.3$) depending on the level of education of cancer patients.

Figure 7

Results of variance and post hoc analyzes of characteristics of the quality of life of cancer patients with different levels of education (Tukey's Test for Post-Hoc Analysis after One-way ANOVA)



Note. Designations: F1 – Physical pain and discomfort, F8 – Negative emotions.

Discussion

Our study revealed that the overall severity index of symptoms has a significantly higher intensity in the group of widowed cancer patients. It is known that the death of a spouse has the highest stress index according to the method of determining stress tolerance and social adaptation by Holmes and Rago (Raigorodsky, 2015). Getting into the conditions of an oncostationary hospital indicates at least a change in eating habits; changing the number of family members living together, the nature and frequency of meetings with other family members, changing social activity, changing place of residence, abandoning any individual habits, changing stereotypes, changing living conditions. Injury or illness also have high scores on this scale, and in conditions of a combination of two life-threatening diseases (cancer and covid) these points, as well as the danger to life, are doubled. Thus, even without taking into account the individual history of cancer patients in the conditions of the COVID-19 pandemic, their stress index is at least 223 points, which corresponds to the threshold resistance, and in the case of loss of a spouse, the degree of stress resistance decreases significantly, reaching more than 300 points. and threatening patients with nervous exhaustion.

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The study by P. Toquero et al. (2021) showed that significantly higher rates of distress were found in patients undergoing psychopharmacotherapy (which, in turn, is an indicator of a decrease in mental health), in those who considered themselves particularly susceptible to infection and took extra measures to prevent coronavirus infection (which may be due to with a high level of anxiety), as well as those whose economic situation worsened during the pandemic (which may be due to the presence of an additional stressor). According to the results of this study, higher rates of emotional distress were found in people under 65 years of age, with a low level of education (which can be explained by a lack of understanding of possible threats), loneliness and belonging to the female sex.

Conclusion

The study examined the relationship between marital status and educational level with the psychological characteristics of cancer patients during the COVID-19 pandemic.

The peculiarities of the relationship between marital status and psychological characteristics of cancer patients during the COVID-19 pandemic were revealed:

- The psychological characteristics of cancer patients who **are in an unregistered marriage** include the dominance of the terminal value of "Financially secure life" and the instrumental value of "Rationalism", which consists in the ability to think sensibly and logically, make deliberate, rational decisions. This group of patients has a greater number of psychopathological symptoms compared to single cancer patients;
- **divorced** cancer patients have a higher position in the hierarchy of values takes courage in defending their opinions and views;
- **widowed** cancer patients have significantly higher indicators of the overall severity of psychopathological symptoms, including high anxiety and hostility, as well as a lower level of meaningfulness of life (including low purposefulness, life effectiveness and satisfaction with self-realization); boldness in defending their opinions and views occupies a higher position in the hierarchy of their values;
- **registered married** oncopatients have a higher level of meaningfulness of life (higher purposefulness, efficiency of life and satisfaction with self-realization);
- **single** cancer patients have a lower severity of psychopathological symptoms compared to patients living in an unregistered marriage, but they cope worse than others with taking care of themselves and their property;
- There were no significant differences in the severity of stress management strategies in patients with different marital status.

The features of the relationship **between the level of education** and the psychological characteristics of cancer patients during the COVID-19 pandemic are revealed:

- Oncopatients with **full secondary education** have a high (maladaptive) intensity of such stress coping strategies as "Distancing" (may manifest itself in devaluing their own experiences and underestimating the possibilities of coping with a stressful

situation), "Taking responsibility" (may manifest itself in taking excessive responsibility and unjustified self-criticism), "Positive reassessment" (it may manifest itself in the underestimation by the personality of the possibilities of an effective solution to a problematic situation). The terminal value of "Active lifestyle" (fullness and emotional saturation of life) occupies significantly higher positions in the hierarchy of their values, and the value of "Cognition" is indifferent;

- Cancer patients **with secondary special education** have a high degree of physical pain, discomfort and negative emotions; their leading value is "Having good and loyal friends";
- The value-semantic sphere of oncopatients with **complete higher education** is characterized by the predominance of the instrumental value of "Honesty";
- There were no significant differences in the severity of life-meaning orientations, depending on the level of education of cancer patients.

The results obtained indicate that illness, as an event with a high stress index, requires high resources from the individual to overcome it. Psychosocial factors influencing disease resistance include marital status and level of education. Widowhood and divorce, as the results of our study show, reduce the resource potential of an individual; level of education is associated with the intensity of pain experience, as well as the intensity of stress coping strategies.

Thus, when developing and implementing a program of psychological support for patients, it is important to take into account a complex of psychosocial factors. Since the marital status of cancer patients has a significantly significant impact on their quality of life, improving the effectiveness of interpersonal relationships may become another task during the psychological support of cancer patients. The study of the leading values in different groups of patients will help in the development of a strategy for resource and existential psychotherapy, prevention of suicidal behavior; taking into account the value orientations of patients in the doctor–patient relationship can increase the effectiveness of treatment, which together will contribute to a more successful reintegration of patients into society, as well as increase their psychological well-being.

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Alexey Yuryevich Maximov – conceptualization, planning, organization of the study.

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Conflict of Interest Information

The authors have no conflicts of interest to declare.