



ONCOLOGY

Impact of assessing the emotional health status in the management of cancer patients

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Abstract

Background and aims. This study explores the impact of emotional health on cancer patients, acknowledging the controversies and lack of high-quality data in the field, particularly for rare cancers and younger patients. It highlights the significant prevalence of depression and anxiety among cancer patients, the inadequacies in addressing mental health during and after treatment, and the inconsistencies in prevalence rates due to varying study methodologies. This study unravels the importance of data regarding mental health status in a clinical dataset to accompany the biological sample to be included in a biobank.

Methods. The study utilized a questionnaire to evaluate the opinions of cancer patients, clinicians, and researchers regarding the inclusion of mental health data in clinical datasets accompanying biological samples in biobanks. The study involved 120 participants (40 from each group), and the data were analyzed using statistical methods.

Results. The study found significant differences in the perceived importance of including mental health information among the three groups. Patients showed a higher tendency (87.9%) to consider mental health questions relevant compared to researchers (72.08%) and clinicians (62.08%). The first four questions regarding emotional well-being received the highest positive responses, particularly from patients (94.3%). The findings underline the importance of addressing the mental health of cancer patients, which is often overlooked. The study emphasizes the necessity for integrating mental health data in biobanks and increasing psychological support for cancer patients.

Conclusions. There are clear differences in how patients, researchers, and clinicians value emotional and psychological aspects. The study underscores the need for better education on modern medical practices and the benefits of comprehensive patient care, including mental health considerations.

Keywords: emotional status, cancer patients, clinical dataset, mental health

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Background and aims

Although the impact of emotional health in the development and treatment of cancer represents a current topic worldwide, it comes with many controversies and uncertainties regarding the available data and essential methods. This situation is caused by the lack of high-quality studies that assess the mental health of cancer patients under treatment, following treatment, and long-term survival patients, especially

in rare cancers and for young individuals. Moreover, studies focused on prevention are insufficient, and research based on data from developing countries is limited [1]. A similar situation is encountered also in Romania.

Cancer diagnosis can have a significant impact on mental health, and the prevalence of depression and anxiety in patients diagnosed with cancer has increased [2,3]. Among patients with no psychiatric antecedents, cancer diagnosis

is associated with an increased risk of common mental illnesses, which can negatively affect the treatment and recovery of the patients, as well as the quality of life and survival time [4,5]. In addition, patients who have previously used psychiatric services are more vulnerable and have a higher risk of mortality following the cancer diagnosis [6]. Nevertheless, the necessities regarding the mental health of cancer patients – with or without psychiatric history – are poorly approached during and after cancer treatment, being focused primarily on monitoring symptoms of physical health and side effects. Moreover, according to data published in recent years, the prevalence of common mental illnesses among cancer patients varies a lot, with a mean prevalence of depression of 13%. However, the range varies from 4%-49% in previously published reports [3,7]. These inconsistencies among studies are mainly due to the different types of cancers assessed in the studies and the lack of a standardized screening tool for psychiatric illnesses. Despite recent advances in the treatment and management of cancer resulting in an improved survival, the interest in addressing mental health in cancer patients to improve their treatment experience, quality of life, and functioning only gained attention in recent years. This approach is characterized by rethinking cancer patients management by integrating psychological and mental health care/wellbeing in the clinical practice. Untreated cancer can have late effects such as neuropsychiatric disorders, anxiety disorders which are already increasing in prevalence in cancer patients [8].

The purpose of the present study was to unravel the importance of data regarding mental health status in a clinical dataset to accompany the biological sample to be included in a biobank. The data extracted from a biological sample can be correlated with clinical data or exposure to different chemical/physical/mechanical factors, but not

necessarily with emotional health. Our study aimed to evaluate the opinion of the cancer patients and specialized personnel regarding the relevance of mental health status by applying a questionnaire comprising a series of single-choice questions, with the possibility of adding supplemental information if the participant considers it necessary. The results of this study can represent valuable support for improving the awareness process and psychological management of cancer patients while treating their physical symptoms to obtain a more comprehensive picture to develop a complete approach that would ensure response to therapy in these patients.

Methods

The present study was approved by the Ethics Committee of ‘Iuliu Hatieganu’ University of Medicine and Pharmacy no. 80/11.03.2019 and of ‘Ion Chiricuta’ Oncology Institute in Cluj-Napoca, Romania no. 99.1/04.05.2018. Six questions regarding aspects of mental health were proposed to be included in a clinical dataset to accompany the biological sample to be included in a biobank to access data regarding the molecular profile to bring closer the concept of personalized medicine.

Participants and data collection

This questionnaire was uniformly applied to cancer patients (n=40), clinicians (n=40), and scientific researchers (n=40). These questions were presented to these 120 participants to express their opinions regarding whether these aspects are relevant for extracting biological data from the biological samples. After completing these questionnaires, data were collected, centralized, and analyzed according to the responders’ group and type of answer (Yes/No/additional comments). Participants had to select Yes or No, with the possibility of adding additional comments. The demographical data of the study participants are listed in table I.

Table I. Demographical characteristics of the study participants (scientific researchers, clinicians, and cancer patients).

Characteristics	Cancer patients (n=40)	Clinicians (n=40)	Scientific researchers (n=40)	
Age (years), median	51 (40.75 - 60.25)	33 (29-39.25)	39 (32.75-43.5)	
Gender	F	34 (85)	25 (62.5)	30 (75)
	M	6 (15)	15 (37.5)	10 (25)
Geographical region	Urban	22 (55)	39 (97.5)	37 (92.5)
	Rural	18 (45)	1 (2.5)	3 (7.5)
Education level	No highschool	7 (17.5)	0 (0)	0 (0)
	School of Arts and Crafts	3 (7.5)	0 (0)	0 (0)
	Highschool	12 (30)	0 (0)	0 (0)
	Post secondary school	4 (10)	0 (0)	0 (0)
	College	11 (27.5)	29 (72.5)	7 (17.5)
	Masters	3 (7.5)	1 (2.5)	8 (20)
	Postgraduate school	0 (0)	2 (5)	1 (2.5)
	Doctoral studies	0 (0)	6 (15)	23 (57.5)
	Post doctoral studies	0 (0)	2 (5)	1 (2.5)

Statistical analysis

Absolute frequencies and percentages were used for categorical answers to the questions. In addition, the association between the responder category and the question's answers was calculated using the chi-squared or Fisher exact test. All analyses were conducted using R environment for statistical computing and graphics (R Foundation for Statistical Computing, Vienna, Austria), version 4.1.2.

Results

Demographics and characteristics

As presented in table I, this study included a total of 120 participants divided into three groups - clinicians (n=40), scientific researchers (n=40), and oncology patients (n=40). This categorization considered the major players in managing and handling a biobank for biological samples collected from cancer patients. In the three groups, women represented 75% in the scientific researchers' group, 62.5% in the clinicians' group, and 85% in the patients' group. In the patient group, the geographical region was more fair distribution between urban (55%) and rural (45%). In researchers and clinicians groups, most participants were from urban areas - 92.5% and 97.5%. When assessing median age, researchers and clinicians had a median age of 39 years and 33 years, while patients were older, with a median age of 51. In addition, patients had participants in all education levels (except postgraduate schools, doctoral and post-doctoral studies), while the researchers and clinicians,

as expected, graduated from college and doctoral studies (Table I).

Relevance of mental health information in a clinical dataset

The questions in this questionnaire are detailed in table II. Generally, we observed that most participants considered that these six questions should be included in a clinical dataset. On the other hand, when we evaluated the choice of participants considering the responders group, we observed statistically significant differences among specialized personnel and patient groups for the first four questions. Patients consider that all six questions should be included in a clinical dataset, where the first four questions had a positive response in over 90% of choices, with a mean value of 94.3%. For the same four questions, the mean value of positive choices in the researcher's group was 72.5% and 65% in the clinician's group. Regarding the last two questions - *Are you ashamed of your illness?* and *How much does the idea of death worry you?* The results among groups are similar, with 71.25% positive responses among researchers, 56.25% among clinicians, and 75% among patients.

Therefore, among researchers and clinicians, the mean value is similar to those obtained for the first four questions, thus supporting the general trend observed. On the other hand, in the patient group, the number of positive choices in these questions that target self-esteem, social status, integration into the society of cancer patients, and the prospect of death decreased.

Table II. Results and statistical analysis of the opinions of the 120 participants, for each group of responders.

Nr. crt.	Question (Yes vs. No)	All (n=120)	Researchers (n=40)	Clinicians (n=40)	Patients (n=40)	P-val
1.	How often do you feel sad? a. not at all b. rarely c. sometimes d. often e. frequently f. all the time g. I don't want to answer	97 (80.83%)	30 (75%)	29 (72.5%)	38 (95%)	0.02
2.	Are you satisfied with how you cope with the disease? a. not at all b. rarely c. sometimes d. often e. frequently f. all the time g. I don't want to answer	92 (76.67%)	30 (75%)	26 (65%)	36 (90%)	0.029
3.	Does the family support you in the fight against the disease? a. not at all b. rarely c. sometimes d. often e. frequently f. all the time g. I don't want to answer	92 (76.67%)	27 (67.5%)	25 (62.5%)	40 (100%)	< 0.001
4.	Do you lose hope in the fight against the disease? a. not at all b. rarely c. sometimes d. often e. frequently f. all the time g. I don't want to answer	90 (75%)	29 (72.5%)	24 (60%)	37 (92.5%)	0.003
5.	Are you ashamed of your illness? a. not at all b. rarely c. sometimes d. often e. frequently f. all the time g. I don't want to answer	81 (67.5%)	28 (70%)	23 (57.5%)	30 (75%)	0.227
6.	How much does the idea of death worry you? a. not at all b. rarely c. sometimes d. often e. frequently f. all the time g. I don't want to answer	81 (67.5%)	29 (72.5%)	22 (55%)	30 (75%)	0.115

Discussion

The mental health of individuals who live with cancer represents a current concern, mainly among developed countries. It is obvious that when compared to the general population, an increased prevalence of anxiety and depression appears in cancer patients. However, estimations vary depending on factors such as cancer type and stage.

Many factors contribute to the onset of depression and anxiety in cancer patients, although this subject is not completely understood, and it needs further research on the topic [2,9,10]. Individual risk factors that increase the risk of depression are similar in the general population, and they include demographical factors, such as age and sex, and social and economic factors, such as unemployment, inferior educational level, and lack of social support [9,11]. Anxiety and depression development in cancer patients also depends on structural factors, including disability benefits, as a cancer diagnosis can have a significant financial impact on the patient [12]. In addition, different psychological factors appear to be important in the mental health status of a cancer patient. In this concern, a key factor is the existence of a psychiatric disorder history, as well as its severity. Research has demonstrated that individuals who benefitted from medical health services before their cancer diagnosis have an increased mortality rate, which may be caused by late diagnosis or improper treatment [6,12,13]. Some personality factors, like neuroticism and coping abilities, may also influence the mental health of cancer patients [14]. Moreover, it was observed that suicide risk in these patients is higher for some cancers with a worse prognosis, such as mesothelioma and lung cancer, especially in the first six months after the diagnosis [15,16]. Although there are several studies showing that patients with untreated mental health issues have a greater mortality rate in cancer [8,17-19], only recently the researchers began to explore how ensuring proper treatment for these issues can reduce the mortality rate or improve response to treatment [20]. There are also studies exploring the experiences of older adults that received a treatment for their mental issues in addition to their treatment for cancer. The results emphasize the fact that comprehensive medical and psychiatric care has a positive effect on cancer patients, improving self-reported experiences, even in patients undergoing palliative care [21]. Integrating mental health care in cancer patients treatment can significantly improve general results via reducing stress and anxiety, which improves the reaction of the immune system leading to better response to treatment. A proper psychological treatment enhances physical symptoms management and development of other emotional aspects that simplifies communication with the medical team. In addition, psychosocial interventions offer community support, reduce isolation and improve

general wellbeing, having a positive impact on prognosis and quality of life of cancer patients [22].

The present study aimed to evaluate the relevance of cancer patient's mental/emotional status in a clinical dataset to accompany a biological sample to be included in a biobank by interrogating three categories of responders: patients, researchers, and clinicians. Individuals in each category expressed their opinion regarding the relevance of questions linked to the emotional status of patients, their method of coping with the malignancy, emotional support offered by their family, and their attitude facing survival and self-esteem in the context of cancer diagnosis and the prospect of death. These aspects were evaluated by addressing six specific questions to unravel their importance for the three groups of responders. Results show statistically significant differences among specialized personnel (researchers and clinicians) and patients regarding the importance of emotional status in evaluating the biological/molecular profile of a patient/tumor via integrating a biological sample in a biobank. Specifically, only 72.08% of researchers and 62.08% of clinicians, considered these questions relevant, compared to 87.9% of patients. The percentage is even higher when we consider only the first four questions, excluding the questions regarding self-esteem and the prospect of death, where 94.3% of patients had a positive choice regarding the presence of these questions in a clinical dataset. Therefore, considering these differences among patients, researchers, and clinicians' responses, we can assume the latter two categories of responders are more familiar with biobanking than the patients. This situation explains why researchers and clinicians consider data regarding emotional status irrelevant in a clinical dataset in assessing a cancer patient's biological/molecular profile via analyzing a biological sample integrated into a biobank. One important aspect of mental health data integration in a biobank refers to the identification of standard diagnostic procedures, approaches, and management of mental issues by a mixed expert team to cover both somatic and psychiatric symptoms.

Nevertheless, these results show that patients are highly open to offering information/details regarding their emotional status. In addition, the high percentage of positive choices in the questionnaire indicate their willingness to communicate. It demonstrated that these patients know the importance of emotional well-being and are most likely keen to accept professional help. It is well known that often cancer patients don't get psychological support or necessary treatment. This situation is generated by various factors, including a lack of awareness and proper identification of psychiatric symptoms, a lack of support, and a lack of evidence regarding treatment efficiency and patient preferences [1].

Conclusions

The results of this study highlight significant differences among the three categories of responders (patients, researchers, and clinicians) regarding the importance of emotional and psychological aspects in a clinical dataset to accompany a biological sample to be integrated into a biobank. The results of our study clearly show the need to inform the general population about the concepts of modern medicine and highlight its benefits in patients diagnosed with complex pathologies, such as cancer. On the other hand, this study has several limitations related to the relatively small cohort of responders analyzed, as well as the fact that the target population is from a restricted geographical area – patients, clinicians, and researchers associated with ‘Ion Chiricuta’ Oncology Institute in Cluj-Napoca, Romania. Therefore, more complex future investigations focused on larger and diverse cohorts, as well as longitudinal studies are required for a better understanding of long term impact of mental health in the management of cancer. Exploring the efficacy of different mental health interventions in cancer treatment and biological mechanisms that connect mental health and cancer progression are also promising domains for future research.

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