

MEDICINE AND SOCIETY

Prioritizing Mental Health Research in Cancer Patients and Survivors

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Abstract

The United States spends billions of dollars annually on cancer research. Historically, compared to other areas of cancer research, very little funding has been dedicated to mental health research in cancer patients and survivors. Previous studies have indicated that psychological disorders are common in patients with cancer and might have significant influence on overall morbidity and mortality. However, adequate data are lacking to better assess this influence and the potential benefits of interventions. As the number of cancer survivors is projected to grow dramatically in the coming years, we review the importance of dedicating additional funding to mental health research in cancer patients and survivors.

Introduction

In recent years, there has been a shift from viewing cancer as an acute medical problem to viewing it as a chronic condition that starts with a diagnosis and ends with a patient's death, commonly many years after initial diagnosis [1]. The National Cancer Institute spent over \$3.5 billion on cancer research in 2015 [2]. Yet, if history is any indication, very little of that funding will be spent on assessing potential psychological disorders—from initial diagnosis through treatment and post-treatment surveillance—in cancer patients and survivors [3]. In an era of improved mortality rates—by 2026 it is estimated that more than 20 million people in the US will be considered cancer survivors [4, 5]—[research priorities](#) will likely need to be realigned to include more funding to assess and treat potential short-term and long-term mental health disorders in cancer patients and survivors. In order to better understand the need for additional funding and research in this field, we review the prevalence and clinical effects of psychological disorders in cancer patients, some goals for future studies, potential benefits of such studies, and potential funding sources.

Prevalence and Clinical Effects of Psychological Disorders in Cancer Patients

The following review of pertinent statistics provides support for developing a body of research that would serve to inform the understanding and treatment of mental health issues specific to cancer patients and long-term survivors. To begin, for adults diagnosed with cancer and other chronic illnesses, the “risk of psychological disability” is nearly six

times higher than for adults not living with cancer [6]. Moreover, population-based data indicate that adult cancer survivors are more than twice as likely to have “disabling psychological problems” as adults without cancer [6]. Among long-term cancer survivors, depression and anxiety are the most commonly diagnosed psychological disorders [7]. However, mental health care [disparities](#) exist between rural and urban cancer survivors with respect to transportation, practitioner availability, and insurance access [8].

In addition to being more prevalent in cancer patients, mental health disorders, if untreated, have been shown to negatively influence the underlying cellular and molecular processes that facilitate the progression of cancer [9]. Moreover, there is clear evidence that depression, which might be undiagnosed, is associated with poor adherence to medical therapies [10]. These statistics only begin to demonstrate the heightened risk of overall health deterioration for cancer patients who simultaneously suffer from common psychological disorders [10].

Why Addressing Mental Health in Cancer Patients Is Important

Given the prevalence of psychological disorders in cancer patients and their potential negative effects on outcomes, in the absence of adequate data, neither physicians nor patients can accurately predict the mental health impact of cancer diagnosis and treatment, thereby potentially limiting a patient’s autonomy. Particularly when alternative therapies exist or in cases in which aggressive treatment has not been definitively shown to improve outcomes, such as in cases of early stage ductal carcinoma in situ [11], patients should be informed, to the extent possible, of potential mental health side effects of available options. This would allow the physician and patient to make informed decisions regarding treatment by encouraging the patient to be vigilant about any mental health issues that develop and increasing the physician’s and patient’s ability to assess overall costs and benefits of all available options. Thus, mental health effects should be evaluated at diagnosis, throughout treatment and the post-treatment phase, and in [survivorship](#) [12]. Given that untreated mental health disorders negatively affect treatment and cancer progression [10], the question naturally arises as to whether treatment of such disorders has any positive effect on overall morbidity and mortality. This relation is yet to be conclusively established.

In our opinion, some important questions that remain unanswered and that should be addressed include: (1) whether certain cancer types place patients at more risk of developing psychological disorders, (2) the extent to which cancer diagnosis causes psychological disorders, (3) whether iatrogenesis contributes to psychological disorders, (4) whether treatment of psychological disorders has any effect on overall morbidity and mortality, and (5) whether psychological sequelae are experienced by cancer survivors. In order for these questions to be answered, prevention, detection, and treatment of psychological disorders must be prioritized within the cancer research funding agenda.

Potential Funding Sources for Mental Health Research

Although many funding venues might be available, in this section we explore three potential sources, including federal grants, public-private partnerships (PPPs), and private funding from the pharmaceutical industry. These venues were chosen based on their past successes in supporting oncological research.

Federal grants. Allocating federal funding for assessment, prevention, and treatment of potential side effects of cancer therapy is not unprecedented. For instance, in the late 1990s, the National Institutes of Health (NIH) made grants available specifically to address “uncomfortable, disabling, or even life-threatening secondary clinical problems” caused by oncological treatment modalities [13]. Other examples include the National Institute of Mental Health’s (NIMH) support for research on mental disorders in “people with other physical disorders,” such as cancer, in 2010 [14]. That year, the NIMH solicited studies on preventing depression in patients undergoing cancer treatment and on promoting behavioral changes in people with underlying mental disorders and with high-risk behaviors such as smoking, poor nutrition, and sedentary lifestyles to reduce their risk factors for developing cancer [14]. Therefore, if there is sufficient political will, similar federal grants can be developed to more broadly assess mental health care in cancer patients and survivors.

Strategic partnerships. Alternatively, strategic partnerships have the potential to help researchers achieve necessary funding levels. For example, PPPs hold enormous potential for increasing translational—from bench to clinic—research investments [15]. These partnerships are already found in other areas of oncological research and can therefore be developed to enhance mental health research [15]. Such partnerships can be developed through existing frameworks if priorities are aligned. The Foundation for the National Institutes of Health (FNIH), which was established by Congress in 1990, operates as an independent organization that in part facilitates PPPs [16]. In this capacity, it procures funding for, and supports alliances between, programs and institutions that work to advance the mission of the NIH [16]. The FNIH could implement mental health research within oncology research by helping to form new PPPs targeting this specific aspect of cancer research. Various other partnerships could help researchers to overcome resource limitations, including those incorporating nontraditional disciplines such as engineering, behavioral sciences, and social sciences, which could be tied into mental health.

Private funding. It is worth examining previous efforts to treat cancer therapy side effects as a model for how private funding might flow to mental health research. Consider the pharmaceutical industry’s response to the side effects associated with administration of chemotherapy and radiation. Chemotherapy-induced nausea and vomiting (CINV) was once reported as a top concern of patients undergoing cancer treatment. In fact, this particular side effect of chemotherapy in the not-too-distant past led to prolonged

hospitalizations that could result in premature termination of chemotherapy [17]. CINV became a major barrier to care especially after the development of highly emetogenic platinum-based therapies in the 1970s [17]. Once studies established that available antiemetic agents were insufficient to address this problem, CINV became a major area of pharmaceutical research with dedicated funding and studies [17]. Consequently, a number of new antiemetic agents were developed in the 1980s and 1990s [17]. With the development of national and international guidelines, the focus shifted from treatment to prevention through antiemetic prophylaxis [18]. Although CINV remains a concern, studies have shown that whereas the overall incidence of CINV was 83 percent in 1979 [19], the incidence of acute nausea was 35 percent just 25 years later [20]. The pharmaceutical industry's successful efforts had a profound impact on patients' quality of life and allowed many patients to complete chemotherapy regimens who previously would not have been able to do so [17]. In fact, the progress in prevention and treatment of CINV was voted as one of the "Top 5 Advances in 50 Years of Modern Oncology" [21]. This achievement was a result of the pharmaceutical industry's response to studies demonstrating the debilitating effects of CINV [17]. Sufficient preliminary research demonstrating short-term and long-term psychological side effects of cancer diagnosis, care, and survivorship may lead to a similar response from the pharmaceutical industry in terms of funding and dedicating resources to treatment of psychological harms associated with cancer.

Conclusion

As the foregoing makes clear, psychological disorders are a commonly found comorbidity in cancer patients and survivors, and, if untreated, they potentially can have a negative impact on their care. Correcting for the lack of research at the intersection of cancer and mental health requires a fundamental shift in research interests and reprioritization of resources. We believe that advancing the cancer research agenda to adequately address mental health outcomes requires the successful interplay of several factors. First, it requires attention from medical researchers and cancer patients, policymakers, the pharmaceutical industry, and funders alike. Second, it requires the reframing of cancer research to encompass both short-term and long-term cancer patient and survivor mental health. Third, it requires cancer patients to take an active role in monitoring and reporting perceived mental health reactions to cancer therapy and to make informed decisions with regard to the costs and benefits of that therapy. Fourth, it requires strategic partnerships and creative collaborations across multiple fields of study. Finally, it would benefit from the review of previously employed models that proved successful—such as those pertaining to CINV. With oncology-related medical visits expected to increase from 38 million in 2005 to 57 million in 2020 [22], continuing to overlook the mental health of cancer patients will render incomplete any emerging and imperative cancer research.

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