

Mental health as a clinical hallmark of cancer

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Abstract

A diagnosis of cancer bears a tremendous psychological impact on a patient's psyche. It is common for individuals diagnosed with cancer to develop anger, anxiety and/or depression during the first year of the disease. However, the moderate rate of major depressive disorder and the high rate of minor depressive disorder are accompanied by sub-threshold forms of depression that are at risk to be under-recognised and untreated.

Introduction

Recent research studies have identified extreme suppression of anger as the most common psychological trait amongst 160 elderly breast cancer patients [1]. Other studies have confirmed that further to extreme anger, suppression, repression or restraint of anger are emotions generally exhibited by breast cancer patients [2]. Epidemiological studies have reported that participation in psychological support groups is associated with better health outcomes for these patients, calling for an integration of such a modality in cancer management and treatment [3]. With such a consistent evidence pointing to a link between emotional distress and chronic disease, the question asked is whether suppressed anger could also be identified as an indicative factor in the progression of the disease after diagnosis.

A complete eradication of a malignant tumour is not always achieved even after the completion of a conventional aggressive treatment. In many instances, interventions of complementary and alternative medicine have been shown to achieve excellent results and to work well in conjunction with conventional approaches, as tumours increasingly meet the definition of chronic diseases [4]. Treatment protocols of some cancers like breast, prostate, and colon cancer can last for months; individuals on certain oral chemotherapeutic regimens particularly for breast cancer and some forms of leukaemia often require chemotherapeutic interventions for years. Even after the completion of a treatment protocol, cancer survivors generally need to receive ongoing physical care from multiple specialists in order to manage the long-term residue of the illness and its treatment [5].

In addition to dealing with severe concerns brought about by their diagnosis, cancer patients and their families must cope with the stresses caused by physically demanding chemotherapy and radiation therapy treatments, which often result in physical impairment, disability, fatigue, and pain [6]. Physical debilitation further contributes to emotional distress, depression and anxiety, inevitably leading to substantial social problems, such as the inability to work and sudden loss of income. Furthermore, the presence of pre-existing psychological and social stressors often caused by a weak or absent social supports and/or lack of health insurance has been shown to contribute to cancer patients' emotional distress, with physical, psychological, and social stressors resulting from and contributing to each other [7].

Age variables

Regardless of the type of cancer and the chosen conventional treatment, the physical and developmental age of cancer patients have also demonstrated to be a contributing factor for their psychological health [8]. According to data distributed by the American National Cancer Institute in 2013, approximately 60 percent of individuals who were diagnosed with cancer are aged 65 or older, 39 percent are young and middle-aged adults, and 1 percent is aged 19 or younger [9].

There is evidence showing that treatment care and aging are variable indicators. Health and well-being, social circumstances, living arrangements, and age-related changes, resulting in diminished psychological and physical functioning, vary by individual and are not determined by chronological age [10]. However, older adults, when compared to a younger population, are more likely to present with one or more pre-existing chronic diseases as well as increased functional impairment and disability, both of which can only compound on the stresses imposed by a diagnosis of cancer [11]. Moreover evidence indicates that older cancer patients are at greater risk of displaying reduced health-related decision making abilities [12].

Compared to healthy people, at the time of diagnosis, adults with or without a history of cancer, more frequently report a fair or poor state of health (30 percent); other existing chronic medical conditions (42 percent); one or more physical limitations in performing activities of daily living (11 percent); other functional disabilities (58 percent), and, among those under the age of 65, it is commonly recorded a chronic inability to work because of an existing health condition (17 percent) [13]. Research studies have reported that cancer survivors who experience limitations in performing physical daily activities, indicated cancer to be the causative factor of their poor quality of life. Likewise, the incidence of chronic diseases amongst cancer survivors has been shown a much higher incidence when compared to those

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without a history of the illness. Data collected between 1998 to 200 by the National Health Interview Survey (NHIS) in United States indicate that there is a strong link between a history of cancer and the onset of permanent disability. Further research studies have demonstrated the connection between cancer survivors and the development of cardiovascular disease. These studies have also been shown that when a history of cancer and chronic disease coexist, there is a 10 fold higher risk for disability to occur [13]. Survivors of childhood cancers have been found to suffer with a higher incidence of chronic diseases in their early or middle adult years. A large retrospective study conducted on over 10,000 adults cancer survivors has produced some alarming statistics: 62% of individuals between the ages of 18 and 48 who had been diagnosed with cancer before the age of 21, had developed at least one chronic disease, with 27% of them being affected by a severe or life-threatening condition such as kidney failure and congestive heart failure. Although on average chronic health conditions have been estimated to appear about 17 years after the cancer diagnosis, even after 30 years from a previous cancer diagnosis, three-fourth of individuals with a previous history of cancer have been shown to suffer with significant chronic illnesses.

With the exception of a review conducted by Perry *et al.* (2009), none of the above research studies have reported estimates of the incidence of mental health problems affecting individual with a previous history of cancer [14].

Cognitive impairment

Cognitive impairment is also commonly detected amongst older cancer patients. Cancer and the therapeutic modalities used to treat cancer have been associated with alterations in patients' cognitive, emotional, and neurologic functioning. It is widely accepted that disease involving the central nervous system (CNS) and treatments targeting it (e.g., radiotherapy) may have adverse effects on cognitive functioning. Studies conducted on breast cancer patients treated with conventional chemotherapy revealed a consistent decline in global cognitive functions, short-term memory, language skills (word-finding ability) and spatial ability.^[16] Other research findings have pointed out that verbal memory and other cognitive functions appear to be affected in cancer survivors in different degrees. For example, adults treated for lung, lymphoma and colorectal cancers display varying degrees of cognitive functional impairment depending on the treatment received [17]. Cross-sectional and retrospective case-control studies strongly suggest an association of depression symptoms with cognitive impairment [18].

Fatigue

Fatigue at rest is another commonly detected symptoms reported by the majority of cancer patients to be the most significant factor affecting their quality of life. The estimated rate of fatigue displayed by cancer patients vary significantly depending on the method of treatment. For example, the level of fatigue expressed by breast cancer patients prior to the start of chemotherapy was calculated to be 4% and to increase dramatically to 91% for those patients who had undergone surgery and chemotherapy [19]. Despite the widespread occurrence of cancer-related fatigue, a 2002 review conducted by the Agency for Healthcare Research and Quality (AHRQ) in United States revealed that studies on the mechanism of cancer-related fatigue and treatment options were very limited [20]. Fatigue is reported by cancer patients as negatively impacting their physical and mental capacities [21]. A recent cohort study has demonstrated that almost half of the total number of

cancer patients who participated in the study reported fatigue to be one of the most distressing symptoms they experienced [22].

Pain

Quality of life of cancer patients is significantly impacted by pain. An estimated one-third to one-half of all cancer patients undergoing conventional treatment suffer with pain which is often not entirely eliminated by analgesics and other therapies. Research has been shown that pain continues to negatively impact cancer patients even when there is no longer any sign of the disease and it is considered to be a contributing factor to fatigue as well as diminished physical and mental functions [22].

Pain, fatigue and physical impairment negatively impact cancer patients in their ability to conduct daily routine activities. Activities such as preparing meals, bathing, using the restroom, shopping, paying bills and using transportation have been found to be limited for most adults cancer patients. Compared with age-matched individuals, older patients with a history of cancer are more likely to require physical and psychological support to help them coping with various activities of daily living [23]. Research studies conducted between 1998 and 2000 have demonstrated that individuals with a prior history of cancer and without co-existing chronic illness, reported limitations in their ability to perform daily activities [24].

The emotional distress caused by a diagnosis of cancer and its conventional treatment; the experience of pain, fatigue and diminished cognitive function contribute to either create or worsen pre-existing psychological distress for the patients, their families and other caregivers [25].

Psychological distress

The incidence of psychological distress has been shown to vary considerably depending on type of cancer, time since diagnosis, amount of pain, degree of physical impairment and prognosis. A comprehensive study conducted on 4,500 older adult cancer patients has indicated that the rate of significant psychological distress felt by individuals varied from 29% to 43% depending on the type of cancer being diagnosed [14] and the degree of depression, and anxiety displayed [27]. Population studies have detected symptoms of post-traumatic stress disorder (PTSD) and post-traumatic stress symptoms (PTSS) to characterise older adults cancer patients [28]. According to the American Psychiatric Association's Diagnostic and Statistical Manual of Mental Disorders (DSM-IV-TR), 2000, a diagnosis of either PTSD or PTSS applies to those individuals who have experienced or perceived an event to be life-threatening. Those individuals diagnosed with cancer who do not develop a mental health condition, have been found to experience various forms of psychological distress, including guilt, anger, confusion, fear and sadness [29]. Furthermore, anxiety, concerns about body image and (lack of) communication with family members, changes in sexual function and a general heightened sense of vulnerability are commonly felt by cancer patients. Moreover, cancer patients often face spiritual and existential issues involving their faith and the meaning of end of life. In response to these and other stresses, cancer patients often report feelings of isolation, anger and diminished self-esteem [30].

Caregivers and supporters

A diagnosis of cancer has been shown to profoundly affect the patient's family members. A meta-analysis conducted on the psychological distress recorded by both patients and their primary

caregivers, has shown that the psychological distress experienced by these individuals is as severe as that demonstrated by the individual diagnosed with cancer [31]. Moreover, research studies on husbands/partners/daughters and friends of women diagnosed with breast cancer, have documented that the degree of depression and anxiety expressed by the patient was reflected in these individuals in a bidirectional way [32]. Likewise, family members expressing a positive attitude have been shown to beneficially improve the mental health status of cancer patients.

Predominantly family members but also friends often provide substantial amounts of emotional and logistical support to cancer patients [33]. The estimated value of their non-reimbursed care and support has been shown to exceed \$1 billion annually [34]. Further, when cancer patients experience acute or long-term inability to care for themselves or to carry out their roles in the family, family members often step in to take up these roles. Taking on these responsibilities requires considerable adaptation and re-adaptation as the course of the disease changes.

The emotional stress experienced by older caregivers is often worsened by the morbidity accompanying their own aging [5]. Older caregivers who provide support to their spouse and report caregiving strain are 63 percent more likely to die within 4 years than those who do not provide care to their spouse or who provide care but report no significant strain [35]. High stress levels affecting family caregivers have been shown to interfere with their ability to provide the emotional or logistical support patients needs. Due to the demands brought about by the necessary adaptation and demands of the cancer patient, family members are sometimes considered “second-order patients” [36]. The disruption of simple daily activities for those individuals who have mastered a great degree of self-sufficiency is particularly difficult to cope with. The effects of conventional cancer treatment negatively impact the self-esteem of the individual diagnosed with the disease because it requires to temporarily or permanently give up known skills and activities. Consequently, particularly older cancer patients are psychologically and emotionally affected when they suddenly experience developmental delays, regression, or inability to perform social roles, as well as limitations in grand parenting abilities and the inability to act as caregiver to others in their family.

Paediatric oncology patients

Studies have shown that children diagnosed with cancer and who are hospitalised during periods of critical growth are at higher risk of displaying loss of developmental steps, [37] whilst adolescents have been shown to suffer a reduction in independence and critical social skills. Furthermore, physical changes resulting from conventional cancer treatment, has demonstrated to negatively impact on endocrine function, with a general delay in puberty and impaired mental development. Adolescents and older cancer survivors have been shown to endure significant difficulties in planning for the future and in establishing educational and career aspirations. Because of their illness, adolescents and young adults may gain less work experience and as a result, they may be disadvantaged in the labour market. Their status can be further exacerbated if their illness or treatment has resulted in disfigurement or impediments requiring special consideration in the workplace.

Fear of social stigma and discrimination following a cancer diagnosis and treatment has been documented in some studies. School-age children may return to their social group displaying physical changes such as amputations, loss of hair and/or weight gain, which

may result in exclusion or abandonment. These children have also been found lacking mental abilities when compared to their peers, resulting in another obstacle in re-entering social relationships [38].

Economic factors

A survey study conducted in United States in 2003 has shown that nearly one in five (12.3 million) individuals diagnosed with cancer belonged to a low socio-economic status preventing them to pay medical bills [39]. Furthermore, a vast majority of these individuals have been shown to be unable to pay rent or mortgage, transportation and food as a consequence of cost of medical bills [40]. Data published by the National Survey of U.S. Households Affected by Cancer in 2006, has revealed that one in four families in which a member had been diagnosed with cancer had used most of their savings to pay medical bills. Over 7 percent of the surveyed population was forced to borrowed money, and 3 percent had declared bankruptcy. Eight percent of cancer patients had delayed or did not receive care because of the financial cost involved in their care. In 2001, bankruptcy filed by individuals indicated that the cost of medical bills associated with conventional cancer treatment, to be one of the critical factors for their financial problems. Not surprisingly, members of the American Society of Clinical Oncology (ASCO), the Oncology Nursing Society (ONS), and the Association of Oncology Social Work (AOSW) have reported psychological distress due to financial concerns as a frequent subject of patient inquiries [41]. Most of the financial costs stem from rising prices of conventional medical treatments, expensive drugs and other medical supplies, which are often not covered by health insurances. Moreover, cancer patients undergoing conventional therapies often suffer with prolonged periods of unemployment and net loss of income. In 2006, the Institute of Medicine (IOM) published a report titled “From Cancer Patient to Cancer Survivor: Lost in Translation”, that demonstrated that the vast majority of cancer patients [42] stopped working or experienced a change in employment (reduction in work hours, interruption of work, change in place of employment) immediately after being diagnosed with cancer. Data from NHIS between 1998 and 2000, have demonstrated that 17 percent of individuals with a history of cancer reported being unable to work, compared with 5 percent of those without such a history [24]. A retrospective cohort study carried out in five medical centres in United States and conducted on 1,435 cancer survivors aged 25–62 who were employed at the time of their diagnosis, had resigned from their employment while undergoing cancer treatment. Although 84 percent of cancer patients returned to work within the 5 years after diagnosis, with 73 percent within the first 12 month after diagnosis, a significant minority (16 percent) composed by older patients chose not to return to work. Of those who decided to return to work, a minority had chosen to stop working due to health concerns and lack of coping abilities within the three years following treatment. Individuals diagnosed with head and neck cancers, lymphatic and stage IV blood cancers as well as cancers of the central nervous system have been shown to record the highest unemployment rates [42]. The changes in employment patterns are reflective of either a desire for shifting priorities or of a need for seclusion. However, many cancer patients have reported that their employability was severely impacted by their diminished ability physical and mental functions resulting from conventional cancer diagnosis and treatment.

Conclusion

The physical and psychological problems described above can be exacerbated by, or produce significant new social problems. Financial stress resulting from low income, the cost of health care, or a lack of

health insurance, as well as reduced employment and income, can result in substantial stress. While the fundamental resolution of such social problems is beyond the abilities of health care providers, the evidence described shows why attention to these problems is an integral part of good-quality health care and how they should be addressed within the constraints of clinical practices.

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