

## Cancer related PTSD symptoms in patients of all ages and their relatives, and general risk factors

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Since the DSM-IV, a life threatening disease is considered as a potential source of PTSD. One of the core elements of the diagnosis is experiencing a traumatic event or being a witness of a close person experiencing it. For instance, cancer might be the stressor that affects not only patients, but also their relatives and caregivers. Cancer-related PTSD may occur at any stage of life (childhood and adolescence, adulthood, old age) and manifests itself in different ways. The first purpose of this paper is to describe each age group, thus showing PTSD from the perspective of children and teenagers, adults, and seniors. The second aim is to present the symptoms in the parents, siblings, and children of cancer patients. The third task is to describe risk factors that affect the occurrence of PTSD. Additionally, there are suggestions regarding issues which deserve future consideration.

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**Key words:** PTSD, cancer, cancer patients, risk factors, relatives, children, adults, seniors

### Cancer as a stressor

The diagnosis of cancer means one of over a hundred different diseases [1]. Therefore, given its broad character, cancer as a potential stressor is not easy to define. However, features common to all such as duration, size, and stage allow cancer to be distinguished from other health-related stressors. Furthermore, it is well-established that psychological distress can affect not only the patients, but the whole family [2, 3], and stress or anxiety can occur at the time of diagnosis, treatment or regular follow-up tests [4]. For this reason, it is important to put patients in a broader perspective: from the moment when they start to raise suspicions of suffering from illness, until they recover completely [5, 6]. Patients may reveal a wide range of reactions. Stanton, Rowland, and Ganz [7] indicate that termination of the treatment, relapse, and survival 2 and 5 years after the diagnosis can generate similar reactions: symptoms of depression, fatigue, cognitive impairment, and pain.

### PTSD symptoms according to the DSM-V definition

Prior to the fourth edition, the DSM did not include life-threatening disease as a stressor which could trigger Post-Traumatic Stress Disorder (PTSD) [8]. In the fifth edition [9], PTSD no longer belongs to the category of anxiety disorders, but to disorders related to trauma and stress. There are the following symptomatic criteria to identify it [10]. First of all, is experiencing a traumatic event, or being a witness to someone else experiencing one, or knowledge that a close person has experienced a traumatic incident or having repeated or extremely intense exposure to the aversive details of such an incident. Secondly are symptoms of intrusion (e.g. trauma-related memories or dreams) and avoidance: avoiding everything connected to the trauma by avoiding thoughts, conversations, people, places. Then come negative changes in mood and the presence of some cognitive processes (e.g. inability to remember important

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elements of the incident, distorted beliefs about the causes and consequences of the incident, an inability to experience positive emotions — all these symptoms have a persistent character). Next, there are changes in arousal and reactivity (e.g. careless behavior, excessively cautious behavior, problems with concentration). All these symptoms must occur for a minimum of one month, cause significant clinical danger or disturbances in functioning as a result of the disorder. Finally, there must be no association of these symptoms with the effects of taking any substances or having another medical condition.

The DSM-IV [8] also defines acute stress disorder (ASD). Although ASD is diagnosed with similar symptoms to PTSD, the main focus is on dissociative symptoms. Kangas, Henry, and Bryant [11] report that stronger dissociative symptoms at the time of cancer diagnosis were the only predictor of PTSD intensity after six months of observation. Despite the fact that the results of the study indicate that the diagnosis of ASD includes many people who later develop PTSD, there are also many cases of PTSD without prior diagnosis of ASD [12]. In contrast, Mehnert and Koch [13] indicate that only very few people in their study met the criteria for both PTSD and ASD.

### **PTSD in the experience of cancer patients**

Although there is no doubt that the diagnosis of cancer and undergoing a healing process is a serious and often traumatic experience, researchers do not agree on what psychiatric symptoms should be expected in patients [14]. Undoubtedly, diagnosis and treatment may cause PTSD symptoms [e.g. 15–17], but it is difficult to discern a pattern, because many factors can influence the level of stress experienced. One such factor is the stage of the disease [18]. Women diagnosed at an early stage of the disease may experience less stress because their prognosis is better, and therefore the chances of recovery are higher. Meanwhile, women with late-stage disease can be expected to have a higher level of stress. A large number of such factors may give a rise to the problems of overdiagnosis [19], misdiagnosis [20], low rates of PTSD symptoms [18] and lack of recognition of a connection between cancer and PTSD [21]. Many types of cancer have been investigated, e.g. head and neck cancer [22], breast cancer [23–25], colorectal tumor [26], ovarian cancer [6], prostate cancer [27].

### **Childhood and adolescence**

It was not always understood that children can suffer from PTSD [28]. However, we can observe a wide spectrum of PTSD symptoms in children as well [29]. When a person suffers from an illness as a child, PTSD symptoms may appear simultaneously to the illness (when the patient is a child) or occur later, when the patient is an adult. Thus, we can distinguish two perspectives of experiencing PTSD as a result of childhood cancer: in childhood and in adolescence.

Experiencing long-term stress as a result of illness is a natural process. Pelcovitz et al. [30] compared PTSD symptoms in children with cancer and abused children. They found more symptoms in children with cancer. Meanwhile, Phipps, Jurbergs and Long [31] demonstrated that the symptoms of post-traumatic stress disorder remain at a similar level in both children with cancer and their healthy peers. In this case, the adaptive style proved to be a more important factor than health condition. Children do not necessarily consider cancer as the most stressful factor in their lives [32]. They are able to adjust [33].

The other perspective is experiencing PTSD symptoms caused by having cancer in childhood as an adult. Going through a cancer in childhood may be a factor increasing the risk of PTSD symptoms in adulthood [34]. Hobie et al. [35] indicated that one-fifth of young people who overcame cancer in childhood still met the diagnostic criteria for PTSD. Similarly, Seitz et al. [36] observed that in adolescent cancer patients there is an increased risk of post-traumatic stress symptoms in adulthood. Ganz, Raz, Gothelf, Yaniv, and Buchval [37] showed that up to 29% of such patients met strict PTSD criteria, and only 16% did not experience any of the symptoms. Similarly, the experience of PTSD symptoms in adults who were recovering was observed by Langeveld, Grootenhuis, Voute, and De Haan [38]. Additionally, cancer survivors with PTSD are more prone to mental disease [39] and manifest more mental problems [40]. However, most of the survivors of childhood cancer do not describe cancer as the most stressful event in their lives [41].

### **Adults**

PTSD is more often observed in cancer survivors than in the non-cancer population [42]. Most of the newly diagnosed patients meet the criteria for some PTSD symptoms, nevertheless a full PTSD diagnosis is rare [43]. The vast majority of the data comes from research on women [e.g. 19, 44, 45].

Researchers observe a decrease of symptoms, especially after some therapies [46] however some patients experience persistent or even worse symptoms years afterward [47, 48]. Naidich and Motta [44] observed that women with breast cancer showed clear signs of PTSD, such as unwanted thoughts or avoiding specific behaviors. They pointed out that people who overcame the disease showed a higher level of depression. Depression and anxiety are often associated with PTSD [49]. Psychophysiological data support PTSD occurrence in cancer patients [50, 51]. Meanwhile, Green et al. [18] indicate that only 3% of interviewed women met strict PTSD criteria related to the disease within 4-12 months after the end of treatment. Patients with breast cancer may also reveal a negative emotionality with very low PTSD symptoms [52]. Thus, although breast cancer has brought many ailments to patients, clinical signs of PTSD have not been observed. In the face of such results, it is difficult to

qualify the disease as a stressor responsible for the occurrence of PTSD. Arnaboldi et al. [53] show that intrusion was negatively correlated with time elapsed since the diagnosis. However, they point out that patients with a higher intrusion level have problems with adjustment to the cancer as much as two years after the diagnosis. Cancer-related PTSD can be also a mediator for some cognitive dysfunctions [54, 55] and influence sleep disturbances [56, 57].

### Seniors

So far, researchers have devoted the least attention to the symptoms of PTSD in elderly people. This area requires deeper exploration for at least two reasons. First, the risk of cancer increases with age [58], so proportionally more patients may need psychological help in this age group. Second, taking into account the aging of society, seniors constitute an increasing proportion of the population. Age is an important factor that affects the ability to cope with a disease. Older women with breast cancer do better than younger people at the beginning of the diagnosis [59] and enjoy better quality of life [60]. Deimling, Kahana, Bowman, and Schaefer [61] show that the majority of older people with long-term cancer do not show clinical symptoms of PTSD, nonetheless they do have symptoms of depression and other symptoms resulting from the disease. In old age, people also experience other diseases more, which influences their general well-being [62].

### PTSD in cancer patients' relatives' experience

The occurrence of cancer affects the whole family - not only patients, but also their relatives who support the ill and are exposed to stress. Therefore, there is a high probability that a member of such a family will experience symptoms of PTSD [63]. This might be a very undesirable situation, given the findings that social support is an important factor in keeping a positive mood in cancer patients [64], while caregivers may experience even more PTSD symptoms than patients [65]. In families where parents manifest more post traumatic stress symptoms, children with cancer exhibit more psychosocial problems [66].

Undoubtedly, when children get cancer, parents are the most vulnerable, as the closest persons in the child's environment. Mothers of children with cancer manifest PTSD symptoms [67] and to a greater extent than mothers of healthy children [68]. Similar results are observed in fathers [69, 70], although Masa'deh and Jarrah [71] indicate that mothers are at higher risk of PTSD. Iranmanesh, Shamsi, and Dehghan [72], supported by Pöder, Ljungman, and von Essen [73], observe that, indeed, mothers have more symptoms of post-traumatic stress than fathers. Infancy is a critical period in development, thus this moment generates many post traumatic stress symptoms [74]. Parents of newly diagnosed children show more symptoms than parents of

long-time survivors [75]. Healthy parents are more susceptible to post-traumatic stress, as compared with their children diagnosed with cancer [76]. However both young patients and their parents exhibit PTSD symptoms long after treatment [77].

In addition to parents, a higher level of post-traumatic stress also occurs in siblings of cancer patients [78, 79]. Siblings experience more stress if their families function worse, if they experience lower parental acceptance and higher psychological control [80].

Children experience stress as a result of parents' illness in various ways. Their reactions may vary depending on the age, sex of the child and the parent [2]. Boyer et al. [81] observed that 20% of women with breast cancer and 13% of their daughters showed symptoms consistent with PTSD. However, if a mother explains her diagnosis to the children it may deepen the relationship between them [82].

### Risk factors

So far, the following factors affecting the development of PTSD are known: perceived threat to life, experience of a trauma or severe stress in the past [83], social support, disease stage [84, 85], time elapsed from the end of treatment [84], decrease in physical fitness [85]. Particularly at risk of PTSD symptoms are younger women with reduced ability to use internal ways of dealing with emotions and these whose lives have changed significantly during the illness [86]. More intense forms of treatment also increase the incidence of PTSD in women [87]. This seems to be understandable, according to the view that the development of PTSD symptoms is associated with the level of the threat to life (and, therefore, the greater the risk, and hence, the more intense the therapy, the higher the probability of PTSD) [81]. Abbey, Thompson, Hickish, and Heathcote [88] indicate young people with more advanced stage and shortly after the end of treatment as a risk group.

Taieb, Moro, Baubet, Revah-Lévy, and Flament [76] summarized the factors influencing the development of PTSD. They indicate that subjective assessment of life threat and beliefs about the disease are more important predictors than objective medical data. This is in line with the finding of Wachen, Patidar, Mulligan, Naik, and Moye [89] that the key role is played by individual characteristics and psychosocial factors. The time that has passed since the diagnosis of cancer is not an effective predictor of permanent symptoms. In the case of children, also the role of subjective factors and subjective judgment is greater than more objective medical data or stressors associated with treatment [90].

### Conclusions

The aim of this article was not only to show the occurrence of PTSD during cancer disease, but also the possibility of occurrence of symptoms long after the end of the therapy,

not only in patients, but also in their relatives. Undoubtedly, the experience of a life-threatening disease can contribute to the occurrence of severe stress at every stage of life. Reduction of PTSD symptoms may lead to better quality of life [91] and there is the great influence of social support [26]. Additionally, a proper help should be provided (for example: Kangas, Milross, and Bryant [92] propose an early cognitive-behavioral program for cancer-related PTSD). The described research suggests the following issues that deserve further consideration:

1. Cancer related PTSD is closely connected to medical condition. Different types of therapy are available and patients react in different ways to them, which in turn may influence their cognitive and psychosocial functioning. That is why all generalized conclusions should be formed very carefully.
2. There is still little information about cancer-related PTSD in seniors. As mentioned earlier, this is an important group because it constitutes a constantly increasing part of society [93, 94] and the potential incidence of cancer in the old age [95]. It is noteworthy that aging as a process brings also some quantitative and qualitative changes [96–98]. Thus, different outcomes should be expected from different age groups in the field of PTSD.
3. The other important aspect of the older age group are cases when they are parents of adult children with cancer. There is much research on symptoms in parents of young children (described earlier in this paper), however, little is known about the condition of older parents. Many factors may influence the relationship between older parents and adult children [99] and, undoubtedly, the experience of cancer is a difficult challenge for them.
4. There is a big difference in the number of studies carried out with women and men. Much of the research on the prevalence of PTSD in cancer patients involves women alone. The results of studies with men with cancer concern psychosocial factors [100, 101], but not PTSD directly. In general, the following differences have been observed: women are less likely to encounter PTSD-triggering events, but they meet more closely the PTSD criteria [102].
5. From a practical point of view, more attention should be paid to the family of cancer patients. One of the core elements of the PTSD diagnosis is being a witness to someone experiencing a traumatic event [9]. Caregivers and people closely related to the victims should be considered not only as a potential source of the social support [103–105], but also as people exposed to high stress.
6. Patients are very rarely screened for PTSD [106]. Cancer treatment brings not only physical problems, but also psychological issues. Proper psychological help is necessary in this case.

## Limitations

The article shows that PTSD symptoms may occur in patients of all ages and vary in degree, however, it is worth noting that some of the cited studies refer to earlier definitions of PTSD, which differ from the one employed in this paper.

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