

## The Second International Conference on Psychosocial Oncology “Psychosocial Support and Communication in Cancer Care: Challenges and Experiences”

# Posttraumatic stress in breast cancer patients

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**Giedrė Bulotienė<sup>1</sup>,**

**Jurgita Matuizienė<sup>2</sup>**

<sup>1</sup>*Institute of Oncology,  
Vilnius University,*

<sup>2</sup>*Vilnius College / University  
of Applied Sciences*

**Background.** Breast cancer diagnosis is a potential life-threatening event associated with significant distress. The present study aimed to identify the prevalence of posttraumatic stress and its association with clinical and social factors in early breast cancer patients and one year after surgery.

**Materials and methods.** Four hundred twenty one newly diagnosed breast cancer patients completed three questionnaires: Impact of Event Scale – revised (IES-R), Beck Depression Inventory II (BDI-II), Vrana & Lauterbach Traumatic Events Scale-Civilian (TEQ). Women were questioned before surgery and one year later. Patients were 18–80 years old resident Lithuanian women with histologically confirmed breast cancer and no history of other cancers. Additional requirements were as follows: ability to read Lithuanian and being capable of completing a questionnaire.

**Results.** 51.5% of newly diagnosed breast cancer patients had from moderate to severe symptoms of PTSD (score average of IES-R  $\geq 1.5$ ). After one year it decreased and there were 33.5% of patients who had symptoms of PTSD. The scores of all subscales were decreased a bit as well. Immediately after statement of diagnosis, PTSD correlated with sadness, often cry and earlier traumatic experience. One year later, PTSD correlated with poor self perception, sadness and traumatic experience during this year. Pessimistic mood, lack of energy, difficulties to concentrate were significant to breast cancer patients.

**Conclusions.** A significant number of breast cancer patients suffers from PTSD symptoms. After one year, the amount of patients suffering from PTSD decreased almost twice. Depression and traumatic experience are the predictors of PTSD. The findings show that early evaluation of psychoemotional needs of breast cancer patients is necessary and early interventions are meaningful.

**Key words:** breast cancer, posttraumatic stress, depression, surgical treatment

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## INTRODUCTION

Studies of posttraumatic stress disorder (PTSD) in cancer patients find that diagnostic rates are low (3% to 14%), but symptoms of PTSD, that is a subsyndrome of PTSD, may occur in upward of 50% of patients (1). How disabling the subsyndrome of PTSD may be for any individual is not fully known; however, a few data suggest that it is so. Stein, Walker, Hazen, and Forde using community survey data found that individuals with the subsyndrome of PTSD reported employment problems, social disruptions, and difficulties at home (2). Breast cancer diagnosis is a potential life-threatening event associated with significant distress. Even after successful treatment, cancer diagnosis and treatment may continue to be a source of distress (Table 1) (1).

This is also the case for studies focusing on the prevalence of post-traumatic stress symptoms (PTSS) in breast cancer (9), with reported prevalence of suspected or diagnosed PTSD ranging from 32% in a sample of 31 women with stage I–III breast cancer on average at 16 months after treatment (10) to 0.0% in a sample of 74 breast cancer survivors at 3 to 6 years after diagnosis (11).

In 1994, the trauma criteria of post-traumatic stress disorder (PTSD) in DSM-IV were expanded to include life-threatening illness, such as cancer (American Psychiatric Association, 2000). Post-traumatic stress can occur after an individual is exposed to an event perceived as life threatening, and associated with intense fear, helplessness, or horror. According to DSM-IV, the disorder is defined by a set of symptoms (re-experiencing, avoidance, and hyper-arousal) lasting at least 1 month. There is considerable variation in the

proportion of individuals exposed to traumatic events who develop PTSS of sufficient severity to warrant a diagnosis of PTSD (12). It was found that experienced PTSD impairs quality of life (13), increases disability and experienced pain (14), increases suicide risk. Younger age, lower income, less education, physical and psychiatric co-morbidity, and physical functioning have been proposed as general risk factors of severe post-traumatic stress (15–19).

**Objectives.** This research is a part of a larger study investigating predictors of the negative psychosocial outcomes that could be used in clinical practice to risk-assess and monitor breast cancer patients for adjustment difficulties.

The present study aimed to identify the prevalence of posttraumatic stress and its association with clinical and social factors in early breast cancer patients and one year after surgery.

## METHODS AND MATERIALS

Four hundred twenty one newly diagnosed breast cancer patients (Table 2) completed three questionnaires (*Lithuanian version*): Impact of Event Scale – revised (IES-R) (20), Beck Depression Inventory II (BDI-II) (21), Vrana & Lauterbach Traumatic Events Scale-Civilian (TEQ) (22). Women were questioned before surgery at the Institute of Oncology, Vilnius University. Eligible patients were 18–80 years old resident Lithuanian women with histologically confirmed breast cancer T1-3, N0-3, and M0 according to the tumour–node–metastasis staging system, and no history of other cancers. Additional requirements were as follows: ability to read Lithuanian and being capable of completing a questionnaire. After one year, all of patients re-

**Table 1.** Prevalence of PTSD in different cancer patients

Authors	Country	Participants	Prevalence of PTSD
Matulonis UA et al. (3)	USA	58 patients with early stages of ovarian cancer	26%
Costa-Requena G, Gil F (4)	Italy	494 outpatients ill with cancer	10%
Smith SK et al. (5)	USA	886 patients ill with non Hodgkin's lymphoma	8%
Anastasiou I et al. (6)	Germany	387 patients treated with radiotherapy	22%
Kadan-Lottick NS et al. (7)	USA	251 patients with spread cancer	2.4%
Maddineni SB, Lau M (8)	UK	128 patients with penis cancer	40%

**Table 2.** Demographic and clinical characteristics of patients (n = 421)

Characteristics	Patients	Number of patients	%
Age	Under 39 years	35	8.3
	40–49 years	75	17.8
	50–59 years	128	30.4
	60–69 years	121	28.7
	70–80 years	62	14.7
Education	Secondary education	79	20.0
	Vocational	51	12.9
	Vocational higher	140	35.4
	Higher	125	31.6
Occupation	Employed	119	28.9
	Unemployed or retired	292	71.1
Marital status	Married	248	62.5
	Unmarried	24	6.0
	Divorced	39	9.8
	Widow	86	21.7
Living place	City area	317	76.6
	Rural area	97	23.4
Tumor stage	Stage I	186	44.4
	Stage II	154	36.8
	Stage III	79	18.9

**Table 3.** Cancer-related PTSS among newly diagnosed breast cancer patients and 12 months post surgery

IES (cancer related)	After statement of diagnosis N = 421	One year after treatment N = 188
IES-R avoidance subscale	Mean (s. d.): 12.1 (6.9)	Mean (s. d.): 9.2 (6.1)
	Median: 12.0	Median: 9.0
	Range: 0–30	Range: 0–29
	10–90 percentile: 3–21	10–90 percentile: 2–17
IES-R re-experiencing subscale	Mean (s. d.): 12.5 (7.7)	Mean (s. d.): 9.0 (7.7)
	Median: 11	Median: 8.0
	Range: 0–31	Range: 0–28
	10–90 percentile: 3–24	10–90 percentile: 2–19
IES-R hyper-arousal subscale	Mean (s. d.): 8.0 (6.1)	Mean (s. d.): 6.0 (6.1)
	Median: 7	Median: 5.0
	Range: 0–23	Range: 0–24
	10–90 percentile: 1–18	10–90 percentile: 0–14
IES total	Mean (s. d.): 32.7 (18.6)	Mean (s. d.): 24.2 (17.2)
	Median: 32	Median: 21.0
	Range: 0–79	Range: 0–81
	10–90 percentile: 8–59	10–90 percentile: 5–45

ceived questionnaires once more and filled them at home. We received 188 answers, the response rate is 45%.

The Statistical Packages of Social Sciences (SPSS) software for Windows (version 19.0) was used. Descriptive statistics were used to charac-

terize the sample with regard to demographic and clinical characteristics. The reliability was tested using the Cronbach's alpha reliability coefficient. For comparison among the groups, the Persons Correlation coefficient was used. A p value of 0.05 was considered to be significant.

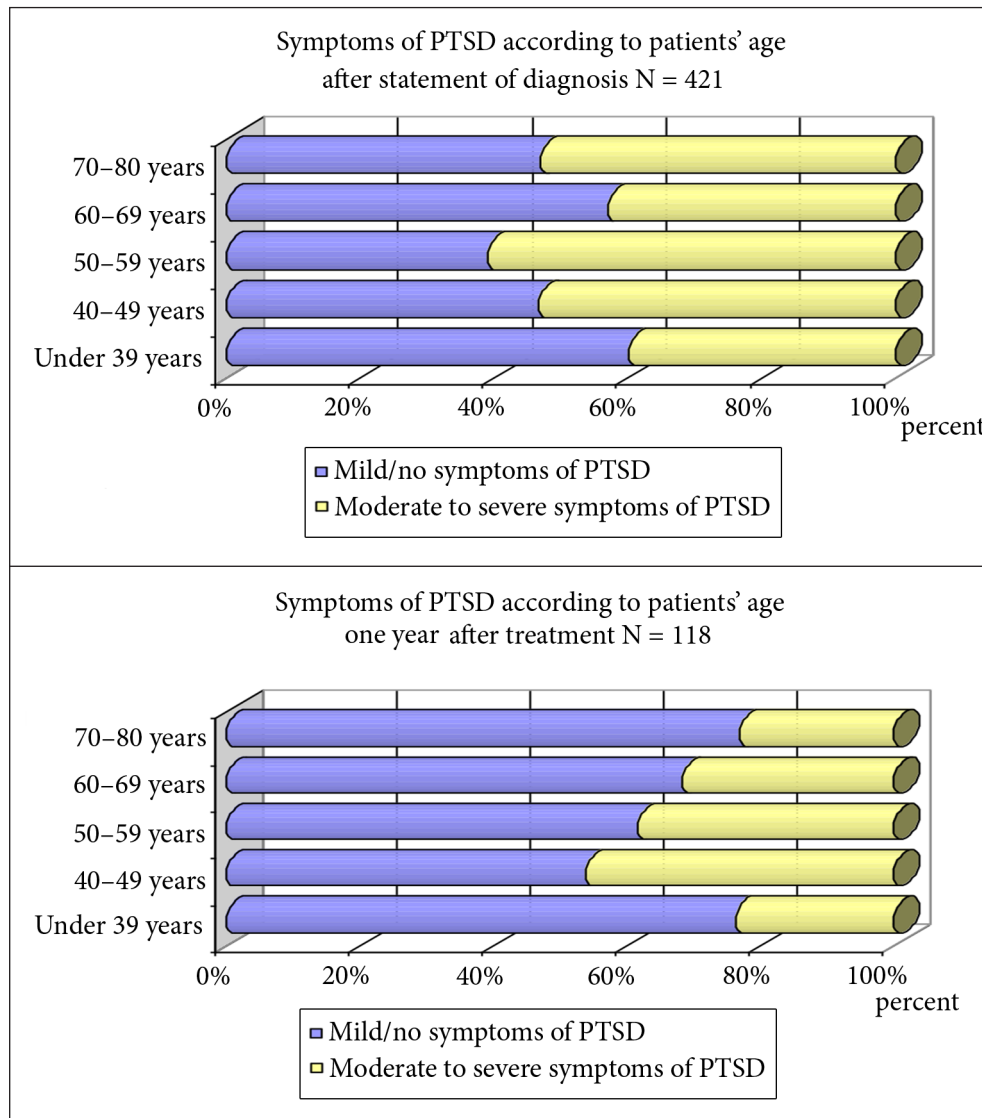
**RESULTS**

51.5% of newly diagnosed breast cancer patients had from moderate to severe symptoms of PTSD (score average of IES-R  $\geq 1.5$ ). After one year it decreased and there were 33.5% of patients who had symptoms of PTSD (score average of IES-R  $\geq 1.5$ ). The scores of all subscales were decreased a bit as well (Table 3, Figure).

Immediately after the statement of diagnosis, PTSD correlated with BDI scores (0.64;  $p < 0.000$ ), especially sadness and often cry (0.67;  $p < 0.000$ ), earlier traumatic experience (0.3;  $p < 0.000$ ), time when patients were informed that they were ill with breast cancer ( $-0.33$ ;  $p < 0.01$ ), satisfaction with diagnosis statement (0.22;  $p < 0.000$ ), marital status (0.2;  $p < 0.003$ ).

One year later, PTSD correlated with BDI scores (0.56;  $p < 0.000$ ), especially poor self perception (0.6;  $p < 0.000$ ), sadness and often cry (0.4;  $p < 0.000$ ), traumatic experience during this year (0.5;  $p < 0.000$ ), satisfaction with diagnosis statement (0.2;  $p < 0.000$ ).

38 patients after diagnosis statement had suicidal ideations, but after one year there were left 24 such patients. Immediately after the statement of diagnosis, suicidal ideation correlated with IES scores (0.3;  $p < 0.000$ ), especially hyper arousal subscales (0.4;  $p < 0.000$ ) and with traumatic experience (0.2;  $p < 0.000$ ), especially related with violence (0.28;  $p < 0.000$ ). One year later, suicidal ideation correlated with bad concentration (0.3;  $p < 0.001$ ) and poor sleep, and often cry (0.2;  $p < 0.001$ ).



**Figure.** Symptoms of PTSD according to patients' age and period

Other difficulties for patients with PTSD were also identified. Pessimistic mood (54%), lack of energy (61%), difficulties to concentrate (51%) were high. These disorders, having occurred for half of the patients, may have heightened risk not only for PTSD, but also for a depressive episode when cancer was diagnosed

## DISCUSSION

When reviewing 16 studies of breast cancer patients published between 2004 and 2010, in which mean IES scores were reported, the mean intrusion scores reported varied from 1.24 to 22.0 and avoidance scores varied from 1.36 to 24.6. The highest scores were found in studies assessing cancer-related post-traumatic stress immediately after diagnosis or during treatment, whereas the lowest scores were found in samples of breast cancer survivors assessed up to 15 years post diagnosis (23). Comparing our results with the scores found in the studies with assessment times most similar to ours (between 0 and 12 months), the re-experiencing and avoidance scores in our sample (12.5 and 12.1 in the beginning, and 9.0 and 9.2 after one year) were similar or lower than the range of the scores found in these studies (re-experiencing 9.1–14.0 and avoidance 12.2–15.0).

Results thus confirm that a significant proportion of women experience severe breast cancer-related PTSD symptoms, and that a reduction in the prevalence of severe PTSD symptoms can be expected during the first year after surgery. However, approximately half of the women with severe PTSD at the beginning also had severe PTSD symptoms at 12 months, indicating that these women are at increased risk of persistent severe PTSD.

In the general population, the prevalence of sufficiently severe PTSS to warrant a diagnosis of PTSD is usually lower among older individuals compared with younger (24). Likewise, younger cancer patients are generally more distressed after receiving their cancer diagnosis than older patients (25). In contrast, the youngest women in our study had the lowest prevalence of severe PTSD symptoms at the beginning and after one year, whereas no differences were found for PTSD mean scores. At 12 months, no significant difference in severe PTSD was found between the youngest and the oldest patients, but younger pa-

tients now demonstrated significantly elevated PTSD mean scores.

In some publications, it has been suggested that the nature of the event is more likely to be central as a predictor of post-traumatic stress in high-intensity stressors (e. g., direct experience of combat, torture, violent sexual assaults), whereas pre-existing individual risk factors may be very important predictors of post-traumatic stress following relatively less extreme events (e. g., serious illness or bereavement (23)). By the above definition, primary breast cancer can be considered a less extreme traumatic stressor. Although one factor related to the intensity of the traumatic event, disease severity, was a risk factor for severe PTSD, our findings generally underline the importance of focusing on pre-existing individual risk factors, such as social status, previous traumatic event, and communications with personnel when screening for PTSD in breast cancer.

## CONCLUSIONS

A significant number of breast cancer patients suffers from PTSD symptoms. After one year, the amount of patients suffering from PTSD decreased almost twice. Depression and traumatic experience are the predictors of PTSD. The finding show that early evaluation of psychoemotional needs of breast cancer patients is necessary and early interventions for the prevention of PTSD are meaningful, especially if the patient states about traumatic experience, bad mood and poor self perception. Newly diagnosed cancer patients should be provided with regular care and assistance. Early prevention of PTSD minimizing PTSD symptoms could improve the quality of women's lives.

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## References

1. Gurevich M, Devins GM, Rodin GM. Stress response syndromes and cancer: conceptual and assessment issues. *Psychosomatics*. 2002; 43: 259–81.
2. Stein MB, Walker JR, Hazen AL, Forde DR. Full and partial posttraumatic stress disorder: A community survey. *Am J Psychiatry*. 2007; 154: 1114–9.

3. Matulonis UA, Kornblith A, Lee H, Bryan J, Gibson C, Wells C, et al. Long-term adjustment of early-stage ovarian cancer survivors. *Gynecol Cancer*. 2008; 18(6): 1183–93.
4. Costa-Requena G, Gil F. Posttraumatic stress disorder symptoms in cancer: psychometric analysis of the Spanish Posttraumatic Stress Disorder Checklist-Civilian version. *Psychooncology*. 2010; 19(5): 500–7.
5. Smith SK, Zimmerman S, Williams CS, Preisser JS, Clipp EC. Post-traumatic stress outcomes in non-Hodgkin's lymphoma survivors. *Clin Oncol*. 2008; 26(6): 934–41.
6. Anastasiou I, Yiannopoulou KG, Mihalakis A, Haziandonakis N, Constantinides C, Papageorgiou C, et al. Symptoms of acute posttraumatic stress disorder in prostate cancer patients following radical prostatectomy. *Am J Mens Health*. 2011; 5(1): 84–9.
7. Kadan-Lottick NS, Vanderwerker LC, Block SD, Zhang B, Prigerson HG. Psychiatric disorders and mental health service use in patients with advanced cancer: a report from the coping with cancer study. *Cancer*. 2005; 104(12): 2872–81.
8. Maddineni SB, Lau MM, Sangar VK. Identifying the needs of penile cancer sufferers: A systematic review of the quality of life, psychosexual and psychosocial literature in penile cancer. *BMC Urology*. 2009; 9: 8–14.
9. Mehnert A, Berg P, Henrich G, Herschbach P. Fear of cancer progression and cancer-related intrusive cognitions in breast cancer survivors. *Psychooncology*. 2009; 18: 1273–80.
10. Naidich JB, Motta RW. PTSD-related symptoms in women with breast cancer. *Psychother Indepen Pract*. 2009; 1: 34–54.
11. Matsuoka Y, Nakano T, Inagaki M, Sugawara Y, Akechi T, Imoto S, et al. Cancer-related intrusive thoughts as an indicator of poor psychological adjustment at 3 or more years after breast surgery: a preliminary study. *Breast Cancer Res Treat*. 2002; 76: 117–24.
12. Gurevich M, Devins GM, Rodin GM. Stress response syndromes and cancer: conceptual and assessment issues. *Psychosomatics*. 2002; 43: 259–81.
13. Gradus JL, Qin P, Lincoln AK, Miller M, Lawler E, Sørensen HT, et al. Posttraumatic stress disorder and completed suicide. *Am J Epidemiol*. 2010; 171(6): 721–8.
14. Schroevers MJ, Helgeson VS, Sanderman R, Ranchor AV. Type of social support matters for prediction of posttraumatic growth among cancer survivors. *Psychooncology*. 2010; 19(1): 46–53.
15. Luecken LJ, Dausch B, Gulla V, Hong R, Compas BE. Alterations in morning cortisol associated with PTSD in women with breast cancer. *Psychosom Res*. 2004; 56: 13–5.
16. Palmer SC, Kagee A, Coyne JC, DeMichele A. Experience of trauma and posttraumatic stress disorder among breast cancer patients. *Psychosom Med*. 2004; 66: 258–64.
17. Palyo SA, Beck JG. Post-traumatic stress disorder symptoms, pain, and perceived life control: associations with psychosocial and physical functioning. *Pain*. 2005; 117: 121–7.
18. Hegel MT, Moore CP, Collins ED, Kearing S, Gillock KL, Riggs RL, et al. Distress, psychiatric syndromes, and impairment of function in women with newly diagnosed breast cancer. *Cancer*. 2006; 107: 2924–31.
19. Schlich-Bakker KJ, ten Kroode HF, Warlam Rodenhuis CC, Ausems MG, van den Bout J. Distress in couples approached for genetic counselling and BRCA1/2 testing during adjuvant radio therapy. *Psychooncology*. 2009; 18: 965–73.
20. Kazlauskas E, Gailienė D, Domanskaitė-Gota V, Trofimova J. Įvykio poveikio skalės – revizuotos (IES-R) lietuviškos versijos psichometrinės savybės. *Psichologija. Mokslo darbai*. 2006; 33: 22–30.
21. Beck AT, Steer RA, Brown GK. Beck depression inventory. 2nd ed. (BDI-II). The Psychological Corporation; 1996.
22. Lauterbach D, Vrana S. The relationship among personality variables, exposure to traumatic events, and severity of posttraumatic stress symptoms. *J Trauma Stress*. 2001; 14: 29–45.
23. Van Hoof M, Mcfarlane AC, Baur J, Abraham M, Barnes J. The stressor criterion-A1 and PTSD: a matter of opinion? *Anxiety Disord*. 2009; 23: 77–86.
24. Kessler RC, Chiu WT, Demler O, Falloon IRH, Gagnon E, Guyer M, et al. Prevalence, severity, and comorbidity of 12-month DSM-IV disorders in the national comorbidity survey replication. *Arch Gen Psychiatry*. 2005; 62: 617–27.
25. Kangas M, Henry JL, Bryant RA. Posttraumatic stress disorder following cancer. A conceptual and empirical review. *Clin Psychol Rev*. 2006; 22: 499–524.

Giedrė Bulotienė, Jurgita Matuizienė

## KRŪTIES VĖŽIU SERGANČIŲ PACIENČIŲ PATIRIAMAS POTRAUMINIS STRESAS

### *Santrauka*

**Įvadas.** Krūties vėžys yra ilgai trunkanti liga, galinti sukelti didelį distresą. Šios studijos tikslas – identifikuoti potrauminio streso paplitimą tarp krūties vėžiu sergančių pacienčių ir jo asociacijas su klinikiniais ir socialiniais veiksniais po diagnozės nustatymo ir praėjus vieneriems metams.

**Medžiaga ir metodai.** Keturi šimtai dvidešimt viena pacientė užpildė tris klausimynus: Įvykio poveikio skalę (IES-R), Beko depresijos klausimyną (BDI-II), Vrana & Lauterbach Traumuojančių įvykių klausimyno civilinę versiją (TEQ). Moterys buvo apklaustos prieš operaciją ir po vienerių metų. Pacienčių amžius – nuo 18 iki 80 m., joms buvo histologiškai patvirtintas krūties vėžys, kitomis onkologinėmis ligomis anksčiau nesirgo. Visos pacientės galėjo savarankiškai užpildyti klausimyną.

**Rezultatai.** 51,5 % pacienčių po krūties vėžio diagnozės turėjo vidutiniškai arba stipriai išreikštą potrauminio streso simptomų (įvykio poveikio skalės vidurkis  $\geq 1,5$ ). Po metų šis skaičius sumažėjo ir tokių pacienčių buvo 33,5 %. Per metus sumažėjo visų subskalių įverčiai. Tuoj po nustatytos diagnozės pasireiškė šie potrauminio streso simptomai: liūdesys, dažnas verkimas, taip pat anksesnė psichologiškai traumuojanči patirtis. Po vienerių metų jie asocijavosi su prastu savęs vertinimu, liūdesiu ir psichologiškai traumuojančia pastarųjų metų patirtimi. Šioms pacientėms taip pat būdingas pesimizmas, energijos trūkumas, joms sunku sutelkti dėmesį.

**Išvados.** Daug krūties vėžiu sergančių pacienčių kenčia dėl patiriamų potrauminio streso simptomų. Po vienerių metų šių pacienčių skaičius gerokai sumažėjo. Depresija ir psichologiškai traumuojanči patirtis yra predisponuojantys šių simptomų veiksniai. Tyrimo rezultatai rodo, kad yra naudingas ir svarbus ankstyvas krūties vėžiu sergančių pacienčių psichoemocinių poreikių įvertinimas ir pagalbos suteikimas laiku.

**Raktažodžiai:** krūties vėžys, potrauminis stresas, depresija, chirurginis gydymas