

**Clinical Correspondence**

# Anxiety in common situations of everyday life in breast cancer survivors

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Dear Editor,

## Introduction

Anxiety appears frequently in breast cancer survivors [1]. In the studies that evaluate anxiety in this patients group, researchers usually apply scales measuring state-trait anxiety [2], or scales that exclude somatic symptoms as these may generate confusion when interpreting the results [3]. However, despite their utility, these measures of anxiety do not identify specific traits of anxiety. According to some authors, anxiety response includes three different systems: cognitive, physiological, and motor. Furthermore, it is also possible to identify situational areas that may be understood as specific traits into a multidimensional concept of anxiety: anxiety about the evaluation, interpersonal anxiety, phobic anxiety, and anxiety in common situations of everyday life [4]. An evaluation of these systems and traits could help to better understand the anxiety response in breast cancer survivors, as anxiety may remain elevated even years after treatment [5]. Therefore, our objective is to find differences between breast cancer survivors and a control group in the three systems of anxiety and the specific situational traits. Finally, we will evaluate the predictive ability of the three systems of anxiety over specific situational traits.

## Method

### Participants

Participants were 25 women who were diagnosed with breast cancer, and whose treatment was finished. All patients were in stages I–III. Patients with metastases, relapse, or other types of cancer were excluded. Average age was 58.64 years ( $SD=8.01$ ). Most of them had undergone mastectomy (84%), chemotherapy (68%), and radiotherapy (44%). Time

from the end of the treatment was between 1 and 20 years, with an average of 7.44 ( $SD=5.99$ ). Furthermore, we selected 25 women with no history of any cancer to form the control group, their average age was 54.40 years ( $SD=12.38$ ).

### Instruments

All participants completed the Inventory of Anxiety Situations and Responses. This instrument assesses anxiety in three systems independently: cognitive (thinking and feelings of worry, insecurity), physiological (palpitations, tachycardia, or muscle tension), and motor (escape and avoidance responses). This inventory has a situation-response format and tested the frequency of the anxiety responses in each system. Later, we identify four specific traits of anxiety: anxiety about the evaluation, interpersonal anxiety, phobic anxiety, and anxiety in common situations of everyday life. The measures of these traits are obtained by adding the scores of the answers given by the participants to the situations for each trait in the three subscales (cognitive, physiological, and motor). Direct scores are converted to percentiles and placed on two scales, normal or clinical, depending on severity. The psychometric properties are adequate [4]. Participants also completed a sociodemographic questionnaire that retrieved information about age, civil state, employment status, education, and treatment.

### Procedure

We negotiated with an association against cancer in Cordoba to set up the study. After receiving approval from the Ethical Committee's, we provided the association staff with the participant criteria. The associations identified potential participants among their membership.

**Table 1.** Comparison of sociodemographic variables.

Group	Age M (SD)	Marital status (%)	Education (%)	Employment status (%)
Survivors	58.64 (8.01)	Married (72) Widowed (8) Single (16) Separated (4)	Primary (76) Secondary (16) University (8)	Unemployed (36) Employed (4) Retired (60)
Control	54.40 (12.38)	Married (60) Widowed (16) Single (12) Separated (12)	Primary (52) Secondary (28) University (20)	Unemployed (48) Employed (28) Retired (24)
	$U = 255, p = 0.26$	$\chi^2 (4, N = 50) = 4.47, p = 0.34$	$U = 390.5, p = 0.07$	$\chi^2 (2, N = 50) = 8.78, p < 0.05.$

M, mean; SD, standard deviation.

**Table 2.** Intergroup comparisons in anxiety

	C M (SD)	P M (SD)	M M (SD)	R1 M (SD)	R2 M (SD)	R3 M (SD)	R4 M (SD)
Survivors	73.84 (34.52)	45.84 (36.63)	36.96 (29.66)	65.08 (38.04)	13.60 (12.53)	47.24 (31.02)	18.84 (13.77)
Control	69.52 (28.91)	39.70 (24.01)	32.44 (26.94)	64.52 (30.98)	12.00 (12.48)	48.68 (40.77)	10.68 (8.25)
	$U = 298, p = 0.77,$ $r = 0.04$	$U = 290, p = 0.66,$ $r = 0.07$	$U = 289, p = 0.64,$ $r = 0.07$	$U = 329, p = 0.74,$ $r = 0.01$	$U = 286.5, p = 0.61,$ $r = 0.08$	$U = 291.5, p = 0.68,$ $r = 0.06$	$U = 201, p < 0.05,$ $r = 0.35 *$

M, mean; SD, standard deviation; C, cognitive anxiety; P, physiological anxiety; M, motor anxiety. R1, anxiety about the evaluation; R2, interpersonal anxiety; R3, phobic anxiety; R4, anxiety in common situations of everyday life.

Differences between the groups are significant in R4 with  $p < 0.05$ .

These potential participants were given information about the study including a contact number to enable them to make an appointment with the researchers if they are interested in participating. Twenty-seven patients were invited to participate, but two declined, because they did not want to remember the cancer. Twenty-five female volunteers of the association were invited to form the control group, all agreed to participate. Before data collection, all participants were provided with a written informed consent form, which provided information about the objectives of the study and outlined the confidentiality of the results.

### Statistical analyses

We used the non-parametric Mann–Whitney  $U$  test to assess potential group differences in age, education, systems, and specific traits of anxiety. Marital status and employment status were compared using the  $\chi^2$  test. In the survivor group, *eta* test were used to explore associations between employment status and R4, also linear regression analyses were performed to investigate the predictive utility of the three anxiety systems over R4. The results were accepted as significant at  $p \leq 0.05$ .

### Results

In the sociodemographic variables, the two groups differed in employment status; most of the survivors were retired, and the majority of the control group was unemployed (Table 1).

We compared the two groups in the systems and specific traits of anxiety. The anxiety scores were in the normal scale, and the specific trait of anxiety in common situations of everyday life showed higher levels in survivors' group, with statistical differences (Table 2).

In the survivors' group, we found a lower association between employment status and R4 ( $\eta = 0.21$ ). Also, we evaluated the predictive ability of the three systems of anxiety (cognitive, physiological, and motor) over R4. The results showed that the three predictors explains 49% of the variance ( $R^2 = 0.49$ ,  $F(3.21) = 8.82$ ,  $p < 0.01$ ), physiological anxiety predicts R4 ( $\beta = 0.18$ ,  $t(21) = 2.24$ ,  $p < 0.05$ ), but cognitive anxiety ( $\beta = 0.07$ ,  $t(21) = 1.03$ ,  $p = 0.31$ ), and motor anxiety ( $\beta = 0.08$ ,  $t(21) = 0.86$ ,  $p = 0.39$ ) do not predict it adequately.

### Discussion

Anxiety in breast cancer survivors is common [1,5]. However, there is little information about the systems and specific traits that may be affected by the disease. By this reason, we applied an instrument that evaluated anxiety in three ways (cognitive, physiological, and motor), and allowed us to identify specific traits of anxiety [4]. Our results showed that survivors obtained higher scores in the three anxiety systems, but with no statistical differences between the groups. Of the four specific traits of anxiety, we found higher scores in survivors' and differences between the groups in the trait of anxiety in common situations of everyday life. These results suggest a good psychological adjustment in survivors [6], but in

common situations of everyday life including ‘at bedtime’ and ‘for nothing in particular’, the elevated scores we observed are probably related to the presence of fatigue and generalized anxiety in this group of patients [7,8]. Finally, physiological anxiety predicts scores in anxiety in situations of everyday life, data that can be useful for designing interventions to help mitigate the effects of the disease in the daily life in survivors. The study has some limitations to take into account. First, these results need to be replicated in a large sample of breast cancer survivors. Furthermore, although shows a good convergent validity with the STAI [4], whose application in this group of patients is widely used [9,10], the instrument we applied has to be validated in breast cancer patients. Further research should consider these limitations to achieve a better understanding of the anxiety response in breast cancer survivors.

### Key points

- Anxiety usually appears in breast cancer survivors.
- But it is not clear what systems and traits are the most affected.
- We evaluated anxiety in three ways: cognitive, physiological, and motor and identified specific traits of anxiety: anxiety about the evaluation, interpersonal anxiety, phobic anxiety, and anxiety in common situations of everyday life.
- The survivors group showed higher scores in anxiety in common situations of everyday life compared with the control group.
- Physiological anxiety predicts the specific trait of anxiety in common situations of everyday life.

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