symposium article

Annals of Oncology 18 (Supplement 6): vi77–vi80, 2007
doi:10.1093/annonc/mdm231

Emotional expression and coping style in female breast cancer

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Background: The study of the relationship of emotional status and tumor etiology has been investigated in order to elaborate a multifactorial model able to provide an answer integrating the different disciplines on cancer. The aim of this work is to investigate the knowledge on the alexithymia construct, exploring the presence of such trait in women affected by mammary carcinoma and analyzing the used coping strategies. The study has also examined personal thoughts related to event control (locus of control).

Method: The Toronto Alexithymia Scale, Coping Orientation to Problems Experienced, and Locus of Control questionnaires were administered to a group of 86 women aged 31–55 years (mean = 43.7; SD 6.57)—experimental group (N = 44): women with breast cancer diagnosed in the last 6 months; control group (N = 42): women without oncologic pathology, referred at the aforementioned institutions to undergo a breast check-up.

Results: According to our hypothesis and literature data, a significant presence of alexithymic subjects (36.4% versus 2.4%; $\chi^2 = 20.9$; $P < 0.0001$) and a tendency to adopt coping strategies not focused on the problem were reported among women with mammary carcinoma. This causes incapability to act in order to actively contrast pathology-linked stress or to lower the effects.

Conclusion: Our results indicate that the tendency to repress one's emotions is associated to some general schemes of reaction to stress which, when used in a dysfunctional manner (such as the attempt to ignore how threatening an event is), are maladaptive in the end.

introduction

Recently, the study of neoplasia has involved different areas of psychology. Research has increasingly focused on the multifactorial causes that should be taken into consideration at the onset of the pathology [1, 2].

Traditionally, tumor pathogenesis has been exclusively researched in terms of biological processes. However, psychological investigations have reinforced the hypothesis that specific personality traits and psychosocial factors can be considered as variables playing a role in the growth, progression, and course of the neoplastic pathology [3, 4]. The interest in the psychological variables, which also has grown in the medical setting, has proven that a multi-causal model should be taken into account. With this model, the relationship between risk factors and protective factors at the onset of cancer becomes of fundamental importance. Certain psychological factors are believed to help protecting the individual, including the ability to recognize and express emotions, good coping strategies, and adequate social support [5, 6]. Risk factors include the inhibition of emotions, as well as stressors linked to events such as loss and separation. These psychic events may be among the many causes of tumor onset, and through their neural correlation with the central nervous system, they can trigger and modulate biological processes [7].

Since 1950, the deficit of emotional expression in patients affected with cancer has inspired many studies on emotions and tumor [8]. Research demonstrates that women with breast cancer show a marked tendency to repress their emotions, even when this implies sacrificing their needs, and make extreme use of the defense mechanism of rationalization when dealing with deep emotions within interpersonal relationships [4].

The difficulty in recognizing and expressing one's own emotions is defined as alexithymia. Alexithymia is a complex multidimensional construct which involves both emotional-affective and cognitive aspects and is considered by many researchers to be a stable personality trait [9–11]. This construct not only implies the incapacity to identify one's emotions and to distinguish them from the body sensations they are related to but also implies the difficulty in describing emotions to others, poor imaginative processes, and an external cognitive style.

Experimental studies have correlated stressful events with deficit of emotional response and pathogenesis of cancer [12]. Researchers underline that chronic inhibition of emotional response to stress can cause an imbalance in the functioning

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of the endocrine and emotional systems, thus leading to the development of psychosomatic diseases [13]. The different strategies used to confront stressful events define the different coping styles [6–14]. Coping is a term that identifies the group of skills and abilities used by an individual when confronting problematic and potentially stressful situations. Coping defines the successful or unsuccessful process of adaptation to a stressful event. Certain coping styles are considered adaptive, and others, such as negation or mental detachment, are considered maladaptive. The emotional–physiological reaction originating from the stressful stimulus depends on both the subjective and the objective characteristics, hence on the quantity and quality of the stressor stimulus. Pancheri et al. [12] have identified some factors originating cancer. One of them is the presence of stressors linked to events—such as loss and separation—that may generate maladaptive coping strategies in some individuals.

Furthermore, research seems to indicate the existence of a relationship between coping strategies and 'locus of control' (a person's general sense of control over the events of life) [15–18]. Individuals who feel personally responsible for what happens to them, defined as 'internal locus of control', have a reaction style focusing on problem solving and show a better reaction to stressful events. On the contrary, individuals defined as having 'external locus of control' perceive that the results obtained in their lives are determined by forces beyond their control.

On the basis of these facts, this investigation will explore the possible presence of alexithymic traits in women with breast cancer, analyze the coping mechanisms they use, and examine their personal beliefs about control over events in their lives.

Women with breast cancer, compared with those without oncologic pathologies, are more likely to show a significant difference in the ability to identify their emotions and in the coping strategies used to confront critical situations. According to literature concerning the control over events, we expect that an external locus of control will have negative repercussions on the individual's psychological organization and, consequently, on their physical health.

method

participants

The research involved 86 women aged 31–55 years (mean = 43.7; SD 6.57), referred to the Oncology Department, Breast Research Division of 'Paolo Giaccone' General Hospital—University of Palermo; and to 'Maurizio Ascoli' Oncology Center of Civico Hospital in Palermo. The subjects were divided in two groups:

- experimental group (N = 44): women with breast cancer diagnosed in the last 6 months and
- control group (N = 42): women without oncologic pathology, referred at the aforementioned institutions to undergo a breast check-up.

measures

After describing the goals of the research and obtaining the subjects' consent to participate, each subject filled a self-report questionnaire. The test was administered in the morning, in the hospital wards. The women with breast cancer had come to the hospital for scheduled medical visits, while the women from the control group had come for a voluntary screening. The subjects who later showed no tumor were included in the second group.

The following instruments were used.

Semi-structured interview. This aimed at creating an empathic relationship and obtaining personal and social data about the subject. The presence or absence of stressful events (experience of loss and significant separations) in the last year of the individuals' lives was verified.

Coping Orientation to Problems Experienced—COPE (Carver et al. [19], Italian adapted: Sica et al. [20]). The questionnaire measures various coping strategies and is made up of 60 items. The 15 different coping mechanisms evaluated are: activity, planning, suppression of communicative activity, containment, information seeking, search for understanding, emotional venting, growth and positive interpretation, acceptance, religion dedication, sense of humor, mental detachment, behavioral detachment, denial, drug and alcohol use. The 15 scales allow the analysis of three macro areas: mechanisms focused on the problem, mechanisms focused on emotional expression, and potentially maladaptive mechanisms.

The questionnaire evaluates how often the individual activates that type of behavior or coping process in problematic and stressful situations. The answers are evaluated with a Likert scale from 1 (usually 'I don't do it') to 4 ('I almost always do it'). A total score of coping ability is not provided. Instead, the evaluation is carried out on each dimension. High scores indicate the coping strategies most used by the subject.

Locus of Control—LC (Rotter [16], Italian adapted: Nigro [21]). This measures the subject's perception of control over events in life. Those feelings responsible for the things happening in their lives are defined as having an internal locus of control; conversely, those feelings that events in their lives are determined by forces beyond their control are defined as having an external locus of control. The instrument consists of 29 multiple-choice items ('internal' beliefs as opposed to 'external' beliefs). The total score corresponds to the number of 'external' choices made by the subject.

Toronto Alexithymia Scale—TAS-20 (Taylor et al. [22]). The questionnaire is composed of 20 items and reveals the three dimensions which define the construct of alexithymia:

F1. Difficulty in identifying feelings; that is the inability to discern emotions from somatic sensations.
F2. Difficulty in describing one's feelings to others; that is the difficulty in communicating emotions verbally.
F3. External-directed thoughts; the inability to recognize the emotions implies a cognitive activity projected outside the person, without taking the emotional aspects into consideration.

Responses are evaluated with a 5-point Likert scale: from 1 (completely disagree) to 5 (completely agree). The total scores range from 20 to 100.

data analysis

The scores from the TAS-20 test were evaluated by a descriptive analysis. The chi-square statistical test, to verify the possible differences between the two groups, was used. In order to examine the differences among mean scores in the TAS-20 single dimensions, the Student's *t*-test was used. The same statistics was used to reveal the possible differences between the experimental group and the control group with regard to the coping style and locus of control.

results

The diagnosis of alexithymia obtained by the test scoring shows a higher percentage of alexithymic subjects in the

experimental group (Figure 1). In fact, the subjects with mammary carcinoma show significantly higher alexithymic characteristics compared with subjects without cancer (36.4% versus 2.4%; $\chi^2 = 20.9$; $P < 0.0001$).

In particular, a significant difference was found in the TAS-20 single dimensions (Table 1). The subjects with mammary carcinoma, compared with the control group show greater difficulty in identifying feelings ($t = 4.83$; $P < 0.0001$) and in describing feelings to others ($t = 2.18$; $P < 0.05$) and use a external-oriented thought rather than an internal-oriented thought ($t = 3.53$; $P < 0.001$) (Figure 1).

As regard the coping strategies used, the analysis conducted on the test's macro areas show differences between the groups (Table 2). Specifically, the subjects with mammary carcinoma use significantly less strategies focused on problem solving ($t = 2.06$; $P < 0.05$) and are more prone to use mechanisms focused on momentary predominant emotions ($t = 2.31$; $P < 0.05$).

As regards the third area—potential maladaptive mechanism—no significant differences were found.

The analysis regarding the locus of control showed no evidence of meaningful differences between the two groups [23].

discussion

In this explorative study we have focused our attention on the possible connections between alexithymic mental functioning and mammary tumor, with the goal of identifying the possible involvement of psycho-emotional variables that may play a role in the etiology of the disease [24, 25].

The lack of emotional regulation could cause a deficit in the physiological regulation, especially in the connection between emotions and endocrine and immune systems [26]. The disorders in the affective regulation emphasize the inability of the individual to elaborate and use affection. The cognitive elaboration of emotions allows the regulation of other cognitive aspects of the self which are closely related to the emotions themselves. In the alexithymic patients, emotions were weakly correlated to words and images, and for this reason, they are only experienced as somatic sensations and not symbolized. Alexithymia is characterized by external-oriented thought manifested by verbal repetition, rich in material details but lacking in emotion—the so-called 'uncolored language' [27]. Due to the lack of capacity to symbolize, the tensions linked to the strongest emotions convey and derail in the body. The accumulation of repressed negative energy can cause symptoms and psychosomatic diseases [28].

The results of this study showed high percentage of alexithymic subjects in the experimental group, while this diagnosis occurred in a single case among women without any pathology. According to previous studies [5], data witnessed the existence of a relationship between alexithymic mental functioning and coping strategies not oriented to the problem, which prevent the evaluation and elaboration of events, and do not allow the subject to effectively confront stressful situations. In the analysis of coping strategies used by the group of subjects with mammary carcinoma, we noticed the tendency to elude the problem (the disease), and avoid searching solutions that would help to fight the crisis.

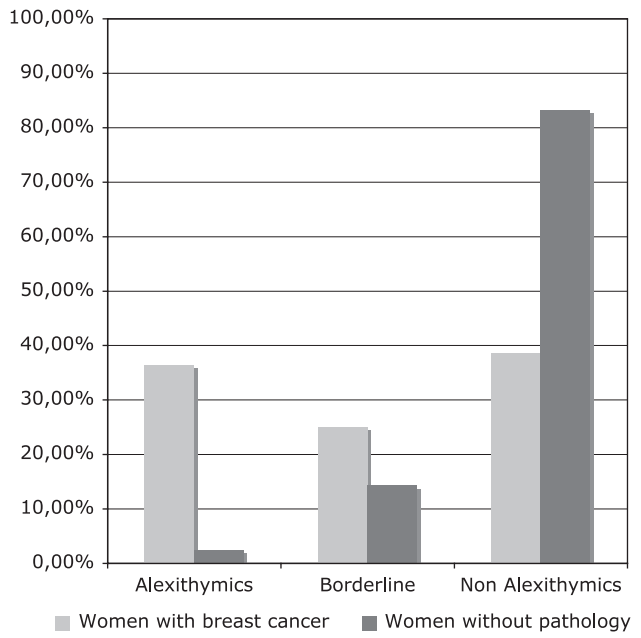

Figure 1. Comparison of TAS-20 alexithymia diagnosis between women with breast cancer and women without pathology.

Table 1. Comparison of TAS-20 average scores between women with breast cancer and women without pathology

TAS-20 scales	Women with breast cancer	Women without pathology	*t* value	*P*
Difficulty identifying feelings	2177	1479	4.838	<0.0001
Difficulty in describing one's feelings to others	1418	1195	2.185	<0.05
Externally oriented thinking	2009	1626	3.533	<0.001

TAS, Toronto Alexithymia Scale.

Table 2. Comparison of COPE average scores between women with breast cancer and women without pathology

COPE scales	Women with breast cancer	Women without pathology	*t* value	*P*
Mechanisms focused on the problem	5 10 682	5 51 667	2.069	<0.05
Mechanisms focused on emotional expression	6 95 682	6 51 429	2.308	<0.05
Potential maladaptive mechanism	2 66 818	2 47 381	1.745	NS

COPE, Coping Orientation to Problems Experienced; NS, not significant.

In the experimental group, high levels in the emotion-coping dimension can undoubtedly be explained by the presence of the disease and the emotional disruption that this event brings. These subjects, in fact, strongly need to lose themselves into their emotions, to vent, cry, and surrender [29].

Data submitted indicate that the tendency to repress one's emotions is correlated to some general schemes of reaction to stress which, when used in a dysfunctional manner (such as the attempt to ignore how threatening an event is) are maladaptive in the end.

The obtained results, although with some limits, indicate that the subjects affected with mammary carcinoma have a reduced capacity to control their emotions and tend to use rigid reaction mechanisms to stress (negation or repression) and to interject aggression. As literature underlines [30], the adaptation to particularly stressful situations, such as the onset of a neoplasia, is the flexibility in the use of coping strategies. In other words, it is the capacity not to become inflexible using just one strategy, but to change it when it proves to be maladaptive.

In conclusion, considering the importance that the study has assumed on the relationship between emotions and disease, this research represents an attempt to underline the importance of the evaluation of variables, both medical and psychological, in the growth, progression and course of the neoplastic pathology.

Clearly, future research need further investigations regarding variables such as the presence of stressful events and specific personality characteristics [31], but it also needs to verify whether the diagnostic impact can determine affective poor feelings, typical of alexithymia, compared with individuals who have not been yet acknowledged about the diagnosis.

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