Breast cancer and psychological resilience among young women

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Summary

Objectives
Aim of the study was to examine the psychological resilience among young women afterwards breast cancer diagnosis, as they could be considered a risk group for psychological distress for that clinical event.

Materials and Methods
A sample of n. 82 women in range age 31-51 years old was recruited and distributed in 2 groups: a) Breast Cancer group: n. 42 women were diagnosed and b) Normal Control group: n. 40 healthy women. The psychological battery was composed of self-report tests: PDI, STAXI, STAY and BDI-II.

Results
Our results evidenced significant impact only in depression scale: the patients presented higher scores than control group. The experience, expression and control of the anger and the ex- pression of the anxiety scores highlighted resilient performance in breast cancer patients. Moreover, interesting to notice that the MANOVA analysis comparing the psychological tests in differ- ent time of the treatment (T0 = post survey; T1 = post chemo- therapy and T2 = ongoing hormone therapy) hasn't showed significant differences between emotional condition of patients and health subjects.

Conclusions
Our results highlighted the psychological resilience in young women that have to deal with the breast cancer diagnosis and treatment. Our finding showed that young patients seem more emotional resilient: experiencing negative emotions and trans- forming that in personal growth; young patients can be consid- ered a target to support with specific treatment to improve their wellness and quality of life after overcoming physical weakness.

Key words
Resilience • Psychological distress • Breast cancer • Young women

Introduction

The breast cancer diagnosis and related clinical treatment have a strong impact on the women emotional system and quality of life. Several studies have detected the neg- ative effect of cancer diagnosis on affective relations, life expectation, long time planning, productivity, sociality; psychological signs of mental weakness could be depres- sion, anxiety, anger, low mood, social retraction, isola- tion, aggressivity. Primary impact is on woman patient; secondary effect is simultaneously on her family, such as in social and working environment.

Linley [1] sustained that the 60% the patients refers stress- ful condition and psychological weakness. According to several researches, the cancer experience is distressing and disruptive, but the clinical practice suggested that the outcomes could assume also positive aspects in terms of personal resources, enhanced sense of purpose [2][3]. Belliz- zi [4] reported growing personal experiences dealing with illness in terms of improved social relationship, changing in life priority.

Lu [5] examined an interesting construct about the link between 'Ambivalence over Emotional Expression' (AEE = conflict between waiting to express yet fearing the consequences of such expression) and depression symp- toms in breast cancer survivors. Women showed higher depressive symptoms risk if having also high AEE factor, and that might be joined cognitive mechanisms as intru- sive thought (= repetitive and unwanted thoughts about stressful events [6]).

A protective factor for stressing in clinical setting might be the psychological resilience, or better the positive ad- justment outcomes to the exposure of adversity [7].

Recently, clinical practice showed the cancer patients have a good level of resilience to the disease impact and that is linked much more to a major compliance level in the treatment protocol. Some researchers showed that the processes of resilience and experience of growth are associated with better adaptation psycho-physiological post-event and lower levels of psychological distress in the medium and long term [8][9].

Studies highlighted the importance could have the resil- ience for the compliance of patients with breast cancer

diagnosis [10-13]. Anyway in cancer literature, few findings occur benefit or positive outcome in minority women but with not clear evidences. In add, several studies were conducted so far on sample in range age 50-70 year olds. Overall aim of the study was to investigate the emotional condition restricted to targeted breast cancer patients. Our interest was focused on range age younger to investigate the emotional features activated in young women with breast cancer diagnosis, and the relationship with psychological distress. We examined the emotional condition of women during their pharmacological treatments in order to verify risk and protective factors analyzing the behavioral characteristics and the presence/absence of psychological resilience in breast cancer women.

Materials and Methods

Subjects

The sample was composed of n. 82 women in range age 31-51 years old (mean age 42.2, sd ± 4.1) distributed in two groups: a) Breast Cancer (BC) group: the BC group was composed of 42 women (mean age 42.6, sd ± 3.6) and b) Normal Control (NC) group: the NC group was composed of n. 40 healthy women (mean age 41.7, sd ± 4.6). The BC group was recruited in San Salvatore Hospital – Medical Oncology Division (Director: Prof. Ficorella, L'Aquila, Italy), while the NC group was composed of healthy volunteers without clinical signs and/or psychological symptoms. Informed written consensus was obtained for each participant.
In Table I are reported demographical data about sample.

Measures

Data on sociodemographic, medical and psychological variables were collected to investigate the relationships between psychological conditions and dealing with breast cancer treatment.
Sociodemographic variables: sociodemographic variables have been: age, marital status, maternity, level of education, employment status.

Medical variables: medical variables were abstracted from patient's charts: cancer stage, type of surgery, chemotherapy status, hormone therapy status.
Psychological variables: the measured psychological variables have been: depression, anger, anxiety, psychological distress.

Psychological Tests

The sample was submitted to the psychological battery composed of psychological questionnaire, listed below:
- *Psychological Distress Inventory* (PDI) [11]. It is a self-administrated questionnaire consenting to measure the impact of the disease and therapies in terms of psychological distress. It is composed of 13 questions and the answers on Likert scale (5 points). The standard score consents to estime the presence/absence of psychological distress for measuring of global distress. This test was submitted only patient group;
- the internal reliability was good (a = 0.86);
- *State-Trait Anger Expression Inventory-2* (STAXI-2) [12]. It is a self-administrated questionnaire that consents to measure the emotional states and personality traits; in particolar, the evaluated traits are experience, expression and control of anger. The scoring consents to releave different trait of personaliy in anger risk. The internal reliability was a = 0.83 for Patient group and a = 0.61 for Control group;
- *Stait-Trait Anxiety Inventory-Form Y* (STAY) [13]. It is self-report test to measure the state and trait anxiety. It is composed of 40 items. The scoring is on the basis of standard procedure. The internal reliability was a = 0.62 for Patient group and a = 0.73 for Control group;
- *Beck Depression Inventory-II* (BDI-II) [14]. It is a self-administrated test. The BDI-II consists of 21 items to assess the intensity of depression in clinical and normal patients. Each item is a list of four statements arranged in increasing severity about a particular symptom of depression. The scoring consents to releave the presence/absence of depression and related degree (from minimal to severe depression sign). The internal reliability was good for both patient (a = 0.81) and control (a = 0.76) groups.

TABLE I.
Demographic data of sample.

Variables	BC group		NC group		p	F
	X	sd	X	sd		
Age	43.4	± 4.0	42.4	± 3.7	0.24	1.35
Education	13.2	± 3.1	16.5	± 0.8	0.00	40.64
Children	1.3	± 0.8	1.2	± 0.8	0.56	0.34
Married						

Procedure

The psychological evaluation of BC group was conducted in quite room allowed in Medical Oncology Division of San Salvatore Hospital in L'Aquila (IT). The NC was examined in Psychological Laboratory of University of L'Aquila (IT). Trained psychologists have applied the evaluation protocol. All tests have been administred to BC group, while only STAXI, BDI and STAI to NC group. Every evaluation session lasted 1 hour and has been distinguished in two steps: clinical interview and testing. During the interview time has been conducted the clinical evaluation and during the testing time tests have been administrated. Blended judges have codified the psychological tests.

Ethic Committee

Positive Opinion was obtained by Ethic Committee form University of L'Aquila (IT).

Statistical Analysis

Descriptive statistics for baseline characteristics and the outcome measures at each timepoint were calculated. ANOVA and Post-hoc analysis have been used to detect the statistical significance of the overall differences in the mentioned variables across the psychological variables. The data was performed by SPSS program with fixed value $\alpha = < 0.05$.

Results

In Table II are reported the raw scores of the sample in the different emotional tests.
Firstly, we compared the emotional condition of BC group and NC group to verify the presence of emotional weak conditions measured in anxiety, anger and depression labes. An One way ANOVA 2x3 showed no significatively difference between examined groups in anger and anxiety factors; in the depression variable, the BC group evidenced scoring significantly different than NC group $(F_{(1,79)} = 6.63; p < 0.01)$ (Post-hoc $p < 0.01$) showing a more weakness of BC group than NC group (see Figure 1). Anyway, we have to highlight that even thought the BC group is resulted having higher scoring then NC group, the BC patients hadn't been diagnosed 'depressed' because their performance was under pathological value (cut-off = 13).
Then, the BC group was divided in 2 subgroups (Young and Adult) by the medians value of range years old. The median was 44 years old. An One way ANOVA was conducted to compare the data performance of Young and Adult subgroups in psychological tests. No significative difference has been evidenced.
Then, we examined the emotional features of whole

**TABLE II.**
Raw score of the sample performance.

Variables	BC group		NC group		F	p
	X	sd	X	sd		
STAXI						
State Anger	14.9	±5.9	10.9	±1.6	11.4	0.001
Trait Anger	18.4	±4.5	19.7	±4.0	1.72	0.192
Ax/out	18.3	±4.0	19.8	±3.3	3.27	0.074
Ax/Con	22.3	±4.0	22.3	±5.0	3.36	0.071
Ax/Ex	27.7	±7.4	27.7	±6.4	0.13	0.718
Total Score	127.4	±21.5	130.3	±9.7	0.60	0.43
STAI						
Total score	89.7	±5.8	89.0	±7.4	0.233	0.631
BDI						
Total score	9.6	±7.2	6.5	±4.8	5.13	0.026
PDI						
Total score	29.9	±8.4				

BC group; we compared the psychological status (evaluated by STAXI, STAI and BDI) and the PDI diagnosis (presence/absence distress sign); the distribution of BC group into no distress sign/distress sign subgroup has been performed by the cut-off > 25: by the range value 13-25 was included subject with no sign of distress; by the range value 26-65 was performed the inclusion of subjects with sign of distress. The One way ANOVA 2x3 showed significatively difference $(F_{(3,38)} = 6.509; p > 0.001)$, and Post-hoc analysis evidenced the patients with distress sign have higher depression and anger factors $(p < 0.001)$; in opposite, the anxiety didn't result a related factor (see Figure 2).
Besides, we wanted to check the influence of social
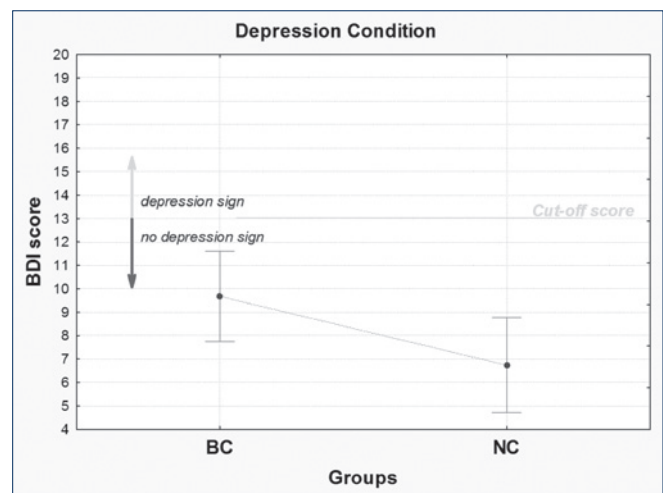
FIGURE 1.
Depression representation of both BC and NC groups.
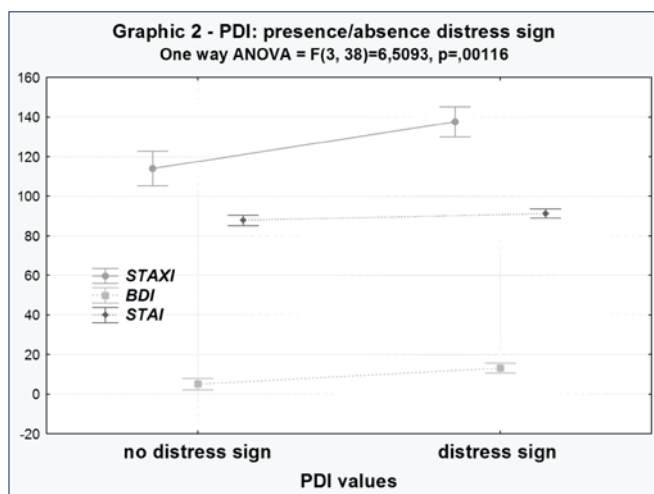
FIGURE 2.
Comparison between timing and emotional features in PDI diagnosis.

factors (as marital, maternity, education, occupation) on emotional condition and/or psychological distress. We applied a MANOVA 2 (groups: BC/NC) x 2 (marital status: married/no married) x 4 (tasks: PDI, BECK-II, STAXI STAY): results showed no significative influence; the same finding we get by the maternity factor (mother/no mother), employment status (worked/no worker); a MANOVA 2x3 (education: lower secondary school; high school, master degree) x 4 to evaluate the educational factor: no significative difference between BC and NC groups in the emotional performance.

Finally, we wanted to verify if the emotional condition could be influenced by pharmacological timing, pushing emotional changing on going of the treatments. We have distributed the BC group by treatment timing: T0 = post survey and 20 days from diagnosis; T1 = post chemotherapy and after 6 months from diagnosis; T2 = ongoing hormone therapy and 12 months from the diagnosis. The MANOVA 2 (group: distress/no distress sign) x3 (timing: T0, T1, T2) x3 (emotional tasks: STAXI, STAI, BECK-II) evidenced no significant interaction by examined variables.

Discussion and Conclusions

The present study is aimed to analyze the emotional distress of breast cancer sample in terms of depression, anger, anxiety and psychological distress. In particular, our study has been focused on the younger sample (range age 35-50 years old) with diagnosis of breast cancer in early time. Our findings appeared interesting. The young women with breast cancer seemed resilient and

motivated dealing with the illness, and focused on the good compliance and getting the fast positive outcome. In fact, our sample showed no signs of mood disorders or psychopathological conditions. The cancer diagnosis has harsh impact making patients weaker, but anyway their psychological resilience consents to them to be stronger and having a stronger feedback with their real clinical condition.

Our results evidenced significant difference only in depression variable but not in pathological range: the patients have presented higher and significative scores than healthy women; anyway the scores have been under cut-off of depression diagnosis. No one of sample (both pathological and healthy groups) has showed signs of depression. Those data highlighted the positive personal perspective of the young patients dealing with the cancer illness. The setting of psychological support has to be modeled on that proposing therapeutical strategies oriented to improve mostly their later mental wellness.

The experience, expression and control of anger scores and the expression of the anxiety scores have highlighted resilient performance in breast cancer patients not associated a specific social variables. Moreover, the multivariate analysis on the psychological tests on timing pharmacological treatments didn't show difference between patients and health subjects. Our findings evidenced the role of psychological resilience of the women dealing with the breast cancer in the adjustment to the pathological condition: internal factors seem to play a central role in the psychological resilience, as the external (social) factors didn't relieved like main variables influencing the emotional system of the patients. In fact, our finding evidenced the absence of sociodemographic influence. We suggest the predictive variable for better adjustment to the clinical condition is the internal variable (personality). The personality traits are strengthness to deal with the disease impact in different timing of pharmacological treatment.

Our finding confirmed the clinical relevance of psychological resilience in the complex clinical treatments of patients (surgery and/or pharmacological intervention) [15][16], highlighting the positive impact confronting the emotional distress and coming back to normal life.

Urcuyo [17] analyzed the breast cancer diagnosis also can have an overall positive impact women life promoting benefit outcome. In fact, the tremendous progress in medical path has favored early interventions, joined to major survival and induced positive life expectations. Patients can experience positive as well as negative emotional conditions from breast cancer illness; benefit finding are supported by resilience impact on patients in the direction of a better internal psychological change an increased acceptance of the imperfections in life, renewed appreciation of own social and affective context.

Afterwards breast cancer diagnosis, benefit finding seem to reflect a positive, accommodative, and appreciate orientation to life. Our finding sustains the need to guide the women in the clinical path not only to deal with in the early time the diagnosis, but also and much more to reduce the stressful and favor the efficient winning life back. Major compliance, faster coming back to the normality, controlled impact of the disease: these 3 mentioned indexes seem efficacy in the lighting of clinical burden of the patients and a better complex and integrated clinical intervention in breast cancer illness.

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