Special ISSUE • 2016 • vol.1 • 20 - 26

# LEVEL AND CONDITIONING OF KNOWLEDGE IN BENIGN BREAST DISEASE IN VERY YOUNG PATIENTS

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## Abstract

Purpose of the study was to identify individual psychopathological features in young patients suffering from benign breast disease. Participants were interviewed using a structured clinical test (SCID-II, version 2.0) disorders, and the Italian version of Akiskal's semi-structured clinical interview for temperamental profiles (TEMPS-I) after clinical breast exams and ultrasonography. All patients presented different personality disorders and heterogeneity in temperamental profiles. Of 19 patients recruited, four patients with negative breast exam had istrionic-narcisistic personality; nine patients suffering from fibroadenoma, three patients with breast asymmetry had mainly B group disorders with high prevalence of avoidance and obsessive-compulsive personality. Patients suffering from hematoma and gynecomastia had the C group antisocial disorder. In fibroadenoma, hematoma and gynecomastia cases the temperamental trait is mainly depressive. In breast asymmetry cases and in patients without breast disease, temperamental trait is cyclothymic and irritable. The study demonstrate the significance of psychiatric counselling also for young patients in breast units. Future purpose is to extend the sample and to add a follow-up evaluation.

**Key word:** personality, temperament, breast disease, young patients, gynecomastia, fibroadenoma

## Introduction

Many young patients fear breast cancer and this is the main reason that induce them to consult specialist with the purpose of early detection and diagnosis in case of palpable mass [1,2]. Breast asimmetry, fibroadenoma [3,4], hematoma and gynecomastia [5] are the most frequent breast palpable mass in young patients ≤ than 20 years old. Even if breast cancer is rare at this age, a careful history, physical examination and ultrasonography should be performed to obtain a diagnosis. Mammography, fine needle aspiration and Magnetic Resonance are indicated in selected cases [6]. Surgical intervention usually is contraindicated in prepubertal patients and recommended only in few cases in postpubertal patients [7]. However, in these patients, benign breast diseases are diagnosed and psychological distress may accompany the patient for a long period [8,9]. Personality disorders and temperamental traits can influence the patient's perception of the disease, reflecting knowledge, experiences, individual and collective values that concern different times and places in history. The role of specific personality traits has been considered in the assessment of temperament and character as a predictor of a certain psychopathological state in patients with breast disease diagnosis. Patients with breast disease should be screened for personality disorders because specific interventions for these patients could prevent psychiatric disorders. Breast benign disease are more frequent than malignant ones [10]. Objective of the study was to investigate individual characteristics in young patients with breast palpable mass.

## Material and Methods

### *Population*

This prospective observational study included 19 patients in the period between 1st January and and 31th March 2015. Informed consent was obtained from all individual participants included in the study in over 18yo patients; in the others, parents gave informed consent for their sons (Table 1). Senologic inclusion criteria: ≤ than 20 years old; first breast examination. Senologic exclusion criteria: breast implants; previous breast or gynecological surgery.
Psychiatric inclusion criteria: medium-high socio-cultural background; no previous visits with a psychiatrist or therapy with psychotropic drugs.
Psychiatric exclusion criteria: familiarity for mental illnesses.

### *Breast exams*

All patients underwent clinical breast exam and breast ultrasonography; US was performed using a Logiq S6 scanner (GE Healthcare, Waukesha, WI, USA) with a multifrequency matrix-array linear transducer (7-14 MHz); a lower frequency transducer was used for the larger attenuative breasts, inflammatory masses and the axilla. The use of a stand off was required for nipple, superficial/or skin lesions. Colour Doppler US was also performed to study intralesional vascularity. In one case of giant fibroadenoma, US-guided fine needle aspiration was performed, as presurgical planning.

### *Psychiatric evaluation*

Patients with a breast disease diagnosis underwent a psychiatric visit within three days after senological exams. To all patient, after informed consent, diagnosis was established with the aid of a structured clinical interview for DSM-IV Axis II (SCID-II, ver 2.0) disorders [11]. Each patient furnished relevant anamnestic data regarding personal, physiological and clinical history through ad hoc interviews. Participants were also interviewed using the Italian version of Akiskal's Semi-structured Clinical Interview for Temperament (TEMPS-I) [12]. This interview consists of 32 items and distinguishes 4 basic affective temperaments: depressive, cyclothymic, hyperthymic and irritable. These profiles don't corresponding to the DSM-IV nosological categories.

### *Statistical analysis*

The statistical analyses were performed by Matlab statistical toolbox version 2008 (MathWorks, Natick, MA, USA) for Windows at 32 bit. The statistical tests performed: Student T-test [2] and Z-test [2], were considered significant with p-value < 0.05. The Pearson's linear correlation coefficient R, where the correspondent p-values were computed with T-Student test, under null hypothesis of Pearson's linear correlation coefficient R = 0. In addition the qualitative variables were changed in qualitative numeric variables: *study grade* (university student =1, school student = 0), *personality disorders* (avoidant = 1, dependent = 2, obsessive-compulsive = 3, istrionic = 4, narcissistic = 5, borderline = 6, antisocial = 7), *temperament* (depressive = 1, irritable =2, cyclothymic = 3), *breast diagnosis* (negative = 0, positive: breast asymmetry =1, FAD = 2, hematoma = 3, gynecomastia = 4), *sex* (female = 1, male = 0) and *relative affected by breast cancer* (present = 1, absent = 0) [13-15].

## Results

The patients sample was composed from 84.21% females (16/19) and 15.79% males (3/19); with age into range 15-20, mean age about 17 y.o. and standard deviation about 2 y.o. In addition this group was composed by 7 university students and 12 school students (Table 1). At breast exams, 15 patients (78.95%) had benign diagnosis, 4 patients (21.05%) breast examination were negative. Of the 15 positive patients, 13 were female, 2 were male. Of the 13 female patients, nine had diagnosis of fibroadenoma, three of breast asymmetry, one of hematoma; in the two male patients gynecomastia was diagnosed (Table 2). Four patients had relatives affected by breast cancer; in one of these patients, fibroadenoma was diagnosed, one had a post-traumatic hematoma; in two patients breast examination was negative. In correlation analysis both univariate and multivariate were performed among variables. The significant results were obtained both in univariate and multivariate analysis only between p*ersonality disorders* II and *personality disorders* I. For radiologist variable: *breast diagnosis* was a significantly negative correlation with *age* (R= -0.465, p-value = 0.0446) according our classification, and in multivariate analysis *study grade*, *age* and r*elative affected by breast cancer* were a significant predictors for dependence variable *breast diagnosis*. All patients presented different personality disorders and heterogeneity in temperamental profiles, as shown in SCID II and TEMPS-I results. Of 9 patients with FAD presented 5/9 avoidant disorder and 3/9 antisocial and 1/9 obsessive-compulsive disorders.

Of 3 patients with benign breast asymmetry , 2/3 presented avoidant and obsessive compulsive disorders. Of 2 patient with gynecomastia presented avoidant and antisocial disorders. One patient with hematoma presented antisocial and dependant disorders. Of 4 patient with no breast mass presented 2/4 istrionic and narcissistic disorders and 2/4 dependent. In addition the temperamental analysis:

- Of 9 patients with FAD presented 6/9 a depressive and 3 a cyclothymic temperamental traits;.
- Of 3 patients with benign breast asymmetry presented 2/3 cyclothimic and 1 an irritable temperaments;
- Of 2 patient with gynecomastia presented a depressive temperament;.
- One patient with hematoma presented a depressive temperament;
- Of 4 patient with no breast mass presented 3/4 an irritable and 1/4 a cyclothymic temperaments (Table 3).

## Discussion

The evolution of senologic diagnosis, thanks to ultrasonography and interventional procedures, such as fine needle aspiration and biopsies can avoid useless surgery in majority of patients affected by benign diseases, term that includes a heterogeneous group of lesions that may be detected as incidental findings [16]. Breast asymmetry, fibroadenoma, hematoma are the most frequent lesion detected in female young patients; gynecomastia is a common finding in male adolescents.

*Breast asymmetry* can be differentiate in three classes in relation to shape (due to tubular breast and Poland Syndrome, position (in patients suffering from scoliosis), and volume (macromastia and hypoplasia). The diagnosis can be carry out with clinical examination and the therapy consists in surgical intervention [17].

*Fibroadenoma* is the most common benign breast disease in young women; the lesion is a hormone-dependent neoplasm that develop from the special stroma of the lobule, that can arise since 15 yo. The management of this lesion depends on growth and diameter; only lesions with a diameter >2.5/3 cm or growing lesions should be undergone surgical excision; other lesions can be monitored with ultrasound follow-up [3].

*Hematoma* can occur in case of a major trauma (road accident) or minor (assaults or falls); the lesion can be followed by central necrosis and liquefaction of the adjacent fat. Unless a massive blood extravagation, requiring surgical drainage, occurs, this can lead to the development of a fibrotic or cystic tissues that will almost entirely calcify within 2 or 3 years [18].

*Gynecomastia* is characterized by the presence of palpable breast tissue in boys without other signs of sexual maturation; it is a rare condition, and some cases have been associated with excessive estrogen production by adrenal or testicular tumors, congenital adrenal hyperplasia, rare syndromes, such as Peuts-Jeghers' or can be related to the use of drugs that affect androgen and estrogen production and metabolism.;surgical approach can be the treatment of choice in this disease [19].

The strengths of our study is the standardized and widely accepted SCID II interview that captures the most important dimensions of personality differences in young population.

Our assessment of personality was free from such distortions, because the test were drawn up within

three days from breast examination. In our experience, all patients presented a different personality disorders. Of 19 patients enrolled, four had no breast disease and present istrionic-narcissistic personality, nine suffered from fibroadenoma and three cases of breast asymmetry present B group disorders with prevalence of avoidant and obsessive compulsive personality. In patients suffering from hematoma and gynecomastia C group antisocial disorder overbears. The prevalent personality disorder (cluster b avoidant type) is characterized by social isolation, relationship anxiety, low esteem and alterated perception of body image due to breast disease. Assertive training in a cognitive behavioral therapy can improve patients' esteem. Generally, psychotherapy can reduce the emotional distress and allows to cut down the unsuitableness in social life due to breast disease [20]. The body image is a multifactorial concept, widely used in scientific literature, that roots in biological and psychological bases and that can change during the life. Inter alia, neurobiological, somatic and psychological factors contribute to body image, that represents a key element of sexual identity, expecially in adolescents that live in natural conflictuality [21,22]. Breast appearance and beauty are the most important elements because of the influence on femininity, esteem, self confidence and the belonging to own gender [23]. Sexual identity and relationship are physically and emotionally influenced by changes due to breast disease in a young patient. Emotional and inconscious perception of own body is the main factor of "private body consciousness"; in these cases there is the loss of social adaptation with an attitude of closure also with own physician [24]. Besides personality disorders, temperament was analyzed; of 9 patients with FAD presented 6/9 avoidant a depressive and 3 cyclothymic temperamental traits; of 3 patients with benign breast asymmetry presented 2/3 cyclothimic and 1 an irritable temperaments; of 2 patient with gynecomastia presented a depressive temperament; one patient with hematoma presented a depressive temperament; of 4 patient with no breast mass presented 3/4 an irritable and 1/4 a cyclothymic temperament.

Depressive temperament overbears in case of fibroadenoma, hematoma and gynecomastia; in case of breast asymmetry and in patients without breast disease cyclothymic and irritable temperament predominates. There are some factors that can cause a reactive - depressive behavior in these patients. Psychosocial factors such as a restless youth, pessimism, social inadequacy, stressant events, can predict depressive symptoms in this population [25]. Physical factors such as pain, physic disability and other symptoms are associated to depression, but there is no association with the stage of the disease, the treatment and the doctor-patient relationship that can cause maladaptive response. Our results, according to literature, suggest that a depressive trait in these patients is influenced by personality more than temperamental profile that can be modified by the clinical course [26].

## Conclusion

In young patients with breast palpable mass, personality disorders do not influence the clinical course, but can modify the quality of life in relation to interpersonal relationship because they tend to social-labor insulation due to anxiety and low esteem (B group personality). Furthermore, our study investigate also temperamental traits; a depressive temperamental can characterize some diseases, such as fibroadenoma and gynecomastia; in these cases a reactive-irritable behavior can influence the compliance in the medical approach and in the therapy decision. Limitations of our study include: the small sample of patients, the duration of the study and the therapy response. Data obtained from our study suggest a psychiatric consulence for young patients in breast units. Future purpose is to extend the patient sample, add a follow-up evaluation that can validate psychoterapeutic approach associated to the standard treatment for these diseases.

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**Table 1 –** *study population*

| P. | SEX | AGE | STUDY GRADE | PERSONALITY DISORDERS I | PERSONALITY DISORDERS II | TEMPERAMENT | BREAST DIAGNOSIS | RELATIVE AFFECTED BY BREAST CANCER |
|---|---|---|---|---|---|---|---|---|
| 1 | F | 20 | university Student | avoidant | obsessive-compulsive | irritable | breast Asymmetry | no |
| 2 | F | 17 | school Student | antisocial | obsessive-Compulsive | depressive | Fibroadenoma | no |
| 3 | F | 16 | school Student | avoidant | obsessive-compulsive | depressive | Fibroadenoma | no |
| 4 | F | 15 | school Student | antisocial | dependant | depressive | Hematoma | mother |
| 5 | F | 18 | school Student | istrionic | dependant | irritable | Negative | no |
| 6 | M | 16 | school Student | avoidant | antisocial | depressive | Gynecomastia | no |
| 7 | F | 15 | school Student | avoidant | antisocial | depressive | Fibroadenoma | no |
| 8 | F | 15 | school Student | antisocial | borderline | depressive | Fibroadenoma | grandmother |
| 9 | F | 19 | university Student | obsessive-Compulsive | avoidant | cyclothymic | breast Asymmetry | no |
| 10 | F | 16 | school Student | obsessive-Compulsive | borderline | depressive | Fibroadenoma | no |
| 11 | M | 15 | school Student | Avoidant | antisocial | depressive | Gynecomastia | no |
| 12 | F | 17 | school Student | Antisocial | obsessive-Compulsive | depressive | Fibroadenoma | no |
| 13 | F | 17 | school Student | Istrionic | Narcissistic | cyclothymic | Negative | no |
| 14 | F | 20 | university Student | avoidant | Borderline | cyclothymic | Fibroadenoma | no |
| 15 | F | 19 | university Student | avoidant | antisocial | cyclothymic | Fibroadenoma | no |
| 16 | M | 17 | school Student | Dependant | Istrionic | irritable | Negative | mother |
| 17 | F | 19 | university Student | obsessive-compulsive | narcisistic | cyclothymic | breast asymmetry | no |
| 18 | F | 19 | university Student | avoidant | borderline | cyclothymic | Fibroadenoma | no |
| 19 | F | 18 | university student | istrionic | narcissistic | irritable | Negative | grandmother |

**Table 2** - *Sample patients composition*

| Patients | *Positive* | *Negative* |
|---|---|---|
| 16 F | 9 FAD<br>3 BREAST ASIMMETRY<br>1 HEMATOMA | 3 |
| 3 M | 2 GYNECOMASTIA | 1 |

**Table 3.** Univariate and Multivariate linear correlation analysis among: personality disorders, temperament, breast diagnosis, age, study title and relative affected by breast cancer.
In table were indicated the Pearson's linear correlation coefficient and in parentheses the correspondence p-value in column univariate analysis and in multivariate analysis The partial correlation coefficient $R_{partial}$ was the coefficient of correlation of the variable with the dependent variable, adjusted for the effect of the other variables in the linear model. In bold the significant tests.

| **Univariate analysis** | | **Multivariate analysis** |
|---|---|---|
| ***Parameters*** | ***R (p-value)*** | Multiple linear correlation coefficient = 0.601 |
| *Personality disorders* I / *Temperament* | 0.309 (0.198) | $R_{partial}$ = - 0.043; p-value = 0.884 |
| *Personality disorders* I / *Breast diagnosis* | 0.175 (0.475) | $R_{partial}$ = 0.476; p-value = 0.085 |
| *Personality disorders* I / *Study grade* | 0.042 (0.863) | $R_{partial}$ = - 0.356; p-value = 0.212 |
| *Personality disorders* I / *Age* | 0.0301 (0.903) | $R_{partial}$ = 0.395; p-value = 0.162 |
| *Personality disorders* I / *Sex* | 0.281 (0.244) | $R_{partial}$ = 0.489; p-value = 0.076 |
| *Personality disorders* I / *Relative affected by breast cancer* | 0.133 (0.588) | $R_{partial}$ = 0.432; p-value = 0.123 |
| | | Multiple correlation coefficient = 0.618 |
| *Personality disorders* II / *Personality disorders* I | **-0552 (0.0142)** | **$R_{partial}$ = -0.554; p-value = 0.0494** |
| *Personality disorders* II / *Temperament* | -0.148 (0.546) | $R_{partial}$ = -0.083; p-value = 0.789 |
| *Personality disorders* II / *Breast diagnosis* | 0.143 (0.558) | $R_{partial}$ = 0.253; p-value = 0.804 |
| *Personality disorders* II / *Study grade* | -0.152 (0.535) | $R_{partial}$ = -0.135; p-value = 0.660 |
| *Personality disorders* II / *Age* | -0.173 (0.480) | $R_{partial}$ = 0.121; p-value = 0.694 |
| *Personality disorders* II / *Sex* | -0.256 (0.290) | $R_{partial}$ = 0.097; p-value = 0.752 |
| *Personality disorders* II / *Relative affected by breast cancer* | -0.074 (0.764) | $R_{partial}$ = 0.137; p-value = 0.655 |
| | | Multiple correlation coefficient = 0.753 |
| *Breast diagnosis* / *Study grade* | -0.260 (0.283) | **$R_{partial}$ = 0.530; p-value = 0.0348** |
| *Breast diagnosis* / *Age* | **-0.465 (0.0446)** | **$R_{partial}$ = -0.667; p-value = 0.0048** |
| *Breast diagnosis* / *Sex* | -0.363 (0.127) | $R_{partial}$ = -0.395; p-value = 0.130 |
| *Breast diagnosis* / *Relative affected by breast cancer* | -0.191 (0.433) | **$R_{partial}$ = 0.576; p-value = 0.0196** |