Personality, social relationships and depression in post menopause women with early stage breast cancer: a pilot study for a secondary prevention towards a positive aging.

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Abstract

Purpose: The aim of our study is to establish whether a difference exists in the personality intrapsychic processes, SN and SS, ASQ-anxiety, and CDQ-depression of fifty-eight breast cancer(BC) women(W) and seventy-four healthy-women, all in post menopause.

Methods: Tests: SASB Form-A intrapsychic behavior, Social Network List (SN), and Social support evaluation (SS). Statistical analysis: Variance analysis (ANOVA) was applied to evaluate the SASB clusters differences between the two groups; Pearson's R coefficient was used to compare SASB, SN, SS dimensions, ASQ, and CDQ.

Results: BC women showed a smaller size of SN (fewer social relationships), with ties stronger than healthy women. SASB Profile BC-W (comparison with healthy-women)." Not affiliation and Autonomy": medium low value of autonomy, low self-appreciation and self-esteem, low expression of emotions and needs, difficulties in being able to achieve emotional and psychic equilibrium in presence of stress because of their control and self-critical behavior, depression, stress; difficulties in asking helps to family members. They invest in limited bonds for leisure, considered important but without fall into intimacy: they may be not always satisfied of their relationships. The depression is directly linked to these intrapsychic behaviors.

Conclusions: Patients with "not Affiliation and Autonomy" SASB profile should be regarded as having a high risk of worse social support and depression, and could be followed up and screened, in order to plan the multidimensional and psychotherapeutic intervention specific to the single patient, aimed at modifying the problematic and unhealthy intrapsychic experience and promoting the development of a better quality of life.

Background

Breast cancer (BC) it is the most common cause of cancer death for women worldwide. Approximately 70% of breast cancers occur after menopause. The postmenopausal period is often a very difficult one for women in association with cancer diagnosis [2]. Menopausal symptoms have been shown to trigger or intensify depression among women with coexisting stressors, a previous history of depression, or a negative attitude towards menopause [1]. Many postmenopausal patients reported a decrease in social and family well-being, endocrine symptoms and neurotoxicity symptoms [3], affecting quality of life (QoL) [4,5].

Thus, it is important to have a greater knowledge of the problems and depression related to the onset of breast cancer(BC) in post menopause women. A high percentage of postmenopausal women reports endocrine symptoms, fatigue intensity and anxiety three years after starting of cancer treatment[6]. The age of diagnosis is important to implement targeted preventive intervention for elderly and postmenopausal patients with different needs[3]. Multidimensional interventions implemented on the

basis of knowledge of the specific difficulties of BC-patients in post menopause may play a role in restoring bio-psycho-social QoL, especially after an incisive diagnosis[7].

Secondary prevention is important for a good aging process, on the basis of theories of stress and coping, self-regulation, personality, and social processes, which have shaped the theoretical framework for identifying determinants of psychosocial adjustment to cancer[8,9]. In this perspective, QoL outcomes are associated with psycho-social factors, including personality [10-11] and depression [5]the last largely under diagnosed and undertreated in cancer patients, even if it may impact the disease progression, being associated with health complications[12]. Other studies about associations between psychological functioning and cancer, showed a tendency to be emotionally constricted and depressed with inappropriate and often destructively blame[13,14]. Inhibition of emotional expression and depression are associated with the incidence and progression of BC and other chronic illnesses[12,15].

Personality traits, stress and low social support (SS) may influence the individual's ability to cope, which mediates breast cancer risk via alterations in neuroendocrine and immune functioning[2,16]. Personality traits such as neuroticism was associated with high levels of negative psychological symptoms [17]. Type D distressed personality in this patients includes dimensions of negative affect and social inhibition and is associated with poor adherence to treatment and poorer health[18]. Lydia Temoshok [19] stated that the suppression of emotions characterized by a tendency to defer one's own needs to the needs of others contributes to the hypothesis of the existence of a personality that carries these aspects. Most studies focused on single personality traits, thus covering only a part of the personality structure, even if through analysis of traits it is possible to study combination personality profiles that may increase risk for depression, and physical symptoms among patients undergoing cancer treatment [5,15, 20, 21]. Person centered approaches to examining personality traits enable the identification of latent classes (subgroups) of individuals with distinct profiles of personality dimensions [22].

Some of such approaches include cluster analysis, complementary variable centered approaches by conceptualizing personality as an interrelated system of several traits. To our knowledge, few studies have utilized the SASB-Structural-Analysis- Social-Behavior by L.S. Benjamin[23,24] to examine the relationship between personality profiles and depression in BC women. For this reason, in this study we have implemented the SASB circumplex-model to describe personality from normal to pathology and define intrapsychic behaviors by three underlying dimensions: focus (other-self-introject), affiliation-hostility (love-hate), and interdependence-independence (enmeshment-differentiation). SASB applications extend from research to practice: diagnosis of personality, planning and verification of psychotherapeutic intervention.

The importance of social relationship for health is supported by several studies[25, 26]. Epidemiological studies evidenced that social isolation is often associated with unhealthy lifestyles and behaviors, that in time can lead to poor health outcomes[27]. Conversely, social relationships seem to exert a e stress management and a protective influence on health, for the adjustment to illness and in adaptation to the progression of many clinical conditions as, i.e. BC [26,28,29]. Socially isolated women report more

problems in vitality [30]. Individual relationships are often explored by Social Network Analysis (SNA). Social Network (SN)mapping techniques have been applied with a growing influence in the area of health and illness [26, 28]. SNA has been also applied to explore the relation between personal network structure and its association to personality traits [31]. Some studies confirmed a correlation between Type D and SS in patients with breast cancer, analyzing single aspects i.e. neuroticism[20]. Individuals with low neuroticism are likely to be influential person in a friendship network[32], while extraversion positively predicts social network characteristics such as the network size and proportion of new contacts[33]. The link between personality, SS and SN is very important for the emotional and social inhibition of personality in BC women, but to our knowledge few research have deepen this issue[26,34]. Instead, it was emphasized that this knowledge may allow the implementation of multidimensional and psychotherapeutic interventions, also considering that the age of menopause might be the beginning of a possible path of decline in going towards the third age, requiring specific interventions [35,36].

The aim of our study is to establish whether a difference exists in the personality intrapsychic traits, SN and SS, depression of healthy and post-menopausal BC women at first diagnosis[33]. We hypothesize that the presence of depression and negative intrapsychic traits are correlated with the SN and SS in BC postmenopausal women at first diagnosis.

Methods

This study was approved by Bioethical Advisory Committee of IRCCS-INRCA, Italy: code no. 19019. The SASB-Form-A questionnaire administration took place in the context of clinical interviews conducted by a single psychotherapist trained in the SASB administration. The administration of the network analysis was conducted by an experienced sociologist. Given the complexity of the administration, the sample is of fifty-eight subjects. The same psychotherapist and sociologist administrated the tests to the control group (Cg). Inclusion criteria: signing informed consent; age >= fifty years); post menopause; BC first time diagnosis (biopsy) (57%first-stage, 43%second-stage). Exclusion criteria: refusing to participate; being unable to provide informed consent; having other forms of cancer; using any type of psychotropic drugs (including antidepressants); having adrenal disorders; having a previous history of malignancy, with exception of non melanomatous skin cancers.

Ninety-two patients in post menopause were approached in the Oncology Clinic of INRCA-Hospital by the physician and asked to participate in the study. Seventy-two decided to participate and signed a consensus form after detailed explanation by the physician. Fourteen patients who did not complete the questionnaires were excluded. The study group was composed of fifty-eight BC women.

The Cg was composed of seventy-four healthy women in post menopause, with the same distribution of age, education, marital status, working situation of the BCg, recruited from several social centers in the city.

All the subjects of the study and control group completed the following questionnaires:

1. **Socio-demographic characteristics**
2. **SASB-Form-A-Questionnaire** by L.S. Benjamin[23,24] describes the intrapsychic behaviors of the personality structure from normal to pathological, by three underlying dimensions: focus (other,self,introject), affiliation-hostility(love-hate), interdependence-independence (enmeshment-differentiation). It has the appropriate reliability and validity to evaluate intrapsychic dimensions and is validated on the basis of DSMIV and on the Italian population. Interviewed subjects had to respond to 36 items rating on a ten-point scale ranging from zero to ten describing the intrapsychic behaviors during the last year (e.g. 'I neglect myself, don't try to develop good skills, ways of being'; 'I practice and work on developing worthwhile skills, ways of being'; 'I think up ways to hurt and destroy myself. I am my own worst enemy'). SASB applications extend from research to practice: assessment, treatment of psychopathology and verification of psychotherapeutic intervention. [23, 36].

The thirty-six questions of Form A are grouped by a specific score correction in eight clusters (Cl) of intrapsychic "Oneself" and interpersonal "Other" experience.

The eight clusters (Cl) of "Onself" and "Other" are both complementary and opposite (Appendix A).

The eight Cl of "Oneself" Intrapsychic experience are the following:

SASB-Cl1=Autonomy:Assertive and separating.

SASB-Cl2=Autonomy and love:Self-accepting and exploring.

SASB-Cl3=Love:Self-supporting and appreciative.

SASB-Cl4=Love and Control:Self-care and development.

SASB-Cl5=Control:Self-regulating and controlling.

SASB-Cl6=Control and hate:Self-critical and oppressive.

SASB-Cl7=Hate:Self-refusing and annulling.

SASB-Cl8=Hate and autonomy:Self-negligent and mentally absent.

Social network characteristics

The Social Network List[37] was used for network evaluation. Respondents were asked about size, typology and subjective perception of their social network by means of an Ego centred matrix, aimed to identify the system of relationships. The size was obtained by asking to respondents to list people important to them, also including acquaintances outside the inner circle of intimates, i.e. co-workers and neighbors. The structure of the network is defined by the SNA measures: density, (the extent to which network members know each other), multiplexity (the number of types of support that each network

member provides), reciprocity (the extent to which support is mutually exchanged). Density was calculated as the ratio between the effective number of ties among all the important persons and the maximum number of ties of each network, except the interviewed. Multiplexity was calculated as the ratio between the absolute number of multidimensional persons (persons who provided several kinds of support) and the total number of important persons. Reciprocity was calculated as the ratio between the absolute number of persons with a reciprocal relationship and total of important persons.

Social support evaluation

Subjective perception of support resources offered by each member of the network were listed in instrumental (tangible aid), informational (advice, information, suggestions), emotional (expressions of empathy, love, trust and caring), socialization (leisure activities), wellbeing and self-esteem (enhancing of self-confidence and wellness) [38)]. Respondents were asked to indicate one or more types of support received by each member of the network. Moreover, two indicators of the connection between SS and SN were created. First, the source of SS was analyzed by weighing, as a percentage, each type of relationship on the total number of persons giving the same support. Second, the amount of each type of support received was calculated as the ratio between the number of persons giving each type of support and the total number of supportive persons (providing at least one function). Finally, the level of satisfaction with each relationship was evaluated on a 4 points Likert scale.

CDQ Depression-IPAT- Clinical Depression Questionnaire[39] encompasses 40 questions or statements. It gives an accurate appraisal of depression level and type. Range:0-3-absence or low depression; 4-7-medium and medium high level of depression; 8-10-high level of depression.

ASQ Anxiety IPAT- Clinical Anxiety Questionnaire [40] encompasses 40 questions. The ASQ is a self-reported measure designed to elicit how people think or feel at one time or another. Ranges:0-3-absence or low anxiety; 4-7-medium and medium high level of anxiety; 8-10-high level of anxiety.

Statistical Methods

The data were analyzed using SPSS 11.5 software (SPSS Inc. Chicago, Illinois). Descriptive analysis was performed to check the distribution and the quality of the data. Differences between the two groups were tested through chi square and t test or ANOVA. Variance analysis (ANOVA) was applied to evaluate the differences between the two groups of subjects (case and control groups) on the Scales SASB, ASQ, and CDQ.

Results

BCg and Cg Differences.

The demographic characteristics are described in Table 1. The following significant difference between BCg and Cg emerged: mean number of component of the network (p=.033); lower size of network in the BCg (p<.001) than Cg; composition of the social network(p<.001): BCg is characterized by the presence

of family rather than other kind of ties (p<.001) while Cg shows a higher presence of friends (p<.005) and coworkers (p<.001); the level of reciprocity in the relationships was significant higher for the Cg (p=.034) (Table 2); ASQ(p=.038) and CDQ (p=.022) were higher in BCg.

BCg ad Cg- SASB Model Clusters-Differences

BCg showed lower scores in cluster 2 (tendency), 3, 4, and higher scores in cluster 5, 6 than Cg subjects: SASB-Cl 3=Love:self-support (p<.001).

SASB-Cl4= Love-control:Self-care(p<.001).

SASB-Cl5=Control:Self-controlling (tendency: p=.048).

SASB-Cl6=Control:hate-Self-criticism-oppression(p=.033).

BC women were less likely to show self-esteem and to care for themselves (Cl2,Cl3), are less prone to protect and take care of themselves (Cl4), exercised more control(Cl5) and more self-critical behaviours than Cg.

BCg:SASB Profile "Not Affiliation and Autonomy"

BC women are less prone to be satisfied with themselves, their lives and their entourages and to cope with stress. They manifest medium low value of autonomy, low self-appreciation and self-esteem, low expression of emotions and needs, control towards themselves. They may have difficulties in being able to achieve emotional and psychic equilibrium in presence of stressful situations. They are less likely to protect themselves and to utilize crisis and stress for their own emotional development. Because of this poor coping they may be more subject to depression (as the distribution of SASB-ranges in the different clusters shows). These patients displayed a low assertiveness and low ability to accept themselves and support themselves (to treat, care for, console and consolidate). Moreover, they may be oppressive towards themselves and may accuse themselves of inadequacy, evoking feelings of guilt and shame, which purport low self-esteem and, a may incur in self-punitive behavior. They may neglect their needs at emotional and physical levels especially in presence of stressful situations.

BCg-Correlation: ASQ, CDQ, SASB, SN, SS

The following correlations emerged:

SASB-Cl1-Autonomy with depression (r=.334,p=.035).

SASB-Cl2=Autonomy and love with:

1. Density of the relationship with leisure companions (r=.703,p=.035);
2. Socialization from leisure companions (r=.386,p=.036).
3. Proportion of leisure companions on important persons (r=-.340,p=.037).

The medium low SASB-Cl2-“Self-accepting and exploring” is correlated with high density relations with leisure companions, characterized by behavior patterns which include treating the other justly, listening to him|her attentively even if there are differences of opinion.

However, the proportion of friends on important persons is inversely correlated with self-acceptance. We can argue that patients with low self-acceptance need to look for cultivating few and dense relations with leisure companions.

SASB-Cl3-Love is correlated with:

1. CDQ Depression (r=-.473;p<.004).
2. Multiplexity-Multiple roles of single persons in relationship with the patient(r=-.324, p=.047).

BC woman who are not completely able to treat, care for themselves and show low capacity for self-esteem, low contact with their needs and emotion, are depressed (negative correlation) and tend to establish bonds with a multiple kinds of exchanges with single persons. Since the multidimensionality is an indicator of strength, the links tend to be strong.

SASB-Cl 4 Love and control – “Self-care and development” is correlated with:

CDQ Depression (r = .473, p < .004);

1. Number of person giving well-being and self-esteem from family(r=-.332,p=.042);
2. Number of person giving well-being from co-worker(r=.344;p=.035).
3. Reciprocity at work (r=.326;p=.046).

BC women show low self-care and more depression. They may have problem in being positively self-constructive, not actively developing their abilities and other important qualities for self-growth and all these intrapsychic behaviors are correlated with depression. They invest especially in family ties for their well-being. In the work area they tend not to establish relations of mutual exchange that it may result in situation of a lower wellbeing, low self–care and difficulties in developing their qualities.

SASB-Cl5=Control- is correlated with:

1. Density of relationship with leisure companions (r=.671;p=.0482)
2. Multiplexity-Proportion multidimensional relationships at work r=.893; p<.001).
3. Socialization from leisure companions (r=.712;p=.032).
4. Proportion of reciprocity at work (r= .707,p<.005).

BC women exercise control on themselves in the context of close relationships with friends and multidimensional relations at work. In the context of work each colleague has many defined roles and these is correlated with SASB-Cl5-self-control exercised by BC women. Reciprocity at works shows, in fact,

a control exercised in the context of exchanging help in work activity. These patient are dependent in their choices from a network of few important persons with a large range of roles.

SASB-Cl6-Control and hate(high level) is correlated with:

1. ASQ–Anxiety (r=.386,p=.026);
2. CDQ-Depression(r=.398,p=.016).

The more patient exercises negative control on herself (by oppressing herself and accuses herself of inadequacy, evoking feelings of guilt and shame), the more is depressed and anxious.

SASB-Cl7-Hate(BCg range-medium low)is correlated with:

1. CDQ-Depression(r=.376,p=.024);
2. Proportion of leisure companions on important persons(r=.360,p=.027);
3. Satisfaction with the relationships with friends (r=.498,p=.017).

BC women are able to be in touch with their needs at emotional and physical levels but in presence of stressful situation they may incur in neglecting behaviors and may become depressed (Cl7-medium low level) investing in especially in leisure relationships considered important without, however, fall into intimacy, which they need.

SASB-Cl8. Hate and autonomy(BCg-range medium-low) is correlated with:

1. ASQ-Anxiety(r=.397;p=.022).

BC women in presence of stress may tend to become disoriented and may be more subject to anxiety.

Discussion

In this study the correlations between SASB personality traits and SN and SS characteristics in BC women in post menopause were evaluated [38] with differences in SN and SS structures between the BCg and Cg. Anxiety, depression and intrapsychic traits of personality are associated to different dimensions of SN and SS.

BC patients have a smaller size network, with fewer social relationships, stronger ties than healthy women (36), characterized by family ties, few other types of bonds, while the healthy women show a greater presence of friends and coworkers. The BC women receiving support only from the family, do not ask help to friends (higher density relationships between family network members), in agreement with other studies showing that severity of chronic illnesses may limits SN and negatively impact the BC women health (25,27,28,36). The patient invests in leisure companionships creating dense bonds, and in multiple roles relations at work, conditioned by reciprocal exchange with the same people, and by established goals. This aspect of SN can be confirmed by the correlations with the following intrapsychic

traits emerged in this study: low assertiveness (Cl1), difficulties in accepting and supporting themselves (to treat, care for, console and consolidate) with low self-esteem (Cl2, Cl3) low ability to actively develop abilities and other qualities for self-growth, (Cl4), self-control Cl5), self-critical behavior (Cl6), and feelings of inadequacy (Cl7).

The accumulated stress is due to adaptation to the roles because of control and self-criticism (Cl5, Cl6). In this particular context they search for emotional and informational support from leisure companions and invest especially in limited bonds, both in private and leisure activities. The attitude of self-control is related to strong bonds and a dense social network. Even if they consider their relationships important, they may experiment difficulties in asking for help and in falling into intimacy because of control in expressing emotion and difficulties and self-critical behaviors (Cl2,Cl5, Cl6) [25, 28]. The same considerations, made above, are applied to the workplace relationships where they tend to establish reciprocal links.

So all these modalities of SS are correlated to intrapsychic control, (Cl5), low self-esteem, medium low self-care, passive adaptation (Cl2,Cl3,Cl4) and anxiety and depression, the last two linked to the difficulty of being in intimate relation with others and themselves, with the consequence of having difficulty in getting the emotional interpersonal support they need[19].

The high levels of anxiety and depression suggest that the period after diagnosis is particularly difficult for these women. Depression can be not only a reaction to the stressful events (onset of the disease, restructuring of life to follow medical therapy), but we can hypothesize that BC women were predisposed to depression even before the disease onset as the SASB “not-Affiliation and Autonomy profile” indicates. Studies showed an association between anxiety, depression and self-blame and shame behaviors (SASB-Cl6, Cl7) during the first year after breast cancer diagnosis, associations that can often be markers of the recurrence and previous psychological disorders [7,9]. For all these reasons we hypothesize that problematic personality traits and limitation in social relationships linked to them may hamper the patient’s ability to receive the needed helps and cure, and the adaptation to the disease condition and to the medical treatment and its side effects [21].

Our conclusion is that patients with difficulties in interpersonal relationships and problematic intrapsychic traits should undergo closer cancer surveillance. The ability to deal with relationships, even problematic ones, may be a resource for reducing vulnerability to distress or buffering the adverse psychological effects of illness. Studies showed the amount of social support available reducing negative health outcome [31. So patients with “not Affiliation and Autonomy” SASB-profile should be regarded as having an high risk of worse social support and depression and could be followed up and screened[35].

Clinical implication

Multidimensional and psychotherapeutic interventions should be based on the screening of these problematic behaviors with the aim of modifying unhealthy intrapsychic experience and promoting the

development of a better quality of life [30,36]. Psychotherapeutic interventions should focus on changing the intrapsychic modalities of low autonomy, low self-acceptance, high control, high self-critical behavior by developing a better contact with the patient emotions and needs[23,35].

Study limitations

The small sample is not representative of breast cancer patients in general. Second, all the subjects in this study were BC patients, and care is needed when extrapolating these results to other diseases.

Declarations

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Ethics approval: he study was conducted according to the guidelines of the Declaration of Helsinki, and approved by Bioethical Advisory Committee of IRCCS-INRCA, Italy: code no. 19019.
Consent to participate: Informed consent was obtained from all subjects involved in the study.
Consent for publication: Consent was obtained from all the authors.

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Tables

Table 1. Sample Characteristics

	Control group	Breast Cancer group	p.
N.	74	58	
Age(Mean ± SD)	54.72 ± 7.8	54.38 ± 8.2	.823
Education			.480
Primary education	53.1%	64.6%	
Secondary education	31.3%	20.8%	
Tertiary education	15.6%	14.6%	
Marital status			.463
Married	75.0%	83.3%	
Separated/Divorced	6.3%	2.1%	
Single	6.3%	8.3%	
Widowed	12.5%	6.3%	
Number of important persons Mean ± SD			.033
Mean ± SD)	10.1 ± 5.5	8.0 ± 4.5	
Range	3-31	2-24	
Network composition			
Kins	58.2%	70.8%	.003
Friends	26.5%	20.9%	.130
Co-workers	9.8%	3.2%	.004
Leisure companions	5.5%	5.1%	.890
Density (Mean ± SD)	.84 ± .2	.90 ± .2	.235
Reciprocity (Mean ± SD) - Total	.79 ± .2	.67 ± .3	.034
Multiplexity (Mean ± SD) - Total	.76 ± .2	.67 ± .3	.110

Table 2. **SASB Intrapsychic behaviours by Groups**

	Control group	Breast Cancer Group	p.
SASB Intrapsychic levels			
SASB Cluster (Cl) 1 Autonomy-assertive and separating	6,5 ± 1,29	6,1 ± 1,31	NS
SASB Cluster (Cl) 2 - Autonomy and love-self-accepting and exploring	6,2 ± 1,2	5,2 ± 1,44	p=.058
SASB Cluster (Cl) 3 Love – Self-supporting and appreciative	5,8 ± 1,09	5,2 ± 1,4	p< .001***
SASB Cluster (Cl) 4 Love and control – Self-care and development	4,9 ± 1,4	5,1 ± 1,31	p< .005. *
SASB Cluster (Cl= 5 Control Self-regulating and controlling	1,4 ± 1,28	2 ± 1,65	p=.048
SASB Cluster (Cl) 6 Control and hate - Self-critical and oppressive.	1,4 ± 1,58	1,7 ± 1,3	p< 0.05. *
SASB Cluster (Cl) 7 Hate Self-refusing and annulling.	2,3 ± 1,53	2,4 ± 1,28	NS
SASB Cluster (Cl) 8 Hate and autonomy –Self-negligent and mentally absent.	4,5 ± 1,09	4,1 ± 1,4	NS
Level of Anxiety	4.92 ± 1.8	5.74 ± 2.1	P<.005
Level of Depression	5.28 ± 2.0	6.23 ± 2.1	P<.001

Note: Significant level: * p< 0.05. ** p< 0.01. *** p< 0.001

Table 3. Correlation between ASQ, CDQ, SASB (Intrapsychic levels) and Social Network-Social Support characteristics in the Breast cancer group

	Social network-social support variables	r	p-value
SASB Intrapsychic levels			
SASB Cluster (Cl) 1 Autonomy-assertive and separating	Depression	r= .344	p=.035
SASB Cluster (Cl) 2 - Autonomy and love-self-accepting and exploring	Density of the relationship with leisure companions	r = .703	p = .035
	Socialization from leisure companions	r = .386	p = .036
	Proportion of leisure companions on important persons	r = -.340	p = .037
SASB Cluster (Cl) 3 Love – Self-supporting and appreciative	Depression	r = -.473	p = .004
	Multiplexity- Proportion of multidimensional roles on total relationships	r = -.324	p= .047
SASB Cluster (Cl) 4 Love and control – Self-care and development	Depression	r = -.473	p = .004
	N. of persons giving well-being and self-esteem from family	r = -.332	p = .042
	N. of persons giving well-being and self-esteem from co-workers	r= .344	p=.035
	Reciprocity from co-workers	r = .326	p = .046
SASB Cluster(Cl)5 Control Self-regulating and controlling	Density of the relationship with leisure companions	r = .671	p = .048
	Multiplexity- Proportion of multidimentional relationships at work	r = .893	p < .001
	Socialization from leisure companions	r =0.712	p = 0.032
	Proportion of reciprocity at work	r = .707	p < .005
SASB Cluster (Cl) 6 Control and hate - Self-critical and oppressive.	Anxiety	r= . 386	p = .026

	Depression	r = .398	p = .016
SASB Cluster (Cl) 7 Hate Self-refusing and annulling.	Depression	r = 0.376	p = .024
	Proportion of leisure companions on important persons	r=0.360	p=.027
	Satisfaction with the relationship with friends	r = .498	p = .017
SASB Cluster (Cl) 8 Hate and autonomy –Self-negligent and mentally absent.	Anxiety	r = . 397	p = .022

Note: Significant level: * p< 0.05. ** p< 0.01. *** p< 0.001