Anxiety, perceived stress and coping strategies in nursing students: a cross-sectional correlational descriptive study

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Abstract

Background: Although nursing students generally have lesser responsibility in the care of patients compared to professional nurses, clinical training is recognized as being a stressful experience for many students. The study objective was to investigate the relationship between anxiety, perceived stress and coping strategies used by nursing students during their clinical training. Methods: A cross-sectional correlational descriptive study. The sample consisted of 190 nursing students enrolled in the Nursing Faculty of Ciudad Real University in Spain. Participants provided data on background characteristics and completed the following instruments: the Perceived Stress Scale; the State-Trait Anxiety Inventory and the Coping Behavior Inventory. Relationships between scores were examined using Spearman's rho. Results: The mean age of participants was 20.71+ 3.89 years (range 18-46 years). Most students (47.92%) indicated a moderate level of stress with a mean PSS score of 22.78 (±8.54). Veteran nursing students perceived higher levels of stress than novice students. The results showed a significant correlation for perceived stress and state anxiety (r= 0.463, p<.000) and also for trait anxiety (r=0.718, p<.000). There was also a significant relationship between the total amount of perceived stress and the following domains of the Coping Behavior Inventory: problem solving, self-criticism, wishful thinking, social support, cognitive restructuring and social withdrawal. In the current study, the coping strategy most frequently used by students was problem-solving, followed by social support and cognitive restructuring. Conclusions: Nursing teachers and clinical preceptors/mentors should be encouraged to develop programs that could help prepare nursing students to cope with the challenges they are about to face during their clinical placements.

Background

Research on stress levels in health professionals is an issue of current interest that merits concern (Thimmapuram et al., 2017). This is not only due to the many causes of intrinsic stress referred by healthcare professionals, but also because it is worth considering the negative and chronic effects that stress can have in the same over time (Chang et al., 2005).

In nursing, the subject of stress has received much attention in the literature, and continues to be the topic of many studies (Adriaenssens et al., 2017; Hamaideh et al., 2016). In general, stress and anxiety are commonly identified by nursing students as being a constant source of worry (Boulton and O'Connell, 2017; Patterson, 2016).

According to several studies, the practical part of a nurse's education is much more stressful then the academic part and the perceived lack of knowledge and skills is considered to be one of the common stressors for many students (Yildiz et al., 2014). Furthermore, the first experience in clinical practice includes stressors such as fear of making mistakes, having to handle emergency situations, irregularities in clinical practice and visiting specialized units(Zupiria Gorostidi et al., 2007b).

Generally, nursing students do not have the same responsibility in the individual care of patients in clinical practice as registered nurses, however they are exposed to some of the same stressors. Examples of the same include the relationships with other professionals, the notorious ranking that exists in hospitals, difficult situations regarding the treatment of patients and dealing with family members and the way they experience the death of the patients they care for (Watson et al., 2013). Furthermore, nursing students coexist with other stressors that are typical considering their role as students, such as those related with their academic program

and their role as nursing students (Priesack and Alcock, 2015). This is because, as opposed to other degree programs, nursing students are in touch with the job market which requires a certain responsibility in the wellbeing of their patients, distancing them, at times from the student campus life and especially, from normal social activities enjoyed by their same-age colleagues.

Interestingly, low or moderate levels of stress may enhance students' motivation, leading to greater perseverance when studying and achieving future goals (Pryjmachuk and Richards, 2007). Conversely, high levels of stress can have a negative influence on students, leading to depression and despair, and therefore affecting the health and academic level of students (Lazarus and Folkman, n.d.). Stress is unavoidable and, in most cases, it is difficult to overcome, however, a good coping strategy could help students improve their academic results (Pagana, 1989).

Longitudinal studies have shown that stress levels in nursing students may increase or decrease during their educational training depending on coping behavior strategies. However, as noted by Jimenez et al., these differences regarding stress levels over the course of professional training should be considered with caution, as different programs exist in different countries. Whereas some studies identify the first year as the most stressful year for students (Zupiria Gorostidi et al., 2007a), for others, the third year is the most stressful regarding the clinical aspect (Edwards et al., 2004; Evans and Kelly, 2004; Timmins and Kaliszer, 2002). However, other studies do not specify the year, revealing results in which stress increases according to the training or the academic year (Deary et al., 2003; Watson et al., 2008) or decreases as the student becomes more trained (Lo, 2002). Besides these differences, coping strategies vary according to the characteristics of the individual and the context where the stressors are found.

The university faculty should not only be aware of the stress levels of students, but also consider how they manage this stress, i.e. whether they use good and effective tools for coping with the same, as this will be key in their development as a nurse. Getting to know the level of stress and/or anxiety that is experienced by our students is important to determine which negative effects should be changed in their behaviors to improve coping. Therefore, the main aim of this study was to investigate the relationship between anxiety, perceived stress and coping strategies used by nursing students during their clinical training.

Methods

Study design, setting and participants.

A cross-sectional descriptive and correlational design was used. Students were recruited from graduate levels of the Ciudad Real Nursing Faculty of Castilla-La Mancha University during the 2017/18 academic year. Currently, in Spain the nursing degree lasts four years with a total of 240 credits, under the European Credits Transfer System (ETCS). At the University of Castilla-La-Mancha (UCLM), during the first academic year, nursing students only have academic subjects (theoretical-practical) which are taught at the Faculty, having no contact at this point with the hospital world. After the second year, once the basic core subjects are taught, the student begins clinical placements. These start in the first semester of the second year and end in the fourth year with subjects that are purely care-based and which take place at the hospital (Anex 1).

A prior sample size calculation was not performed, rather the sample size was based on the entire population of students, as described previously. Clinical placements are an essential part of the acquisition of competencies and skills for nursing students, constituting an important element of their education.

The eligibility criteria for this study were as follows: all participants were students enrolled in an academic year of the nursing degree course taught at the university (except first year students). Participants must have been present in the classroom when the researcher visited to collect data and informed consent was required for participation. The population of nursing students studying at the university was 340 students. In total, 192 students agreed to participate in the research. The mean age of participants was 20.71 ± 3.89 years (range 18-46 years). Most students were female (86.5%) and 17.7% of the students had previous training in health sciences. Up to 52.1% of students were undergoing their first clinical placement in the second year.

Data collection instruments.

Data were collected from the students in the study group using a 20- minute online self-report questionnaire containing the following measures:

-*Demographic characteristics*: The demographic questionnaire was constructed by the researchers and was based on the recent literature. This included items such as age, gender, relationship status, study year of the nursing degree etc.

-*Perceived stress scale (PSS).* The PSS-14 was designed for measuring the degree to which daily life situations are evaluated as stressors. This scale is currently the most widely used psychological instrument for measuring the perception of stress (Lorig et al., 1989). The PSS consists of multiple choice questions measuring stressful experiences and responses to stress over the previous four weeks. The European Spanish version PSS (14-item) has demonstrated adequate reliability (internal consistency, alpha = .81) (Remor, 2006). Our study demonstrated an alpha = .87. Individual stress scores from the PSS-14 were calculated, then the quartiles were determined and used as the basis for classifying participants' stress level. Each item was rated on a five-point Likert-type scale (0=never to 4= very often) taking into account that items 4, 5, 6, 7, 9, 10, 13 are scored inversely. The range for total scores on the PSS-14 is from 0 to 56. Stress scores below the 25th percentile (0 to 17) were interpreted as low stress, scores between the 25th and 75th percentile (18 to 28.5) were interpreted as moderate stress and scores above the 75th percentile (28.6 to 56) were interpreted as high stress.

- *The State-Trait Anxiety Inventory (STAI)* (Spielberger et al., 1986) is one of the most used tools for assessing anxiety, both in clinical contexts as well as in the general population. Internal consistency coefficients for the Spanish version of the scale have ranged from .86 to .95 (Spielberger et al., 2008). In our sample we obtained an alpha of 0.91 for STAI State and an Alpha of 0.86 for STAI trait. The STAI has 40 items allocated to two subscales within this measure. First, the State Anxiety Scale (S-Anxiety) evaluates the current state of anxiety and the Trait Anxiety Scale (T-Anxiety) evaluates relatively stable aspects of "anxiety proneness," including general states of calmness, confidence, and security (Spielberger et al., 1970). The score of each subscale is calculated taking into account that items 1,2,5,8,10,11,15,16,19,20 of the STAI state subscale and items 21,26,27,30,33,36,39 of STAI trait are inverse.

-*The Coping Strategy Inventory (CSI)* is a self-report questionnaire designed to assess coping thoughts and behaviors in response to a specific stressor(Tobin, 2001). This questionnaire is based on the Lazarus "Ways of coping" questionnaire. We used the existing Spanish version (Cano-García et al., 2007) since this has proven to be a valid and reliable measure of the CS used in many stressful situations. In this version, excellent psychometric properties were obtained that even surpassed those of the original study with eight factors that

explained 61% of the variance with only 40 items (compared to the 72 items of the original instrument with only 41% variance). The internal consistency coefficients were between .63 and .89 (Martínez, 2007) and between .64 and .85 in our sample for each primary subscale. Each item on the CSI may be scored using a 5-point Likert format, and it has 8 primary subscales that compute in Higher Order Subscales (4 secondary and 2 tertiary). The primary subscales of the CSI are: Problem Solving, Self-Criticism, Expression of Emotions, Wishful Thinking, Social Support, Cognitive Restructuring, Problem Avoidance, and Social Withdrawal. The secondary subscales are: Problem Focused Engagement (Problem Solving and Cognitive Restructuring); Emotion Focused Engagement (Social Support and Expression of Emotions); Problem Focused Disengagement (Problem Avoidance and Wishful Thinking); and Emotion Focused Disengagement (Social Withdrawal and Self-Criticism). Finally, the tertiary subscales are Engagement (Problem and Emotion Focused Engagement) and Disengagement (Problem and Emotion Focused Disengagement).

Statistical data Analyses

Data analyses were carried out using the Statistical Software Package for the Social Sciences (SPSS) version 23.0. Data were examined by calculating the means, standard deviation (±SD), absolute and relative frequencies and percentages, in order to generate a descriptive statistical analysis. In order to measure the internal consistency and homogeneity of the three questionnaires, the Cronbach's alpha test was performed, accepting a coefficient ≥0.70 as an ideal value. The individual analysis of each item was carried out using the Homogeneity Index which was assessed with the Spearman correlation coefficient. Each item with a coefficient >0.30 was considered useful for evaluating the attribute. Additionally, there were no items that did not fulfil this condition. After checking the non-normal distribution of the total scores of the scales in our sample by the Kolmogorv-Smirnof test, the relevant non parametric tests were used for the comparison of means between groups according to sex, course, clinical placement and previous training in Health Sciences.

Correlations between the scores of the different scales used were assessed using the Spearman's rho correlation coefficient. The accepted confidence interval was 95% and the significance level for all analyses was set at $p <$ .05; moreover, with the significant correlation between perceived stress scale and STAI and CSI a hierarchical regression model was applied to assess the independent variables that contributed significantly to the variance in the score on the Perceived Stress Scale. These independent variables were entered into the regression model in 5 steps. Changes in R^2 were reported after each step of the regression model to further determine the association of the additional variables. The significance criterion of the critical F value for entry into the regression equation was set at p < .05 being considered significant in all tests.

Results

Descriptive results for perceived stress scale, and dimensions of anxiety and coping scale.

The mean PSS score was 22.78 (±8.54), indicating a moderate level of stress, and the stress scores ranged from 5 to 47 out of a possible 56. In our study, most participants (47.92%) indicated a moderate level of stress. The Anxiety State score was 17.64(±9.01) classified as 'no problem' with a minimum score of 3 and maximum of 54 and Anxiety trait of 20.13 (±8.74) classified as 'mild anxiety' with a minimum score of 4 and maximum of 46.

Comparative analysis between PSS, STAI and clinical placement.

Regarding type of clinical placements, no significant differences were found when comparing the mean perceived stress (p=.352) using ANOVA. However, significant differences were identified in relation to state anxiety (p=.002). When comparing clinical placements two by two, statistically significant differences were identified between Primary Care and Special Services (15.9 ±8.75 vs 23.77± 11.16, p=.006), Geriatrics and Special Services (16.18± 7.53 vs 23.77± 11.16, p=.004) and Internal Medicine and Special Services (16.14± 7.75 vs 23.77± 11.16, p=.001. 100% of the students who displayed severe anxiety in the state STATE were in specialized services.

Relationships between gender, academic year and dimension of CSI.

The CSI displays significant differences between gender for the dimensions Expression of emotion, Social support and Problem avoidance, as, in all cases, the mean of these scores was higher for the female sex. However, for the total score on the scale, despite the fact that the mean was higher in women (23.22±8.55) than in men (20±8.04), significant differences were not found between sexes (p= .069) for the total scale score. Regarding the students' academic year, the dimensions that were found to be statistically significant were wishful thinking and social withdrawal. The total mean score of the test for students in their second year was 21.30±8.65 and the total mean score for students in their third year was 24.40±8.16, the statistical analysis showed significance (p= 0.009) (Table 3).

Correlation and hierarchical regression analysis

A Spearman's rho correlation was used to investigate the relationship between total perceived stress and anxiety (state and trait) and the perceived stress scale with the total score on the CSI and all subscales. The results displayed a significant correlation for the total on the PSS and the State STAI (r = .463, p<.01) and for the total PSS and the Trait STAI (r =.718, p<.01). Regarding the stress perceived and the coping strategies, the results revealed a significant relationship between the total perceived stress and the following domains: problem solving (r =-.452, p<.01), self-criticism(r =.408 p<.01), wishful thinking(r =.459, p<.01), social support(r =-.220, p<.01), cognitive restructuring(r =-.375, p<.01), and social withdrawal(r =.388, p<.01), of the CSI. (Table 4).

Table 5 shows the hierarchical regression analysis developed in this study. For the first step the adjustment index of the model was significant F (1, 191) 212.186, p < .01 and the variable anxiety trait was a significant predictor of perceived stress scale (B = .726, t = 14.56, p < .01). the significant variable included at the second model were: anxiety trait (B = .624, t = 12.32, p < .01) and wishful thinking (B = .266, t = 5.26, p < .01) and the adjustment was F (2, 191) 134.82, p < .01.; for the third model: anxiety trait (B = .564, t = 11.28, p < .01) and wishful thinking (B = .263, t = 5.47, p < .01) and cognitive restructuring (B = -.211, t = -4.53, p < .01) and the adjustment was: F (3, 191) , 106.01 p < .01; for the fourth model anxiety trait (B = .486, t = 8.98, p < .01) and wishful thinking (B = .269, t = 5.72, p < .01), cognitive restructuring (B = -.215, t = -4.75, p < .01) and anxiety state (B = .162, t = 3.30, p < .05) and the adjustment was: F (4, 191) 86.44, p < .01; and finally for the step 5: anxiety trait (B = .450, t = 8.15, p < .01) and wishful thinking (B = .268, t = 5.79, p < .01), cognitive restructuring (B = -.133, t = -2.41, p < .05), anxiety state (B = .170, t = 3.52, p < .01), and problem solving (B = -.147, t = -2.56, p < .05) and the adjustment was: F (5, 191) 72.53, p < .01. The fifth model explained 66.1% of the variance in perceived stress.

Discussion

This study was conducted to assess nursing students' perceived stress levels and its association with anxiety as well as the coping behaviors used to reduce the effect of stress during clinical training.

Overall, 47.92 % of the students were found to experience moderate level of perceived stress and only (25%) perceived a high degree of stress. Furthermore, the correlation between perceived stress and anxiety was significant in the present study, i.e. students with high scores on perceived stress had higher scores for anxiety.

The prevalence of stress among nursing students found in the literature is variable, which could be due to the different academic programs available worldwide and the use of different scales for measuring the same (Gazzaz et al., 2018; McCarthy et al., 2018). However, stress levels may also become affected because of different perceptions regarding stress across cultures and among different individuals. Lazarus and Folkman defined stress as "a particular relationship between the person and the environment that is appraised by the person as taxing or exceeding his or her resources and endangering his or her well-being"(Lazarus and Folkman, n.d.). Besides these academic and personal differences, according to this definition of stress, it is important to include the effects of the environment, and more concretely in our case, the different clinical placements the students visited throughout their training, on the levels of stress or anxiety presented by the student. The results of other studies suggest that mental health nurses are much more vulnerable to stress and have fewer resources to face the same (John Galvin et al., 2015; Tully, 2004). In this sense, and despite our study not being a specific study on mental health nurses, our students displayed higher levels of stress precisely when they were in mental health services. Regarding other specialized services such as intensive care or emergency care, our study suggested that the students had more levels of anxiety and stress during this clinical placement units.

Regarding the year of studies, our findings support previous studies where the students with the most experience displayed higher levels of anxiety, whereas the most inexperienced showed lower levels of stress and anxiety (Deary et al., 2003; Watson et al., 2008). However, this interpretation of data should be linked to the previously cited findings, i.e., considering the clinical placements performed by the students. For example, clinical placements in more specialized services are usually completed during the later years, whereas during the first years of study, training takes place in more general services requiring more basic competencies for care and patient responsibility. Therefore, students who have more extensive training, but who are also required to have a greater level of competencies and skills during patient care are those that are exposed to a greater level of anxiety and stress. However, as suggested by Jimenez et al.(Jimenez et al., 2010), it is important to exercise caution in these interpretations as, in this sense, the different training programs, despite being based on the ECTS system, should not be centered only on the number of credits that should be completed each year, but they should insist on coordinating and developing parallel competencies over time, as differences in training programs exist even within the same country.

In the current study the coping strategies most frequently used by students were problem-solving followed by social support and cognitive restructuring. According to Folkman and Lazarus, problem solving is one of the more effective ways to deal with stress as it focuses on behaviors in order to manage or alter the problem(Lazarus and Folkman, n.d.). Problem solving has been found to be the most utilized coping strategy in different studies with nursing students (Al-Gamal et al., 2018; Al-Zayyat and Al-Gamal, 2014; Chen and Hung, 2014), despite the fact that these studies have used a measurement scale for facing stress that is different to the

one used in this study. In terms of the relationship between perceived stress and coping strategies, our findings indicate that among these three domains (problem solving, cognitive restructuring and social support) an inverse correlation exists, indicating that people who suffer less stress, will use these strategies more. Similarly, the positive correlation with the following domains shows how people with greater stress have more anxiety trait and state and use strategies such as wishful thinking, self-criticism, social withdrawal and problem avoidance. Results of this study showed that the greatest predictor of perceived stress were anxiety trait. As for the domains or strategies used to cope with stress, in our study, the use of certain strategies such as problem solving and cognitive restructuring, were found to be considered predictors of less stress while the use of wishful thinking appeared as a predictive factor of greater stress. In other studies, using other coping tools, they found a positive relationship in terms of protection regarding the mental health of the student, in those students who used an optimistic strategy. In this sense, it may be that our study sample did not understand culturally speaking what wisful thinking meant or that they did not know strategies really framed in this state of optimism or illusion and that on the one hand could be a protective factor in terms of mental health but that are not giving truly optimal results in terms of reducing the stress they suffer (Karaca et al., 2019). Both teachers and mentors should be responsible for the proper implementation of coping strategies as basic tools in the skills to be acquired during their competencies in the clinic.

In a qualitative study by Lopez V et al., nursing students of a University in Singapore reported that talking about their negative emotions with their peers and positive reframing of their negative circumstances were the most used strategies when facing perceived stress (such strategies would be framed within the domains of social support and/or expression of emotion). However, relationships between students and their clinical educators and nurses and medical staff have been widely reported in the literature (Al-Zayyat and Al-Gamal, 2014; Bagcivan et al., 2015; J. Galvin et al., 2015; Jimenez et al., 2010), as being difficult relationships based on a lack of emotional or social support.

Implications for education

In this sense, and in line with other research, the study of coping strategies appears instrumental for the prevention of stress and it is essential that these strategies should begin to be trained within the university facilities. These programs could help prepare nursing students to cope with the challenges they are about to face during their clinical rotations. For example, in Spain no university uses a nurse student peer mentoring or support program. This peer mentoring program, where third year students mentor first year students, was implemented in other foreign universities in order to reduce the anxiety experienced by first year students nurses and to facilitate a smooth transition to clinical practice situations (Hogan et al., 2017). Other strategies have demonstrated to be effective in the management of stress and anxiety in nursing students, such as the use of biofeedback and mindfulness and meditation interventions (Ratanasiripong et al., 2015) or emotional freedom techniques (Patterson, 2016).

Limitations

This study has limitations that must be considered when interpreting these results. First, these findings cannot be generalized, as the study was conducted in nursing students of only one faculty of nursing and therefore, the socio-demographic structure of the sample was not necessarily the same as that of other faculties in Spain. The

performance of longitudinal studies conducted over several academic years is recommended as these could show changes in perceived stress over time. Further studies based on qualitative techniques would provide more detail regarding the stressor factors and its relationship with levels of anxiety and coping strategies. However, despite these limitations, the results of this study appear to concur with previous findings on this topic.

Conclusions

In light of these findings, we recommend that the teaching of positive coping strategies should be implemented in the nursing curriculum *prior* to clinical placements. Qualitative research focused on the student's perception on their clinical experience may be helpful for developing an effective clinical teaching strategy in nursing education.

Abbreviations

ETCS: European Credits Transfer System.

PSS: Perceived stress scale

STAI: The State-Trait Anxiety Inventory

CSI: The Coping Strategy Inventory

Declarations

Ethics approval and consent to participate.

Ethical approval for the study was obtained from the Research Ethics Committee - number C- 121. All procedures were followed in accordance with the Helsinki Declaration. Permission to conduct the study was obtained from the management of the Nursing Faculty. Before data were collected, all students were informed of the purpose of the study and informed written consent was obtained. In addition, all participants were assured that their anonymity and confidentiality would be maintained and that they were entitled to drop out of the study at any time.

Consent for publication

This manuscript does not include any identifiable details, images, or videos relating to an individual person.

Availability of data and material

The datasets used and/or analyzed during the current study are available from the corresponding author on reasonable request.

Competing interests.

The authors declare that they have no competing interests.

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Authors´ Contributions

Study conception and design. O-Z MD., F-M E., P-F ML.,

Data collection, statistical expertise, analysis and interpretation of data. O-Z MD., F-M E., P-F ML., G-S FJ., A-S A., F-M JJ

Manuscript preparation, supervision, administrative support and critical revision of the paper. O-Z MD., F-M E., P-F ML. G-S FJ., F-M JJ, A-S A.

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Anex 1

Anex 1. Clinical training progression within the university training program

	1st semester	2nd semester
2nd year	Clinical training I (6ETCs)	Clinical Training II(6ETCs)
3rd year	Clinical training III (6ETCs)	Clinical training IV(6ETCs)
		Clinical training V (6ETCs)
4 year	Practicum I (25 ETCs)	Practicum II (25 ETCs)

Tables

Table 1. Means, standard deviation and skewness and kurtosis for PSS, dimensions of STAI and CSI.

	Min	Max	M	SD	Skewness	Kurtosis
Perceived stress	5.00	47.00	22.786	8.5351	.303	.155
Anxiety state	3.00	54.00	17.635	9.011	.894	.813
Anxiety trait	4.00	46.00	20.135	8.739	.541	-.126
Problem solving	4.00	20.00	15.088	3.4394	-.450	-.072
Self criticism	.00	20.00	6.546	4.5657	.484	-.152
Expression of emotion	.00	20.00	9.880	4.3740	-.127	-.406
Wishful thinking	.00	20.00	9.453	5.1580	.248	-.863
Social support	.00	20.00	13.90	4.6122	-.708	.067
Cognitive restructuring	2.00	20.00	12.510	3.7861	-.212	-.188
Problem avoidance	3.00	13.00	7.364	1.6219	-.018	.560
Social Withdrawal	.00	19.00	6.281	3.7042	.495	.012

Table 2. Comparison of the level of stress and anxiety classified by clinical placement type

	STAI STATE (Mean±SD)	PERCEIVED STRESS (Mean±SD)
Geriatrics	16.18± 7.53	24.35±8.65
Mental health	19.40± 10.72	25.40±6.87
Primary care	15.9 ±8.75	22.33±7.30
Internal medicine	16.14± 7.75	21.13±9.08
Specialized services	23.77± 11.16	23.64±9.00
Mother-child health	18.27 ±7.92	24.09±7.03
TOTAL	17.64±9.01	22.79±8.54

Table 3. Bivariate analysis of the mean score for the dimensions of the CSI compared by academic year and gender

	Gender	(M, SD)	p value a	Year	(M-SD)	p value a
Problem solving	Female	15.22±3.42	.208	2nd	15.33±3.49	.287
	Male	14.23±3.50		3rd	14.83±3.39	
Self-criticism	Female	6.59±4.61	.684	2nd	5.98±4.35	.091
	Male	6.27±4.30		3rd	7.16±4.74	
Expression of emotion	Female	10.23±4.34	.006**	2nd	10.14±4.28	.584
	Male	7.61±3.98		3rd	9.60±4.48	
Wishful thinking	Female	9.59±5.25	.348	2nd	8.62±5.28	.010*
	Male	8.58±4.51		3rd	10.36±4.90	
Social support	Female	14.14±4.65	.032*	2nd	14.01±4.65	.725
	Male	12.38±4.15		3rd	13.78±4.60	
Cognitive restructuring	Female	12.68±3.87	.083	2nd	12.51±3.83	.883
	Male	11.42±3.07		3rd	12.51±3.76	
Problem avoidance	Female	7.47±1.56	.048*	2nd	7.47±1.71	.382
	Male	6.69±1.89		3rd	7.25±1.52	
Social withdrawal	Female	6.27±3.66	.932	2nd	5.50±3.30	.004*
	Male	6.34±4.03		3rd	7.13±3.94	

*p<.05; ** p < .01; a = U Mann- Whitney

Table 4. Spearman's correlation coefficient between perceived stress, STAI state and trait and dimension of CSI.

	1	2	3	4	5	6	7	8	9	10
1. Perceived stress										
2. Anxiety state	.463**									
3. Anxiety trait	*.718***	.264**								
4. Problem solving	-.452**	.050	-.180*							
5. Self criticism	*.408***	.144*	.316**	-.281**						
6. Expression of emotion	-.086	.051	-.063	.269**	.059					
7. Wishful thinking	*.459***	.078	.313**	-.142	.534**	.196**				
8. Social support	-.220**	.031	-.088	.439**	-.042	.591**	.085			
9. Cognitive restructuring	*-.375***	.003	-.145*	.573**	-.214**	.298**	-.071	.471**		
10. Problem avoidance	.105	.423**	.461**	.053	.168*	.106	.120	.004	-.053	
11. Social Withdrawal	*.388***	.138	.289**	-.266**	.396**	-.104	.424**	-.275**	-.115	.091

* p < .05. ** p < .01.

Table 5. Summary of Stepwise Regression Analyses to determine predictors of Perceived stress.

Independent Variables	B	SE B	β	t
Step 1				
Anxiety trait	.709	.049	.726	14.56**
Step 2				
Anxiety trait	.609	.049	.624	12.32**
Wishful thinking	.440	.084	.266	5.26**
Step 3				
Anxiety trait	.550	.049	.564	11.28**
Wishful thinking	.436	.080	.263	5.47**
Cognitive restructuring	-.475	.105	-.211	-4.53**
Step 4				
Anxiety trait	.474	.053	.486	8.98**
Wishful thinking	.445	.078	.269	5.72**
Cognitive restructuring Anxiety state	-.485	.102	-.215	-4.75**
	.153	.046	.162	3.30*
Step 5				
Anxiety trait	.439	.054	.450	8.15**
Wishful thinking	.444	.077	.268	5.79**
Cognitive restructuring Anxiety state	-.300	.124	-.133	-2.41*
Problem solving	.161	.046	.170	3.52**
	-.364	.142	-.147	-2.56*

*R^2= .528 for step 1; R^2=.588 for step 2; R^2=.628 for step 3; R^2=.649 for step 4; R^2=.661 for step 5. * p < .05; **p < .01*

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