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Association of Personality Traits with Psychological Factors of Depression, Anxiety, and Psychological Distress: A Community Based Study

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Quantitative Study

Abstract

Background: Personality can be defined as the dynamic arrangement of psycho-physical systems. This study was conducted with aim to assess the prevalence of personality traits and their relation with psychological factors in the general population.

Methods: The present research was designed as a cross-sectional study. We extracted our data from the framework of the Study on the Epidemiology of Psychological, Alimentary Health, and Nutrition (SEPAHAN), in 2013. Participants (4763 adults) were selected from among healthy people in 20 counties across Isfahan Province, Iran, through convenience sampling. Personality traits and psychological factors including depression, anxiety, and psychological distress were assessed using the NEO Five-Factor Inventory (NEO-FFI), Hospital Anxiety and Depression Scale (HADS), and General Health Questionnaire (GHQ). Binary logistic regression analysis was used to find the association among the personality traits and psychological variables. Odds ratios were reported with the corresponding 95% confidence intervals.

Results: The mean score ± SD of neuroticism, extraversion, openness, agreeableness, and conscientiousness were 18.72 ± 7.87, 29.03 ± 7.08, 24.04 ± 5.28, 31.05 ± 6.37, and 36.26 ± 7.22, respectively. In depressed and anxious subjects and subjects with high psychological distress, the score of neuroticism was higher, but the scores of other factors were significantly lower ($P < 0.05$). Through multivariate analysis, high levels of neuroticism and low levels of extraversion and agreeableness were associated with being depressed, anxious, or having significantly high psychological distress.

Conclusion: In conclusion, in our population, high levels of neuroticism and low levels of agreeableness and extraversion were associated with being depressed or anxious, or having high psychological distress.

Keywords: Personality, Trait, Depression, Anxiety, Stress

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Introduction

Personality is an individual's patterns of feelings, thoughts, and behavior. It can be defined as the dynamic arrangement of psycho-physical systems. Human behavior is determined by personality, and depends on the emotional state and existing social or environmental situation of the individual (Ozer, & Benet-Martinez, 2006). Behavior modification is influenced by personality traits and this characteristic is correlated with individual health consciousness (Kikuchi et al., 1999). Stable psychological characteristics, such as impulsivity, anxiety, affiliation, dominance, or persistence, differ from one human being to another. Personality characteristics are present since adolescence or early adulthood, and are to some extent heritable, and mainly determine the biography of the individual (Bienvenu et al., 2001).

Usually, personality is measured on the basis of the five factor model (FFM) which has strong empirical support and is used to distinguish between personality profiles of healthy individuals (Chapman, Lyness, & Duberstein, 2007b). The five factors consist of neuroticism, extraversion, openness, agreeableness, conscientiousness. Neuroticism (N) is the tendency to experience negative affect and affective instability (anxiety, angry hostility, depression, impulsivity, and vulnerability). Extraversion (E) is the disposition toward energetic activity and sociability (warmth, gregariousness, assertiveness, excitement-seeking, and positive emotion). Openness (O) is the interest in experiencing novel people, ideas, and things, as well as intellectual and esthetic tendencies (fantasy, feelings, values). Agreeableness (A) is a tendency toward warmth and amiability (altruism, trust, compliance, tender-mindedness, straightforwardness, and modesty). Conscientiousness (C) entails qualities such as diligence, goal-orientation, fastidiousness, and dependability (self-discipline, competence, order, dutifulness, achievement striving, and deliberation) (Chapman et al. 2007b; Chapman, Duberstein, & Lyness, 2007a)

These five factors can be influenced by age, gender, and educational level. There are significant differences between men and women in terms of factors such as neuroticism, conscientiousness, and extraversion (Costa, Terracciano, & McCrae, 2001; Lameiras, & Rodriguez, 2004; McCrae, & Terracciano, 2005). The score of different factors may change during the transition from school to college (Ludtke, Trautwein, & Husemann, 2009). In adults, the mean level of different factors may change during this period and some factors may reach a peak score after the age of 40 (Rantanen, Metsapelto, Feldt, Pulkkinen, & Kokko, 2007; Specht, Egloff, & Schmukle, 2011)

These factors include the main axes of behavioral and psychological variation in people, and each factor has been associated with a number of prominent health related behaviors and outcomes which include higher levels of overall morbidity and self-rated health (Matthews, Yousfi, Schmidt-Rathjens, & Amelang, 2003; Neeleman, Sytema, & Wadsworth, 2002; Roberts, Walton, & Bogg 2005; Bogg, & Roberts, 2004). The FFM has received increased attention among clinical psychopathology researchers. Researches which have examined such models have obtained strong support for higher levels of neuroticism across mood and anxiety disorders (Weinstock, & Whisman, 2006; Bienvenu et al., 2004; Trull, & Sher, 1994) and lower levels of extraversion in social anxiety, depression, and agoraphobia (Brown, 2007; Rosellini, Lawrence, Meyer, & Brown, 2010; Weiss et al. 2009). In some researches, low conscientiousness and extraversion, and high neuroticism were risk factors for major and minor depression (Weiss et al. 2009; Hayward, Taylor, Smoski, Steffens, & Payne, 2013).

Previous studies have implicated that neuroticism, with increased levels of negative emotional states, leads to emotional disorders such as depression. However, extraversion, with reduced positive emotionality, activity levels, and

sociability, is related to depression and anxiety. Low conscientiousness also causes lack of self-control in planning and organization which leads to more severe levels of depression (Bienvenu et al., 2001; Trull, & Sher, 1994; Brown, 2007).

The prevalence of personality traits has not been assessed in the general population in Iran, and also the relation of personality traits with psychological factors may be different in various sociocultural settings. Therefore, in this study, we wanted to assess the prevalence of different personality traits and their relation with psychological factors including depression, anxiety, and psychological distress in the general population.

Methods

This was a cross-sectional study. We extracted our data from the framework of the Study on the Epidemiology of Psychological, Alimentary Health, and Nutrition (SEPAHAN), in 2013. The SEPAHAN study described the epidemiological concepts of functional gastrointestinal disorders and their association with lifestyle and psychological factors in 2010 (Adibi et al. 2012). In the SEPAHAN study, the studied population was selected from among 4 million people in 20 counties across Isfahan Province, Iran. Convenience sampling was performed by geographical region to determine the number of participants needed in each region. The participants were selected from among healthy individuals who live in Isfahan Province. The inclusion criteria were being older than 18 years of age, willing and able to comply with study procedures, and willing and able to provide a written informed consent. The exclusion criteria consisted of the presence of any serious medical or psychiatric conditions that require long-term drug consumption. All data was collected anonymously and with consideration of confidentiality. Participation in the study was completely optional and the response rate was 86.16%. The data on 4763 adults regarding demographic characteristics, personality traits, and psychological factors including depression, anxiety, and psychological distress was used.

Self-administered questionnaires were used to assess demographic data, personality traits, and psychological factors. The questionnaires were distributed among the participants at their home and workplace, they answered the questionnaires in their leisure time, and questionnaires were received as sealed envelopes. Detailed information about this survey has already been published (Hayward, Taylor, Smoski, Steffens, & Payne, 2013). To measure personality traits, the NEO Five-Factor Inventory (NEO-FFI) was used. The NEO-FFI is a 60-item self-report version of the 240-item NEO Personality Inventory-Revised (NEO-PI-R) and measures the five personality domains of neuroticism, extraversion, openness to experience, agreeableness, and conscientiousness (Chapman et al., 2007b). To permit the examination of each personality domain's specific elements, item cluster subcomponents have been developed and cross-validated (Saucier, 1998; Chapman, 2015). Each domain is measured by 12 items. The items are scored based on a 5-point Likert-type scale (0-4), ranging from strongly disagree (0) to strongly agree (Chapman et al., 2007b). Scores are summed totals in each domain separately (after reversing negatively scored items) and have a range of 0-48 for each of the five personality domains. A total of 28 NEO-FFI items are reverse-worded (Chapman et al., 2007b). The forward-translation and back-translation method was used to ensure the validity of the Persian version of the NEO-FFI (World Health Organization, 2015). The reliability of of the questionnaire was assessed using Cronbach's alpha coefficient ($\alpha = 0.86$).

To evaluate depression and anxiety, the Hospital Anxiety and Depression Scale (HADS) was used. It is a brief instrument widely used to measure psychological distress. A recent review of the literature on the validity of the HADS clearly indicates that it is efficient in assessing symptom severity and case-ness of anxiety disorders and depression in primary care

patients and even in the general population. The HADS contains 14 items and consists of 2 subscales of anxiety and depression. Each item is rated on a 4-point scale, with the anxiety and depression subscales separately obtaining a maximum score of 21. Scores of 8 or more on either subscale are considered to be a significant case of psychological morbidity, and 0-7 normal (Bjelland, Dahl, Haug, & Neckelmann, 2002). The validated Persian version of HADS with alpha of 0.78 and 0.86 for anxiety and depression subscales, respectively, was used (Montazeri, Vahdaninia, Ebrahimi, & Jarvandi, 2003a).

Mental health and psychological distress were evaluated using the General Health Questionnaire (GHQ-12). The GHQ-12 is a self-administered screening instrument designed to detect current diagnosable mental disturbances such as distress. It is a 12-item questionnaire that assesses psychological distress. The scale asks whether the respondent has experienced a particular symptom or behavior recently. Each item is rated on a 4-point scale (less than usual, no more than usual, rather more than usual, or much more than usual), with the 0-0-1-1 method yielding scores between 0 and 12 (Pevalin, 2000). The validated Persian version of the GHQ-12 ($\alpha = 0.87$) was used in this study (Montazeri et al. 2003b).

The protocol of our study was approved by the Medical Research Ethics Committee of Isfahan University of Medical Sciences, Isfahan, Iran (#189069, #189082, and #189086).

Using data of the SEPAHAN study, we assessed the prevalence of different personality traits and their relation with psychological factors including depression, anxiety, and psychological distress in the general population.

Continuous variables were expressed as mean ± SD. Student's t-test was used for continuous variables and chi-square test for discrete variables. Binary logistic regression analysis was used to find the association among the personality traits and psychological variables. Odds ratios (OR) were reported with the corresponding 95% confidence intervals. We considered the subjects as high and low groups, according to the median of total score and made a dichotomous variable for each personality trait. The data were analyzed using the SPSS software (version 20, SPSS Inc., Chicago, IL, USA). All P values of less than 0.05 were considered as statistically significant.

Results

In our study, the mean score ± SD of neuroticism, extraversion, openness, agreeableness, and conscientiousness were 18.72 ± 7.87, 29.03 ± 7.08, 24.04 ± 5.28, 31.05 ± 6.37, and 36.26 ± 7.22, respectively. The mean score of neuroticism, openness, and agreeableness were significantly higher in subjects who were 40 years or older. The mean score of extraversion was higher in men, but of neuroticism, openness, and agreeableness were significantly higher in women. The mean score of openness was significantly higher in graduate and unmarried subjects (Table 1). In depressed and anxious subjects and subjects with high psychological distress, the score of neuroticism was higher, but the scores of other factors were significantly lower (Table 1).

We considered the subjects as high and low groups, according to the median of total score in each factor. The majority of subjects in high neuroticism, and high openness groups were 40 years or older. The number of men was higher in low neuroticism, low openness, low agreeableness, and high extraversion groups. The number of women was significantly higher in high neuroticism, high agreeableness, and low extraversion groups. Undergraduate subjects were significantly more in low openness and low agreeableness groups and unmarried subjects were significantly more in high openness and low conscientiousness groups (Table 2). Depressed and anxious subjects and subjects with high psychological distress were significantly more in high neuroticism, low extraversion, low openness, low agreeableness, and low conscientiousness groups (Table 2).

In univariate analysis, odds ratios showed

that in our population, a high level of neuroticism was associated with being depressed (10.76), being anxious (16.96), and having high psychological distress (10.18), respectively. In contrast, low levels on the other four traits were associated with being depressed, being anxious, and having high psychological distress (Table 3). With multivariate analysis and considering all five traits and adjusting for age, sex, educational level, and marital status, these associations were modified, but were still significant for neuroticism, extraversion and agreeableness. The association of conscientiousness remained significant only with having high psychological distress (Table 3).

Discussion

In this study, we assessed the prevalence of different personality traits and their relationship with demographic and psychological factors (depression, anxiety, and high psychological distress) in the general population.

There are many studies regarding personality traits and demographic characteristics. Age-related differences have captured attention for many years and there are differences in personality attributes (Donnellan, & Lucas, 2008). Previous studies concluded that openness, extraversion, agreeableness, and conscientiousness reach a peak score up to age 60, and the mean-level of these factors increased across 10 years from age 30 to 40 (Rantanen et al., 2007; Specht et al., 2011). The results of the present study were consistent with these studies. In our population, openness and agreeableness were significantly higher in adults of 40 years or older. Another study also found that average levels of neuroticism generally declined with age (Terracciano, McCrae, Brant, & Costa, 2005). However, contrary to the finding that neuroticism showed relative gradual decrease with age, in our study neuroticism was higher in adults of 40 years and older. This difference was not surprising, because age differences in the FFM have been identified in cross-cultural researches. McCrae et al. (1999) used samples from various cultures and found that results were different for neuroticism. It was found to be lower in older versus younger participants in Germany, Portugal, and Korea, whereas age differences were not statistically notable in Italy and Croatia. Donnellan, & Lucas found that the neuroticism factor was somewhat negatively

Table 1. Mean score of personality traits according to demographic characteristics and psychological variables

Variable		Personality trait				
		Neuroticism	Extraversion	Openness	Agreeableness	Conscientiousness
Overall		18.72 ± 7.87	29.03 ± 7.08	24.04 ± 5.28	31.05 ± 6.37	36.26 ± 7.22
Demographic characteristics						
Age category (year)	≥ 40	19.28 ± 8.01*	29.12 ± 6.83	24.51 ± 4.96*	31.46 ± 5.93*	36.51 ± 6.64
	< 40	17.78 ± 7.39	28.85 ± 7.37	23.22 ± 5.62	30.46 ± 6.80	36.17 ± 7.84
Sex	Male	17.56 ± 7.54	29.88 ± 7.18*	23.67 ± 5.31	30.26 ± 6.51	36.03 ± 7.55
	Female	19.65 ± 7.99*	28.35 ± 6.93	24.33 ± 5.24*	31.67 ± 6.19*	36.44 ± 6.95
Educational level	Undergraduate	19.47 ± 7.72	28.61 ± 7.51	22.92 ± 5.39	30.14 ± 6.74	35.92 ± 7.78
	Graduate	18.18 ± 7.90	29.37 ± 6.67	24.91 ± 4.95*	31.79 ± 5.90	36.56 ± 6.66
Marital Status	Single	18.78 ± 8.17	29.10 ± 7.09	25.03 ± 5.40*	31.16 ± 6.61	36.50 ± 7.21
	Married	18.71 ± 7.79	29.04 ± 7.05	23.85 ± 5.20	31.07 ± 6.27	36.24 ± 7.17
Psychological variable						
Depression	No	16.30 ± 6.57	30.94 ± 6.10*	24.54 ± 4.83*	32.20 ± 5.62*	37.51 ± 6.22*
	Yes	25.27 ± 6.70*	25.13 ± 6.25	23.54 ± 4.94	29.11 ± 5.78	34.23 ± 6.83
Anxiety	No	17.43 ± 6.92	30.04 ± 6.40*	24.32 ± 4.86*	31.77 ± 5.71*	36.99 ± 6.41*
	Yes	27.72 ± 6.60*	24.52 ± 6.43	23.81 ± 5.04	28.45 ± 5.88	33.94 ± 6.96
Psychological distress	Low	16.69 ± 6.66	30.71 ± 6.18*	24.41 ± 4.85*	31.96 ± 5.77*	37.41 ± 6.37*
	High	26.03 ± 6.94*	24.23 ± 6.28	23.57 ± 5.30	28.97 ± 5.96	33.41 ± 6.90

All variables are presented as mean ± SD; * = P < 0.05

Table 2. Prevalence of personality traits according to demographic characteristics and psychological variables

Variable		Personality trait									
		Neuroticism		Extraversion		Openness		Agreeableness		Conscientiousness	
		Low	High	Low	High	Low	High	Low	High	Low	High
Overall		2395 (50.3)	2368 (49.7)	2386 (50.1)	2377 (49.9)	2473 (51.9)		2290 (48.1)	2324 (48.8)	2439 (51.2)	2552 (53.6)	2211 (46.4)
Demographic characteristics											
Age category (year)	≥ 40	1394 (29.3)	1480* (31.1)	1436 (30.2)	1438 (30.2)	1402 (29.4)	1472* (31.0)	1349 (28.3)	1525 (32.0)	1520 (32.0)	1354 (28.0)
	< 40	1001 (21.0)	888 (18.6)	950 (19.9)	939 (19.7)	1071 (22.5)	818 (17.1)	975 (20.5)	914 (19.2)	1032 (22.0)	857 (18.0)
Sex	Male	1173*(24.6)	933 (19.6)	910 (19.1)	1196* (25.1)	1145* (24.0)	961 (20.2)	1118* (23.5)	988 (20.7)	1140 (23.9)	966 (20.3)
	Female	1222 (25.7)	1435 (30.1)	1476 (31.0)	1181 (24.8)	1328 (27.9)	1329 (27.9)	1206 (25.3)	1451 (30.5)	1412 (29.6)	1245 (26.2)
Educational level	Undergraduate	964 (20.2)	1090* (22.9)	1031* (21.6)	955 (20.1)	1226* (25.8)	760 (15.9)	1061* (22.3)	925 (19.4)	1074 (22.5)	912 (19.1)
	Graduate	1431 (30.1)	1278 (26.8)	1355 (28.4)	1422 (29.9)	1247 (26.2)	1530 (32.1)	1263 (26.5)	1514 (31.8)	1478 (31.1)	1299 (27.3)
Marital Status	Single	438 (9.2)	436 (9.1)	439 (9.2)	435 (9.1)	391 (8.2)	483* (10.2)	428 (9.0)	446 (9.4)	439* (9.2)	435 (9.1)
	Married	1957 (41.1)	1932 (40.6)	1947 (40.9)	1942 (40.8)	2082 (43.7)	1807 (37.9)	1896 (39.8)	1993 (41.8)	2113 (44.4)	1776 (37.3)
Psychological variable											
Depression	No	2128 (44.7)	1187 (24.9)	1285 (27.0)	2030 (42.6)	1611 (33.8)	1704 (35.8)	1376 (28.9)	1939 (40.7)	1574 (33.0)	1741 (36.6)
	Yes	267 (5.6)	1181* (24.8)	1101* (23.1)	347 (7.3)	862* (18.1)	586 (12.3)	948* (19.9)	500 (10.5)	978* (20.5)	470 (9.9)
Anxiety	No	2273 (47.7)	1730 (36.3)	1792 (37.6)	2211 (46.4)	2029 (42.6)	1974 (41.5)	1789 (37.6)	2214 (46.5)	2020 (42.4)	1983 (41.6)
	Yes	122 (2.6)	638* (13.4)	594* (12.5)	166 (3.5)	444* (9.3)	316 (6.6)	535* (11.2)	225 (4.7)	532* (11.2)	228 (4.8)
Psychological distress	Low	2172 (45.6)	1389 (29.2)	1446 (30.4)	2115 (44.4)	1773 (37.2)	1788 (37.6)	1523 (32.0)	2038 (42.8)	1695 (35.6)	1866 (39.2)
	High	223 (4.7)	979* (20.5)	940* (19.7)	262 (5.5)	700* (14.7)	502 (10.5)	801* (16.8)	401 (8.4)	857* (18.0)	345 (7.2)

All variables are n (%); * = P < 0.05

Table 3. Logistic regression of psychological factors with personality traits

Variable	Depression			Anxiety			Psychological distress		
Personality trait	Univariate OR (95%CI)	Multivariate OR (95%CI)		Univariate OR (95%CI)	Multivariate OR (95%CI)		Univariate OR (95%CI)	Multivariate OR (95%CI)	
		Unadjusted	Adjusted#		Unadjusted	Adjusted		Unadjusted	Adjusted
Neuroticism	10.76* (9.09,12.74)	7.79* (6.42,9.46)	7.47* (6.14,9.08)	16.96* (12.53,22.98)	12.29* (8.72,17.30)	11.26* (7.98,15.89)	10.18* (8.43,12.30)	7.02* (5.65,8.72)	6.72* (5.40,8.36)
Extraversion	0.20* (0.17,0.23)	0.34* (0.28,0.41)	0.36* (0.30,0.44)	0.22* (0.18,0.26)	0.44* (0.34,0.55)	0.47* (0.37,0.60)	0.17* (0.14,0.20)	0.30* (0.24,0.36)	0.31* (0.25,0.38)
Openness	0.68* (0.60,0.78)	1.03 (0.88,1.22)	1.08 (0.91,1.28)	0.82* (0.70,0.97)	1.21 (0.99,1.47)	1.29 (0.95,1.59)	0.76* (0.66,0.87)	1.20 (0.98,1.43)	1.21 (0.91,1.45)
Agreeableness	0.38* (0.33,0.44)	0.80* (0.67,0.95)	0.77* (0.64,0.91)	0.34* (0.28,0.41)	0.73* (0.59,0.91)	0.69* (0.56,0.87)	0.37* (0.32,0.43)	0.81* (0.67,0.97)	0.78* (0.65,0.94)
Conscientiousness	0.44* (0.39,0.51)	1.02 (0.85,1.22)	0.98 (0.81,1.17)	0.46* (0.38,0.55)	1.01 (0.81,1.27)	0.99 (0.79,1.25)	0.35* (0.30,0.41)	0.74* (0.61,0.90)	0.73* (0.60,0.89)

= adjusted based on age category, sex, educational level, and marital status; * = P < 0.05

associated with age in British households, but somewhat positively associated with age in German households (Donnellan, & Lucas, 2008). Future work using samples from Iran and other nations is needed to examine other potential cross-national differences in the association between age and neuroticism.

In the FFM, sex-related differences are also important and combined sociocultural and biological explanations have been suggested to explain these differences in personality traits (Lippa, 2010; Schmitt, Realo, Voracek, & Allik, 2008). In our study, extraversion was higher in men, but neuroticism, openness, and agreeableness were significantly higher in women. Budaev proposed an evolutionary hypothesis that agreeableness and neuroticism together represent a single dimension with low agreeableness and neuroticism at one end and high agreeableness and neuroticism at the other. His data suggested men and women fall at opposite ends of this dimension, which is consistent with our results (Budaev, 1999). On the other hand, these differences in our study are broadly consistent with gender stereotypes. Costa et al. replicated them across 26 different nations in data comprising over 23,000 individuals (Costa et al., 2001) and McCrae, & Terracciano replicated them in observer reports of FFM traits across 50 cultures (McCrae, & Terracciano, 2005).

Educational levels can be correlated with the FFM traits. A previous study showed that scores on openness, agreeableness, and conscientiousness may increase during the transition from school to college, whereas scores on neuroticism decrease (Ludtke et al., 2009). Another study showed that adolescents with higher levels of conscientiousness faced fewer study delays (Klimstra, Luyckx, Germeijs, Meeus, & Goossens, 2012). Our results also showed that agreeableness, conscientiousness, extraversion, and openness are higher and neuroticism is lower in graduate subjects, but this difference was significant only in the openness dimension.

In Association with psychological factors, multivariate analysis (unadjusted and adjusted) showed that in our population, high level of neuroticism and low levels of agreeableness and extraversion were associated with being depressed or anxious or having high psychological distress. High level of conscientiousness was associated with having high psychological distress. Previous researches examining such models have also provided strong support for high levels of neuroticism and low levels of extraversion or conscientiousness across mood and anxiety disorders. Such studies found that depression was related to higher neuroticism and to lower extraversion and conscientiousness, and also concluded that high neuroticism and low conscientiousness and combinations of high neuroticism with low extraversion were risk factors for major depression (Weiss et al. 2009; Hayward et al. 2013). Another study also found that low conscientiousness and high openness predicted a diagnosis of major depressive disorder (MDD) during lifetime (Bienvenu et al. (2004) This is in line with the theory which has implicated higher levels of negative emotional states (i.e., high neuroticism) as prominent across the affective disorders while decreased positive emotionality, activity levels, and sociability (i.e., low extraversion) are related to depression and anxiety (Brown, 2007; Rosellini, & Brown, 2011). Some studies showed that higher level of neuroticism is related with anxiety disorders and low conscientiousness is related to diagnosis of generalized anxiety disorder during lifetime (Bienvenu et al., 2004; Rosellini et al., 2010). Moreover, lower levels of extraversion are related with situational avoidance, and possibly agoraphobia (Bienvenu et al., 2004; Rosellini et al., 2010). High conscientiousness may reflect perfectionist tendencies caused by an intolerance of uncertainty (Brown, & Barlow, 2009; Dugas, Gagnon, Ladouceur, & Freeston, 1998). Collectively, this suggests that greater

self-control in organization and planning is associated with the uncontrollability of tension and anxiety over minor matters, across the course of clinical disorders (Rosellini, & Brown, 2011).

In conclusion, in our population high level of neuroticism and low levels of agreeableness and extraversion were associated with being depressed or anxious or having high psychological distress. This is an important point for primary health care programming. It means that subjects with high level of neuroticism could be prone to developing of depression or anxiety, and thus, should be observed closely.

Our study and a few others have examined how the FFM domains predict some clinical outcomes (e.g., in depression, or anxiety without consideration of diagnosis) (Miller, 1991). Nevertheless, additional research is needed to examine longitudinal relations between the FFM and other emotional disorders. Furthermore, more studies are needed to further evaluate the exact nature of the relation between FFM domains and depressive and anxiety disorders. For example, a longitudinal study following subjects from premorbid periods through the incidence and remission of clinical disorders is suggested to clarify if specific personality traits increase the risk for psychopathology or if psychopathology changes personality. On the other hand, the relationship between combinations of psychopathology and different traits can be clarified by future studies.

Limitations

In this study, in association with psychological factors, we adjusted the results for age, sex, educational level, and marital status, but we did not check social factors which could influence psychological factors. Moreover, our study shows association between personality traits and psychological factors and does not show a causal relationship.

Conflict of Interests

Authors have no conflict of interests.

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