The Open Psychology Journal

Content list available at: https://openpsychologyjournal.com

RESEARCH ARTICLE

Personality Traits and Anxiety Disorders of Vietnamese Early Adolescents: The Mediating Role of Social Support and Self-Esteem

Nguyen Thi Thuy[1,*]

[1]*The Faculty of General Science, School of Foundation Science, Tra Vinh University, Tra Vinh, Vietnam*

Abstract:

Aims:

This study aims to investigate the relationship between personality traits and anxiety disorder, in which the mediating role of social support and self-esteem is also explored.

Background:

In Vietnam, anxiety disorder is a major challenge affecting adolescents' social and academic functioning.

Objectives:

Examine whether adolescents' personality traits are related to their anxiety disorders and whether social support and self-esteem mediate the relationship between personality and anxiety disorders.

Methods:

A sample population of 582 early adolescents at four secondary schools in Vietnam voluntarily participated in the study through the completion of the big-five personality dimension test, the social support scale, self-esteem scale and generalized anxiety disorder questionnaire. The SPSS statistical software was used to conduct descriptive statistics and analyses of Cronbach's Alpha, Pearson correlations and Regression. The mediation analysis of self – esteem and social support was conducted to determine the relationship between personality traits and anxiety disorder through SPSS PROCESS Macro.

Results:

Results revealed that the neuroticism trait had a positive correlation with anxiety disorders ($r = 0.56$), while the agreeableness and conscientiousness traits showed negative correlations ($r = -0.08$ and $r = -0.15$, respectively). The regression indicated that approximately 33.4% of the variance anxiety could be explained by these traits ($R^2 = 0.334$; $F = 55.414$; $p < 0.01$). Bootstrapping and Sobel analyses showed that social support and self-esteem mediated the association between neuroticism trait and anxiety disorder ($z = 3.00$ and $z = 5.45$, respectively).

Conclusion:

The findings interpreted that Vietnamese educators can reduce symptoms of anxiety for early adolescents with high neuroticism trait by helping them get more social support from others and improve role of self-esteem.

Keywords: Adolescent, Anxiety disorder, Personality traits, Self-esteem, Social support, Neuroticism.

1. INTRODUCTION

Personality traits are strong predictors of individuals' anxiety disorders and the exploration of this association has received growing interest among scholars and researchers [1 - 3]. Personality traits are stable individual characteristics of a person, which represent their typical patterns of behavior, cognition, feelings and motives [4]; meanwhile, anxiety disorders are mental illnesses associated with great suffering not only for individuals but also for their families and society. Anxiety disorders are the most common disorders affecting adolescents [5 - 7]. Merikangas *et al*. revealed that the

* Address correspondence to this author at the The Faculty of General Science, School of Foundation Science, Tra Vinh University, Tra Vinh, Vietnam;
E-mail: nguyenthuy@tvu.edu.vn

prevalence of anxiety disorders in adolescents was high with the range between 10.0% and 31.9% [5], and that among Vietnamese adolescents counted for approximately 38.0% [6]. Even, the ratio of anxiety in the adolescent reached up to 45.2% [8].

The direct effect of personality on anxiety disorder was examined in previous several studies [2, 3, 9]; however, the mechanism between big five personalities and anxiety has been neglected. Additionally, social support from different resources can help individuals protect against mental health problems [10]. Moreover, self-esteem has a significant negative correlation with anxiety disorders [11, 12]. Thus, the present study examined not only the relationship between early adolescents' personality traits and their anxiety order but also examined whether social support and self-esteem can play a mediating effect in this relationship.

2. MATERIALS AND METHODS

2.1. Literature Review and Hypotheses

2.1.1. Personality Traits and Anxiety Disorder

A wide range of research into the big five personality traits and anxiety disorders suggests that personality traits are significantly related to anxiety disorders. Brandes and Bienvenu revealed that high neuroticism increased the risk for anxiety disorders [1]. This trait had a positive relationship with anxiety [2 - 14]. Individuals high in neuroticism typically display emotional instability and excessive worry, which causes mental problems as well as a lack of the ability to cope with daily life activities. In addition, high scores in neuroticism expressed emotional-reactive behaviors related to negative feelings such as anxiety, anger, or depression, whereas low scores indicated resilience, calmness, and ability to control stress [15] can lead to a decrease in the risk for anxiety disorders. Meanwhile, the extraversion trait was found to have a negative correlation with anxiety [1, 9]; thus, the low extraversion trait increased the risk for anxiety disorders [1]. This review explained that a person with low extraversion tends to stay in the background, becoming less talkative and less action-oriented, which is significantly negatively correlated to anxiety [2]. Regarding agreeableness, conscientiousness, and openness traits, a negative association was also found between these traits and generalized anxiety [9, 14]. In another study, Kotov *et al.* found that extraversion and conscientiousness were significantly negatively correlated with anxiety [13], whereas openness and agreeableness did not correlate to mental disorders. From a different angle, Friesen found that agreeableness was positively associated with anxiety [16]. Clearly, the association between agreeableness and anxiety disorder has been controversial as some research studies produced conflicting results. Therefore, these inconsistencies will be explored in this current study on the early adolescent group.

2.1.2. Mediating the Effect of Social Support and Self-esteem

Social supports are individuals' psychological or material resources from their own social networks, which can assist them to deal with stressful challenges in daily life [17]. Social support comes from a variety of sources, such as friends, family, and significant others [18]. In terms of big five traits, personality is a stable predictor of social support [19 - 21]. Individuals with high levels of neuroticism could decrease the availability of social support [20]. Individuals with positive emotions could increase their social support [19]. Meanwhile, individuals with high openness tend to experience an increased probability of greater perceived availability of social support [21]. The characteristic of agreeableness may facilitate individuals building a more extensive social support network [21]. Conscientiousness tends to help individuals better cope with life stress, so it is positively related to social support [20]. In the relationship between social support and anxiety disorders, many previous research studies indicated that more social support provided would result in fewer anxiety disorders [10, 22, 23]. Moreover, social support plays an important role in the prevention and treatment of mental health problems [10]. Indeed, it is claimed that less social support is one of the most prominent predictors responsible for more mental health problems, including anxiety and depression [22] and more physical health problems [23].

Self – esteem refers to a person's sense or judgment of his or her self-worth [24]. In other words, self-esteem shows how an individual finds his or her self. Previous research showed a significant relationship between personality and self-esteem [11, 12, 25, 26]. Robins *et al.* found that personality accounted for 34% of the variance in self-esteem [25]. Individuals with high self-esteem were emotionally stable, conscientious, and energetic, and these traits were seen the same as other individuals who were open to experience and agreeable traits. Self-esteem was reported to have positively correlated with extraversion but negatively with neuroticism [27]. In relation to anxiety, low self-esteem is a risk factor related to mental illness such as stress, anxiety, and depression [11, 26]. In a study on adolescent groups, Maldonado *et al.* also found that adolescents with anxiety disorder had lower self-esteem [28]. In line with previous research, anxiety levels were negatively associated with self-esteem [12, 29].

From the review of the literature, it can be concluded that students' personality traits, social support, and self – esteem are related to anxiety disorder.

2.1.3. The Current Study

The purpose of this study is to examine whether adolescents' personality traits are related to their anxiety disorder and whether social support and self – esteem mediate the relationship between personality and anxiety disorders. In this research, fifteen hypotheses are proposed:

Hypothesis 1. Neuroticism is positively related to anxiety disorder

Hypothesis 2. Extraversion is negatively related to anxiety disorder

Hypothesis 3. Openness to experience is negatively related to anxiety disorder

Hypothesis 4. Agreeableness is negatively related to anxiety disorder

Hypothesis 5. Conscientiousness is negatively related to anxiety disorder

Hypothesis 6. Social support mediates neuroticism and anxiety disorder

Hypothesis 7. Social support mediates extraversion and anxiety disorder

Hypothesis 8. Social support mediates openness and anxiety disorder

Hypothesis 9. Social support mediates agreeableness and anxiety disorder

Hypothesis 10. Social support mediates conscientiousness and anxiety disorder

Hypothesis 11. Self-esteem mediates neuroticism and anxiety disorder

Hypothesis 12. Self-esteem mediates extraversion and anxiety disorder

Hypothesis 13. Self-esteem mediates openness and anxiety disorder

Hypothesis 14. Self-esteem mediates agreeableness and anxiety disorder

Hypothesis 15. Self-esteem mediates conscientiousness and anxiety disorder

Fig. (**1**) presents the model we aimed to test through path analysis, where the Big Five personality traits predict anxiety. Social support and self-esteem play a mediating role between personality traits and anxiety disorders. What follows is a brief review of the literature underpinning the delineation of the presented model.

3. METHODOLOGY

3.1. Data Collection

The study was conducted from November to September 2022. The data was collected by convenience sampling method. A total of 582 adolescents from four secondary schools in Tra Vinh province in the Mekong Delta region of Southern Vietnam were selected and volunteered for participation in this study. Of these students, 287 (49.3%) were male and 295 (50.7%) were female. Participants ranged from 12 to 15 years old.

3.2. Research Instruments

Personality traits were measured by a questionnaire using the fifteen-Item Personality Inventory [30]. Each personality trait (agreeableness, conscientiousness, extraversion, neuroticism, and openness to experience) consisted of three descriptors that ranged from 1 (strongly disagree) to 7 (strongly agree). The overall α reliability of big five personalities was 0.78.

Social support was measured by a Multi-Dimensional Scale of Perceived Social Support [31]. This inventory is comprised of 12 items. Each item is answered on a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). There are three subscales represented by the three sources of support: Significant Other, Family and Friends. The Cronbach alpha coefficients for these subscales were good (α = 0.90).

Self-esteem level was assessed by Rosenberg's Self-esteem Scale [24]. This inventory is composed of 10 items with scales ranging from 1 (strongly disagree) to 4 (strongly agree), which measure self-worth by measuring both positive and negative feelings about themselves. Response Reliability coefficient for self-esteem was 0.69.

Anxiety disorder was assessed by Generalized Anxiety Disorder Questionnaire (GAD-7) [32]. This inventory is a self-report scale with 7 items, which is developed to assess the defining symptoms of anxiety disorder. Each item is rated on a 3 -point Likert scale ranging from 0 (not at all) to 3 (nearly every day). Scores range from 0 to 21, with higher scores indicating more anxiety symptoms. The entire survey showed good reliability (α = 0.85).

3.3. Data Analysis Procedure

The current study used a descriptive research design. The SPSS *vs.* 22.0 statistical software (IBM Inc.) was used to conduct descriptive statistics and analyses of Cronbach's Alpha, Pearson correlations, and Regression. The mediation analysis of self – esteem, social support was conducted to determine the relationship between Personality Traits and Anxiety Disorder through SPSS PROCESS Macro [33].
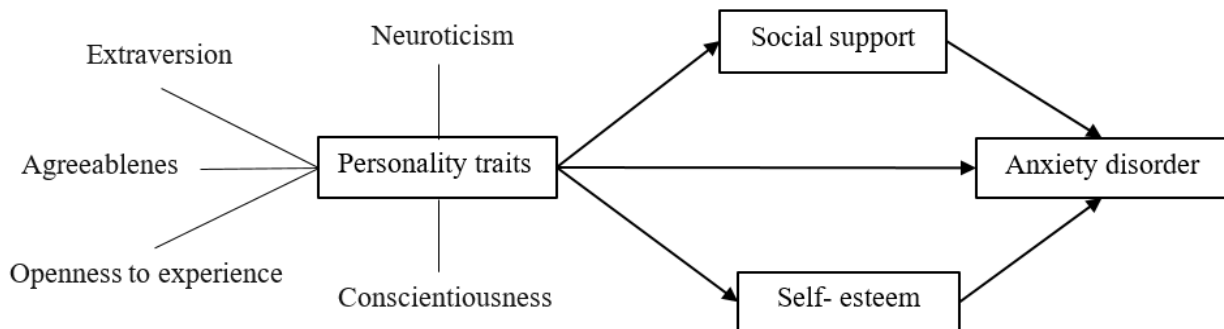

Fig. (1). Proposed theoretical model.

4. RESULTS

4.1. Descriptive Statistics and Correlation for all Variables

The correlation coefficients, means, and standiviation of personality traits, anxiety disorder, self - esteem, and social support are presented in Table **1**.

The statistical analysis showed that three big five personality traits: neuroticism, agreeableness, and conscientiousness, related significantly to GAD-7. Neuroticism indicated a positive correlation with GAD-7 (r = 0.56), meanwhile agreeableness and conscientiousness had negative correlations with GAD-7 (r = - 0.08 and r = - 0.15, respectively). In addition, all big five personality traits were

related significantly to social support and self-esteem. However, only the neuroticism trait was correlated negatively, and the rest traits correlated positively with these variables.

4.2. Effect of Personality Traits on Anxiety Disorder

The results of the regression indicated that these traits significantly predicted anxiety. Approximately 33.4% of the variance in anxiety could be explained by these traits (R^2 = 0.334; F = 55.414; p < 0.01). Among these predictors, Neuroticism and Conscientiousness statistically and significantly predicted the anxiety disorder. However, Extraversion, Openness to experience, and Agreeableness failed to predict anxiety with p > 0.05.

Table 1. Correlations and Descriptive statistics for all measures.

-	Neuroticism	Extraversion	Openness to Experience	Agreeableness	Conscientiousness	Anxiety Disorder	Social Support	Self-esteem
Neuroticism	1	-	-	-	-	-	-	-
Extraversion	.01	1	-	-	-	-	-	-
Openness to experience	.16**	.34**	1	-	-	-	-	-
Agreeableness	.04	.26**	.40**	1	-	-	-	-
Conscientiousness	-.05	.23**	.38**	.51**	1	-	-	-
Anxiety disorder	.56**	-.08	.06	-.08*	-.15**	1	-	-
Social support	-.18**	.28**	.21**	.32**	.36**	-.25**	1	-
Self - esteem	-.4l**	.17**	.14**	.26**	.41**	-.44**	.46**	1
Mean	3.43	4.24	4.27	4.6	4.27	3.77	3.53	2.69
SD	1.67	1.55	1.47	1,39	1,38	4.16	19	0.47

Note: **p<0.01,*p<0.05.

Table 2. Coefficients of regression analysis for anxiety disorder by personality traits.

Model	B	Std. Error	β	t	p
Constant	1.177	.685	-	1.720	.086
Neuroticism	1.370	.089	.548	15.449	.000
Extraversion	-.187	.101	-.0069	-1.855	.064
Openness to experience	.165	.116	.058	1.423	.155
Agreeableness	-.202	.126	-.067	-1.601	.110
Conscientiousness	-.267	.126	-.088	-2.116	.035

Note: R^2 = 0.334; F = 55.414; p = 0.000.

Table 3. Summary of mediation analysis for social support and self-esteem in the models.

Model Pathways	Total Effects (c)	Effect of X on M (a)	Effect of M on Y (b)	Direct effect (c)	Indirect Effect (ab)	95% CI Boot LLCI	95% CI Boot ULCI	Sobel Test z	Sobel Test p
1. Trait N → Social support → GAD-7	1.40**	-.08**	-.83**	1.33**	.07**	.02	.13	3.00	.002
2. Trait N → Self-esteem → GAD-7	1.36**	-.12**	-2.14	1.10**	.25**	.16	.36	5.45	.000
3. Trait C → Social support → GAD-7	-.46**	.21**	-1.19**	-.22	-.25**	-.38	-.12	-4.39	.000
4. Trait C → Self-esteem → GAD-7	-.51**	.14**	-3.73**	.01	-.52**	-.68	-.38	-7.16	.000

Note: N: Neuroticism; E: Extraversion; O: Openness to experience; A: Agreeableness; C: Conscientiousness.
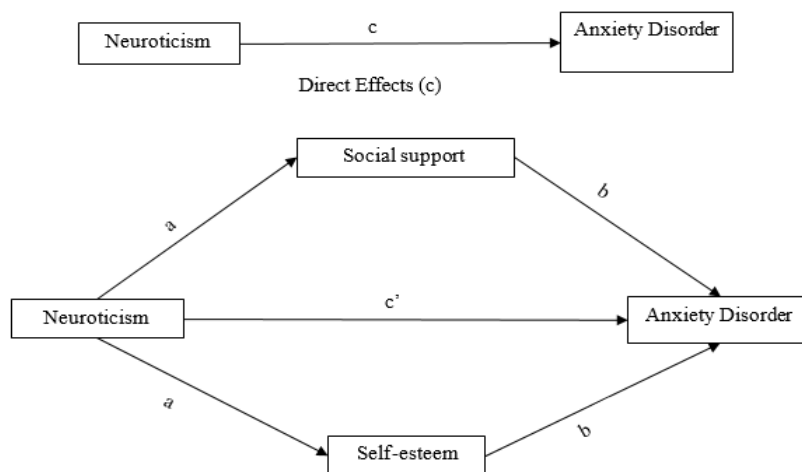**p≤0.01, *p≤0.05.

Fig. (2). Diagram of paths in the mediator model.

4.3. Mediation Analysis of Social Support and Self-esteem

In order to explore the role of social resources and self-esteem between the dimensions of personality traits and anxiety disorder, the PROCESS Macro of Hayes and Preacher were used [33]. The mediating effect of social resources and self – esteem was checked by using two methods: Sobel test results [34] and Bootstrapping method [33]. As presented in Table **2**, extraversion, openness to experience, and agreeableness failed to achieve statistical significance in order to have effects on anxiety, then these traits would not be included in the mediated analysis model. The model of mediation analysis of social support and self-esteem on the dimensions personality traits (neuroticism and conscientiousness) and anxiety disorder is illustrated in Table **3**.

The Sobel test results in Table **3** showed that the indirect effect of social resources and self-esteem in model 1: Neuroticism → Social support → GAD-7 ($z = 3.00$, $p<0.01$) and model 2: Neuroticism → Self-esteem → GAD-7 ($z = 5.45$, $p<0.01$) was significant. Meanwhile, the Sobel test and bootstrapping of the paths of conscientiousness trait in both model 3 and model 4 was significant; however, the direct effect (c') of model 3: Conscientiousness → Social support → GAD-7 (c'= -.22) and model 4: Conscientiousness → Self-esteem → GAD-7 (c'= .01) was bigger than total effect (c) (c = -.46; c = -.51, respectively), thus the role of mediator of this model was not established [33]. A graphical depiction is provided in Fig. (**2**).

5. DISCUSSION

The results of the present study confirmed the hypothesis that neuroticism was positively related to anxiety disorder, while agreeableness and conscientiousness negatively correlated to anxiety. Among these traits, neuroticism had the greatest impact on anxiety disorders in early adolescents. As neuroticism is described as an excessive worry that causes mental distress, emotional suffering, and inability to cope with daily life activities, high scores in neuroticism will have emotional-reactive behaviors related to negative feelings such as anxiety or depression [15]. Neuroticism had a positive direct effect on anxiety, which is in line with previous studies [1, 2, 14]. Brandes and Bienvenu showed that a person with high neuroticism has a risk of anxiety [1]. These findings from the present study strongly suggest that neuroticism traits may be a transdiagnostic risk factor in anxiety disorders in early adolescents. Another finding of the current study confirmed that the conscientious and agreeableness of early adolescents had negative relationships with their anxiety disorder, which shows some consistency with previous research studies [2, 9]. Conscientiousness trait reflects the tendency to be responsible to others self-discipline, hardworking, tidy, and competent [35]. This trait is considered protective factors for affective disorders [3]. Then, adolescents with a high level of conscientiousness tend to be careful, organized, thorough, and responsible, and manageable in their lives, thereby getting lower anxiety levels. In contrast, those with low conscientiousness are prone to failure in relationships and poorly coping with daily activities in life, which can contribute to their anxiety or mental problems. Similarly, agreeableness is described by traits such as sympathy, altruism, honesty, sense of cooperation, and hospitality [36]. Individuals with a high level of agreeableness tend to be good-natured, obedient, modest, gentle, and cooperative [37], and use more incremental and emotional social support in order to reduce the seriousness of anxiety disorders. In the current study, agreeableness of adolescents was also found negatively significant in connection with anxiety. There are some inconsistencies in this trait because Friesen found that several facets of agreeableness are positively associated with anxiety [16], while Kotov *et al.* showed that the connection between agreeableness and mental disorder is non-significant [13]. The reason that the relationship between agreeableness and anxiety in this current study was inconsistent with those from the previous research was possibly due to the sample. To be specific, if the sample in the study of Friesen is of small size in the patient group, then the finding may be anomalous [16]. In addition, the current study's sample was related to early adolescents and the negative significant relationship between agreeableness and anxiety disorder was negligible. Another finding of the current study rejected the hypothesis that a negative relationship between extraversion and openness to experience traits with

anxiety disorder was found. That is, adolescents with high or low extraversion and openness to experience were almost unrelated to their anxiety disorder. This finding is not in line with Ka *et al.*'s previous research [3], which showed that extraversion considered protective factors for anxiety disorders and openness to experience may facilitate actively coping with and seeking treatment for affective disorders.

In addition, the present study highlights the effect of social support on anxiety disorder. The existing literature has shown the relationship between social support and anxiety [10, 22]. Furthermore, the current study demonstrated that social support is negatively related to anxiety disorder, which is consistent with previous research that anxiety decreased in relation to social resources [10]. Individuals with high social support can build large and effective social networks from their social relations, thereby helping them overcome difficulties in life. As a result, their anxiety also decreases. The effect of social support was found as a mediator between conscientiousness and anxiety, which confirmed hypothesis [6]. Therefore, social support from friends and family may be one mechanism through which the relationship can decrease student anxiety, where the significance of the path trait of Neuroticism → social support → anxiety disorder was obtained. The mediating effects of social support confirm that neuroticism trait can prevent anxiety in adolescents' lives in a way that more social support can be received from their relatives.

Furthermore, the previous literature has shown the relationship between self-esteem and anxiety [11, 12, 25, 26]. The current study demonstrated that self-esteem is negatively related to anxiety. It means that low self-esteem is typically considered a risk factor for anxiety among adolescents, or anxiety is decreasingly associated with high self-esteem. The mediating effect of self-esteem was found in the relation between conscientiousness and anxiety, where the significance of the path trait: neuroticism → self-esteem → anxiety disorder was obtained. The mediating effects of self-esteem strongly suggest that an individual with high neuroticism can recognize and manage emotions in self-well and thus is more prone to enhancing their self-esteem, which in turn leads to a decrease in their anxiety disorder.

Finally, the results showed that agreeableness and conscientious traits were significantly related to anxiety disorder, but the association of these traits with anxiety was not mediated by social support or self-esteem. Agreeableness is characterised as sympathy, altruism, honesty, sense of cooperation, and hospitality [36], while the conscientiousness trait reflects the tendency to be responsible to others, self-controlled, tidy and hard working [35]. If the adolescent was higher in agreeableness and conscientious traits, their anxiety disorder would be lower. Then, the mediating effects of social support or self-esteem on the relationship between these traits and anxiety disorders did not possibly establish. However, it is difficult to claim that agreeableness and conscientiousness have only a direct influence on anxiety. Because these personality traits are of interpersonal rather than intrapersonal dimension, the mediators of the relationship between these traits and anxiety might be constructed and be related to a metacognitive process which is not measured in this research.

Especially, the findings of this study rejected the hypothesis that the association of extraversion and openness to experience traits with anxiety was mediated not only social resources but also self-esteem.

CONCLUSION

The current study makes the contribution of knowledge to the research field by revealing important relationships between the big five personality traits and anxiety disorder with the role of social support and self-esteem, which have been established as important mediators in the context of adolescents in secondary school in Vietnam. Among personality traits, only neuroticism had significant direct and indirect associations with anxiety disorder through social support and self-esteem, while agreeableness and conscientiousness only had negative correlations to anxiety disorder. Extraversion and openness to experience traits were not correlated to anxiety.

This present study implies that secondary schools in Vietnam should be aware of students' Neuroticism traits to be nurtured through the role of social support from family, friends, and specific others and their self-esteem in reducing symptoms of anxiety.

LIMITATIONS AND IMPLICATIONS FOR FUTURE RESEARCH

Despite the above valuable findings, the current study has some certain limitations. Firstly, the data were collected with a limited scope on a particular group of students who are adolescents living in a province in the Mekong Delta of Viet Nam. Thus, with its small-scale research, the findings drawn from the current study could not be generalized as representative of a larger population. Secondly, the data in this study were collected only through self – report measures from adolescents, which can be a threat to internal validity. Finally, the mediator of the relationship between these traits and anxiety in this current study is related only to the two variables of social support and self-esteem.

From the above-mentioned limitations, future research should be put forward with an expansion to a larger population from other provinces in Vietnam. In addition, using multiple methods for evaluation (for example: parents, teachers) may avoid self – report biases. Besides, mediators of the metacognitive process should be taken into account in order to fully understand the role of other traits on anxiety disorder.

ETHICS APPROVAL AND CONSENT TO PARTICIPATE

Ethical review and approval were obtained in accordance with the local legislation and institutional requirements *i.e.* Tra Vinh University, Tra Vinh, Vietnam.

HUMAN AND ANIMAL RIGHTS

No animals were used in this research. All procedures performed in studies involving human participants were in accordance with the ethical standards of institutional and/or research committees and with the 1975 Declaration of Helsinki, as revised in 2013.

CONSENT FOR PUBLICATION

Informed consent was obtained from all individual participants included in this study.

STANDARDS OF REPORTING

STROBE guidelines were followed.

AVAILABILITY OF DATA AND MATERIALS

All the data and supporting information are provided within the article.

FUNDING

CONFLICT OF INTEREST

The authors declare that there is no conflict of interest.

ACKNOWLEDGEMENTS

REFERENCES

[1]   Brandes M, Bienvenu OJ. Personality and anxiety disorders. Curr Psychiatry Rep 2006; 8(4): 263-9.
[http://dx.doi.org/10.1007/s11920-006-0061-8] [PMID: 16879789]

[2]   Kaplan SC, Levinson CA, Rodebaugh TL, Menatti A, Weeks JW. Social anxiety and the Big Five personality traits: The interactive relationship of trust and openness. Cogn Behav Ther 2015; 44(3): 212-22.
[http://dx.doi.org/10.1080/16506073.2015.1008032]   [PMID: 25705989]

[3]   Ka L, R E, K W, G J, Lje B. Associations between facets and aspects of Big Five Personality and affective disorders: A systematic review and best evidence synthesis. J Affect Disord 2021; 288: 175-88.
[http://dx.doi.org/10.1016/j.jad.2021.03.061] [PMID: 33901698]

[4]   Hogan R, Hogan J, Roberts BW. Personality measurement and employment decisions: Questions and answers. Am Psychol 1996; 51(5): 469-77.
[http://dx.doi.org/10.1037/0003-066X.51.5.469]

[5]   Merikangas KR, He J, Burstein M, et al. Lifetime prevalence of mental disorders in U.S. adolescents: Results from the National Comorbidity Survey Replication--Adolescent Supplement (NCS-A). J Am Acad Child Adolesc Psychiatry 2010; 49(10): 980-9.
[http://dx.doi.org/10.1016/j.jaac.2010.05.017] [PMID: 20855043]

[6]   Nguyen TAN. Factors afficting secondary students' emotional disorders. Journal of Science of HNUE 2016; 61: 128-35.
[http://dx.doi.org/10.18173/2354-1067.2016-0040]

[7]   Chiu A, Falk A, Walkup JT. Anxiety disorders among children and adolescents. Focus Am Psychiatr Publ 2016; 14(1): 26-33.
[http://dx.doi.org/10.1176/appi.focus.20150029] [PMID: 31975791]

[8]   Tran VC, Nguyen THP, Tran TN. Student's psychological difficulties and the need to use smart psychological counselling applications in schools. Vietnam J scitech 2019; 61(10): 1-6.

[9]   Nikčević AV, Marino C, Kolubinski DC, Leach D, Spada MM. Modelling the contribution of the Big Five personality traits, health anxiety, and COVID-19 psychological distress to generalised anxiety and depressive symptoms during the COVID-19 pandemic. J Affect Disord 2021; 279: 578-84.
[http://dx.doi.org/10.1016/j.jad.2020.10.053] [PMID: 33152562]

[10]   Scardera S, Perret LC, Ouellet-Morin I, et al. Association of social support during adolescence with depression, anxiety, and suicidal ideation in young adults. JAMA Netw Open 2020; 3(12): e2027491.
[http://dx.doi.org/10.1001/jamanetworkopen.2020.27491]

[11]   Lee A, Hankin BL. Insecure attachment, dysfunctional attitudes, and low self-esteem predicting prospective symptoms of depression and anxiety during adolescence. J Clin Child Adolesc Psychol 2009; 38(2): 219-31.
[http://dx.doi.org/10.1080/15374410802698396] [PMID: 19283600]

[12]   Liu X, Cao X, Gao W. Does low self-esteem predict anxiety among Chinese college students? Psychol Res Behav Manag 2022; 15: 1481-7.
[http://dx.doi.org/10.2147/PRBM.S361807] [PMID: 35719193]

[13]   Kotov R, Gamez W, Schmidt F, Watson D. Linking "big" personality traits to anxiety, depressive, and substance use disorders: A meta-analysis. Psychol Bull 2010; 136(5): 768-821.
[http://dx.doi.org/10.1037/a0020327] [PMID: 20804236]

[14]   Liu A, Yu Y, Sun S. How is the Big Five related to college students' anxiety: The role of rumination and resilience. Pers Individ Dif 2023; 200: 111901.
[http://dx.doi.org/10.1016/j.paid.2022.111901]

[15]   Migliore LA. Relation between big five personality traits and Hofstede's cultural dimensions. Cross Cult Manage 2011; 18(1): 38-54.
[http://dx.doi.org/10.1108/13527601111104287]

[16]   Friesen CJ. The five-factor model of personality and axis I psychopathology: A multi-clinic analysis. York University 2008.

[17]   Cohen S, Wills TA. Stress, social support, and the buffering hypothesis. Psychol Bull 1985; 98(2): 310-57.
[http://dx.doi.org/10.1037/0033-2909.98.2.310] [PMID: 3901065]

[18]   Taylor SE. Social support: A review. In: Oxford Library of Psychology The Oxford Handbook of Health Psychology. New York, NY: Oxford University Press 2011; pp. 189-214.

[19]   Swickert RJ, Hittner JB, Foster A. Big Five traits interact to predict perceived social support. Pers Individ Dif 2010; 48(6): 736-41.
[http://dx.doi.org/10.1016/j.paid.2010.01.018]

[20]   Ayub N. Predicting suicide ideation through intrapersonal and interpersonal factors: The interplay of Big-Five personality traits and social support. Pers Ment Health 2015; 9(4): 308-18.
[http://dx.doi.org/10.1002/pmh.1301] [PMID: 26148708]

[21]   Barańczuk U. The five factor model of personality and social support: A meta-analysis. J Res Pers 2019; 81: 38-46.
[http://dx.doi.org/10.1016/j.jrp.2019.05.002]

[22]   Siedlecki KL, Salthouse TA, Oishi S, Jeswani S. The relationship between social support and subjective well-being across age. Soc Indic Res 2014; 117(2): 561-76.
[http://dx.doi.org/10.1007/s11205-013-0361-4] [PMID: 25045200]

[23]   Hale CJ, Hannum JW, Espelage DL. Social support and physical health: the importance of belonging. J Am Coll Health 2005; 53(6): 276-84.
[http://dx.doi.org/10.3200/JACH.53.6.276-284] [PMID: 15900991]

[24]   Rosenberg M. Society and the adolescent self-image. Princeton, NJ: Princeton University Press 1965.
[http://dx.doi.org/10.1515/9781400876136]

[25]   Robins RW, Tracy JL, Trzesniewski K, Potter J, Gosling SD. Personality correlates of self-esteem. J Res Pers 2001; 35(4): 463-82.
[http://dx.doi.org/10.1006/jrpe.2001.2324]

[26]   Orth U, Robins RW, Roberts BW. Low self-esteem prospectively predicts depression in adolescence and young adulthood. J Pers Soc Psychol 2008; 95(3): 695-708.
[http://dx.doi.org/10.1037/0022-3514.95.3.695] [PMID: 18729703]

[27]   Watson D, Suls J, Haig J. Global self-esteem in relation to structural models of personality and affectivity. J Pers Soc Psychol 2002; 83(1): 185-97.
[http://dx.doi.org/10.1037/0022-3514.83.1.185] [PMID: 12088125]

[28]   Maldonado L, Huang Y, Chen R, Kasen S, Cohen P, Chen H. Impact of early adolescent anxiety disorders on self-esteem development from adolescence to young adulthood. J Adolesc Health 2013; 53(2): 287-92.
[http://dx.doi.org/10.1016/j.jadohealth.2013.02.025]   [PMID: 23648133]

[29]   Sarı SA, Bilek G, Çelik E. Test anxiety and self-esteem in senior high school students: A cross-sectional study. Nord J Psychiatry 2018; 72(2): 84-8.
[http://dx.doi.org/10.1080/08039488.2017.1389986]   [PMID: 29037120]

[30]   Lang FR, John D, Lüdtke O, Schupp J, Wagner GG. Short assessment of the Big Five: robust across survey methods except telephone interviewing. Behav Res Methods 2011; 43(2): 548-67.
[http://dx.doi.org/10.3758/s13428-011-0066-z] [PMID: 21424189]

[31]   Zimet GD, Dahlem NW, Zimet SG, Farley GK. The multidimensional scale of perceived social support. J Pers Assess 1988; 52(1): 30-41.

[http://dx.doi.org/10.1207/s15327752jpa5201_2] [PMID: 2280326]

[32]   Spitzer RL, Kroenke K, Williams JBW, Löwe B. A brief measure for assessing generalized anxiety disorder: the GAD-7. Arch Intern Med 2006; 166(10): 1092-7.
[http://dx.doi.org/10.1001/archinte.166.10.1092] [PMID: 16717171]

[33]   Hayes AF. Introduction to mediation, moderation, and conditional process analysis: A regression-based approach. Guilford Publications 2018.

[34]   Sobel ME. Asymptotic confidence intervals for indirect effects in structural equation modelsSociological methodology. Washington, DC: American Sociological Association 1982.

[http://dx.doi.org/10.2307/270723]

[35]   Jackson JJ, Roberts BW. Conscientiousness Oxford Library of Psychology The Oxford Handbook of the Five Factor Model. New York, NY, US: Oxford University 2015.

[36]   McCrae RR, John OP. An introduction to the five-factor model and its applications. J Pers 1992; 60(2): 175-215.
[http://dx.doi.org/10.1111/j.1467-6494.1992.tb00970.x]   [PMID: 1635039]

[37]   Roccas S, Sagiv L, Schwartz SH, Knafo A. The big five personality factors and personal values. Pers Soc Psychol Bull 2002; 28(6): 789-801.
[http://dx.doi.org/10.1177/0146167202289008]