Alberta Journal of Educational Research, Vol. 59, No. 1, Spring 2013, 45-54

Personality traits and examination anxiety: Moderating role of gender

Arezou Asghari, Rusnani bte Abd.Kadir, Habibah bte Elias, Maznah bte Baba

University of Putra Malaysia

This study is aimed at examining the moderating effect of gender on the relationship between personality traits and state anxiety. The participants were 375 Iranian high school students (193 males and 182 females). The instruments used were the NEO-FFI-3 Inventory *and* State Anxiety Inventory. *Results of the structural model showed that from the five personality dimensions, extraversion and conscientiousness negatively related to state anxiety whereas neuroticism affected it positively. Results of multigroup analysis also revealed that gender moderated the paths between extraversion and state anxiety in female students and conscientiousness and state anxiety in male students. Overall, findings suggested that both personality traits and gender differences can be determinant factors in state anxiety.*

Cette étude porte sur l'effet modérateur qu'a le sexe sur le rapport entre les traits de caractère et l'état d'anxiété. Les participants consistaient en 375 élèves iraniens au secondaire (193 hommes et 182 femmes). Le questionnaire NEO-FFI-3 *et le questionnaire* SAI sur l'anxiété *(*State Anxiety Inventory*) ont servi d'outils à l'étude. Les résultats du modèle structurel ont indiqué que des cinq dimensions du caractère, l'extraversion et la conscience sont en relation négative avec l'anxiété, alors que le névrosisme est en relation positive. Les résultats d'une analyse multi-groupe ont également révélé que le sexe atténuait le rapport entre l'extraversion et l'anxiété chez les femmes, et entre la conscience et l'anxiété chez les hommes. Globalement, les résultats portent à conclure que tant les traits de caractère que les différences entre les sexes peuvent être des facteurs déterminants dans l'état d'anxiété.*

Of the many emotional reactions to stressful situations, anxiety is considered to be the most typically experienced. Exam-related anxiety is one of the most frequent psychological problems among students in an academic setting. In fact, high pressure and expectations experienced in the school environment might be one of the most reported complaints from students, particularly among adolescents (De Anda, Baroni, Boskin, Buchwald, Morgan, Ow, Gold, & Weiss, 2000).

It is believed that traits can affect the manner in which individuals experience stressors (Kammeyer-Mueller, Judge & Scott, 2009). Therefore, some students feel fairly calm when taking a test while others see examination as more damaging or threatening and experience a high level of state anxiety during the examination (Spielberger & Vagg, 1995; Chamorro-Premuzic, Ahmetoglu & Furnham, 2008). State anxiety is defined as "the specific level of anxiety experienced in a particular evaluative or test situation, such as an important college examination or athletic competition" (Spielberger, Gonzales, Taylor, Algaze, & Anton, 1978).

Personality is a significant determinant of health and psychological outcomes (Bolger & Zuckerman, 1995). Researchers do not completely understand how personality results in these outcomes; however, it has become obvious that stressful experiences and the way people cope with them have an important explanatory role in stress outcomes (Bolger & Schilling, 1991; Bolger & Zuckerman, 1995).

There are some studies which suggest an association between personality and examination outcomes, and or test anxiety. Ackerman and Heggestad (1997) suggested that individual difference variables such as personality, intelligence, and vocational interests can be used to explain both variance in academic performance and the processes by which traits influence examination outcomes. Chamorro-Preuzic and Furnham (2003) stated that personality was an important contributor to predict academic success and failure in university students, particularly in a competitive setting. Fitch (2004) found that some of the personality dimensions including neuroticism and extraversion can explain the variance in test anxiety. Chamorro-Premuzic, Ahmetoglue and Furnham (2008) maintained that personality is a significant predictor of test anxiety in university students. Lastly, Khosravi and Bigdeli (2008) found that from “the three factors of Eysenck personality scale," only neuroticism had a positive significant relationship with test anxiety in undergraduate students.

Theoretical links between personality and Examination anxiety

The most contemporary model for describing personality is “The Big Five.” It consists of five global factors: Neuroticism, Extraversion, Openness to Experience, Agreeableness, and Conscientiousness (McCrae & Costa, 1992). A growing body of literature confirmed the association between some of the personality dimensions with examination anxiety. For instance, individuals high in neuroticism (N) are considered to be adversely affected in various educational settings (Fitch, 2004). Findings by Schmidt and Rinoiolo (1999) showed that undergraduate students with high trait neuroticism reported a high anxiety level in response to tests in general, and the anticipated testing situation in particular, and high anxiety levels when facing social situations.

Extraversion (E) has been related inversely to anxiety. Generally, extraverts have a tendency to function better under situations which deal with high stimulation or arousal, while introverts seem to have better performance under non-arousing situations. Consequently, extraverted students will experience less unfavorable emotions through an examination or other evaluative encounters compared to their introverted counterparts (Fitch, 2004).

Openness to experience (O) may probably influence some behaviors which happen prior to an examination. For instance, openness is linked to a number of positive aspects of learning like willingness to learn and divergent thinking (McCrae & Costa, 2010). By representing a preference for learning, openness students would be anticipated to better absorb materials essential to perform successfully in an examination, thus reducing the level of their anxiety (Fitch, 2004).

Apparently, conscientiousness (C) has been associated with a number of positive academic achievements, such as college performance (Tross, Harper, Osher, & Kneidinger, 2000). High conscientiousness has been found to be correlated with high achievements in academic settings. In spite of insufficient evidence, the available literature proposes that conscientiousness and examination anxiety are inversely related (Fitch, 2004).

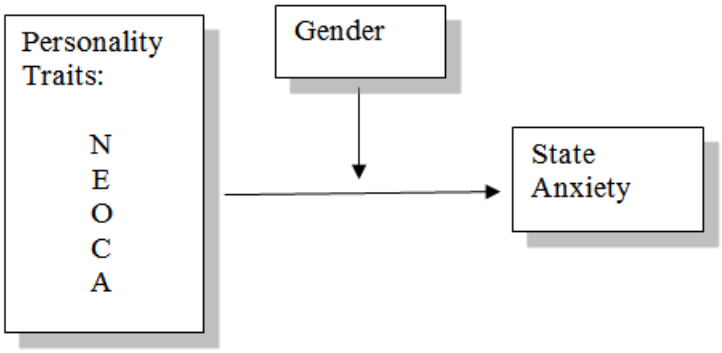

Figure 1: The Conceptual Model of the Study

Generally, agreeableness (A) individuals are found as friendly, compliant, sympathetic and softhearted by their friends (Cloninger, 2004). Yet, so far, scarcely any literature has found any association between agreeableness and examination outcomes.

Gender difference in Personality and Examination Anxiety

In personality literature, there are some studies which highlight the gender differences in the big five personality traits. For instance, Costa, Terracciano and McCrae (2001) found that women consistently scored higher than men on many facets of neuroticism and agreeableness. Men, on the other hand, scored higher on the need for excitement and assertiveness (Extraversion components), competence (Conscientiousness component), and openness to ideas and fantasy (facets of Openness).

Anxiety research also mentioned gender as an important factor in examination anxiety. For example, Zeidner (1998) mentioned demographic variables, including gender as a moderator in test anxiety. Likewise, Putwain (2007) also mentioned gender as a significant predictor of test anxiety. Thus far, there is limited research examining the moderating role of gender or to consider gender differences in the link between personality and anxiety. Males and females may show differences in some traits which make them respond differently to stressors like examination anxiety. Therefore, this study is aimed at examining first, the structural relationship between personality and state anxiety; and second, the moderating role of gender on the link between personality and state anxiety. Figure 1 presents the hypothesized model of the study.

Method

Participants

The participants were 375 Iranian high school students from Gorgan City, North of Iran. There were 193 (51.5%) males and 182 (48.5%) females who were selected using the random cluster sampling method. The age of the respondents ranged from 15-16 years old (M = 16.48, SD = 1.44).

Procedure

Questionnaires were administrated in 6 high schools before the final examination. Questionnaires were distributed after a short presentation about the aim of the study together with information that was essential to fill in the questionnaires. Participation was voluntary and anonymous. The questionnaires were collected upon completion.

Questionnaires

The present study recruited two instruments to measure personality traits and exam-related anxiety. The instruments were NEO-FFI-3 (NEO) and state Anxiety (STAI). The participants responded to the Farsi versions of these instruments.

NEO-FFI-3 (NEO) Inventory

NEO-FFI-3 is a 60-item version of the NEO-PI-3 that provides a brief, comprehensive measure of the five factors of personality (NEO-PI-3; McCrae & Costa, 1992). It is appropriate for adolescents aged 12 years and older. It consists of five 12-item scales that each measure five factors of personality (Neuroticism, Extraversion, Openness, Agreeableness, and Conscientiousness) and uses a 5-point Likert- type scale, ranging from strongly disagree to strongly agree. The reliability coefficients in this study for each subscale were Neuroticism .79, Extraversion .80, Openness to experience .75, Agreeableness .81, and Conscientiousness .80.

State Anxiety Inventory (STAI, Form Y1)

STAI is a 20-item inventory which measures feelings of apprehension, tension, nervousness, and worry. The inventory might also be applied to evaluate how respondents felt at a particular time in the current past or how they predict feeling in the future (Spielberger, 1983). It is a 4-point Likert-type scale which ranges from 1 (Not at all) to 4 (Very much so). In this study the reliability coefficient for State Anxiety Inventory was .87.

Results

To carry out the objectives of the study, the collected data was analyzed by using SPSS Ver.20 and AMOS Ver.20. In addition to descriptive statistics, the Structural Equation Model (SEM) was also used in order to examine the structural relationship between personality and state anxiety and the moderating role of gender on this association. SEM examines the fit of the data to the hypothesized model and also considers the measurement's unreliability when investigating the relationships among variables (Maruyama & McGarvey, 1980).

To assess the fit of the model, series of *Goodness-Of-Fit* indices were computed. According to Hair, Anderson, Tatham and Black (2006), goodness of fit indices greater than .9 and RMSEA (Root Mean Square Error of Approximation) indices less than .08 indicate a good fit. Ho (2006) proposed that RMSEA values ranging from .03 to .08 show a good fit, whereas, values between .08 to .1 indicate moderate fit and values more than .1 indicate poor fit.

To examine the moderating effect of gender, multigroup modeling was conducted. To test the gender differences among the regression weights, Critical Ratios (C.R) have been employed. A C.R larger than ±1.96 indicates a significant difference between paths for males and females.

Table 1

Descriptive Statistics of Independent & Dependent Variables Regarding Gender

Variables	Gender	Mean	Std	*N*
Neuroticism	Male	17.72	3.95	193
	Female	16.24	3.75	182
	Total	17.00	3.92	375
Extraversion	Male	28.32	11.02	193
	Female	29.37	12.09	182
	Total	28.83	11.55	375
Agreeableness	Male	23.45	4.19	193
	Female	24.11	4.15	182
	Total	23.77	4.18	375
Conscientiousness	Male	19.18	3.72	193
	Female	19.69	4.31	182
	Total	19.43	4.02	375
Openness	Male	28.30	9.14	193
	Female	28.80	8.75	182
	Total	28.54	8.94	375
State Anxiety	Male	49.88	8.82	193
	Female	54.58	8.76	182
	Total	52.16	9.09	375

Descriptive Statistics

According to Table 1, from personality dimensions, the largest mean scores on extraversion for female students is 29.37 with the *SD* of 12.09 and the smallest mean scores on neuroticism for female is 16.24 with the *SD* of 3.75. Also the largest mean scores on state anxiety for female students is 54.58 with the *SD* of 8.76.

The Measurement Model

The measurement model was defined by specifying the items of each scale. It provides a test for the reliability of the observed variables used to assess the latent variables. Therefore, when a measurement model suggests a poor fit to the data, this would mean that some of the observed indicator variables do not meet the reliability and prevent the researcher from starting the analysis of structural models (Ho, 2006). If the initial measurement model failed to meet the required Goodness of Fit (GOF) indices in the confirmatory test of model, then some solutions such as investigation on factor loadings and modification indices to remove poor items have to be estimated and tested. Hair, Black, Babin, and Anderson (2010) suggested that the size of factor loadings should be higher than .5 to determine the construct validity of the measurement.

The Confirmatory Factor Analysis (CFA) was computed for the Big Five Factor Model (Extraversion, Agreeableness, Conscientiousness, Openness, and Neuroticism) and state anxiety. The initial models for both the Big Five Model and the State Anxiety Model did not indicate a perfect fit. Therefore, some items needed to be eliminated from the model due to low factor loadings (less than .5). After eliminating some items from both mentioned variables, results of the modified model presented a good fit for both models.

Table 2

Regression weights in structural model

Path relation			Estimate	*SE*	β	*P*
S A	<---	E	-.204	.054	-.201	.000
S A	<---	A	.069	.083	.057	.408
S A	<---	C	-.202	.064	-.192	.002
S A	<---	O	-.031	.062	-.028	.612
S A	<---	N	.469	.081	.413	.000

Note: SA=State Anxiety; E=Extraversion; A=Agreeableness; C=Conscientiousness; O=Openness; N=Neuroticism

The statistic indices for big five factor model were $\chi^2 = 48.530$, χ^2 / df (48.530 / 151) = 3.103, CFI = .912, IFI = .913, TLI = .901, RMSEA = .075, which showed the indices like CFI, IFI, and TLI acceptably met the criterion of .9 and RMSEA also showed the desired value between .03 and .08 (Hair et al. 2006). Factor loadings also ranged from .58 to .86. In addition, the result of the modified model for state anxiety also showed adequate fit. The Goodness of Fit indices were $\chi^2 = 1543.766$, χ^2 / df (1543.766 / 892) = 1.731, CFI = .936, IFI = .937, TLI = .932, RMSEA = .044. According to the results, indices including, CFI, IFI, and TLI, all presented values greater than .9 and RMSEA also showed an acceptable value between .03 and .08. Finally, the factor loadings ranged from .62 to .77.

The structural Equation Model (SEM)

After determining the validation of the instruments, the structural model was loaded in order to specify the set of relationship between variables. In the preliminary step, the direct effect between the independent variable (personality traits) and the dependent variable (state anxiety) was loaded. The statistic indices were $\chi^2 = 1646.113$, χ^2 / df (1646.113 / 974) = 1.690, CFI = .958, IFI = .958, TLI = .956, RMSEA = .043, which showed the indices like CFI, IFI, and TLI acceptably met the criterion of .9 and RMSEA fell between the desired value between .03 and .08 (Hair et al., 2006). Thus, the model presented good fit to the data.

Standard regression weights (β) and unstandard regression weights (Estimate) for the paths in the model are displayed in Table 2. According to the findings, three of the five paths were significant, namely the path between E and SA (β = -.201, $p < .001$), C and SA (β = -.192, $p < .002$,) and N and SA (β =.413, $p < .001$). Overall, personality dimensions explained .49 of the variance.

In the second step, the moderating effect of gender on the relationship between personality traits and state anxiety was examined. The multigroup model showed adequate fit to the data: (CMIN / *df* (2957.884 / 1948) = 1.518, $p < .001$, CFI = .939, IFI = .939, TLI = .935, RMSEA = .037. Standard regression weights (β) and unstandard regression weights (Estimate) and also Critical Ratio differences for both males and females are presented in Table 3.

Specifically, one path was shown to be significantly stronger for women than men, namely the link between extraversion and state anxiety (β = -.388 for females, β = -.017 for males). C.R presented a significant difference (C.R = -3.324 > ± 1.96, $p < .05$). Furthermore, one path was shown to be significantly stronger for men than women, namely the link between

Table 3

Regression weights and critical ratios for differences between males and female

Path relations	Gender	Estimate	*SE*	β	C.R. differences
SA <--- E	Male	-.018	.071	-.017	-3.324
	Female	-.370	.078	-.388	
SA <--- A	Male	-.053	.107	-.048	.971
	Female	.108	.127	.075	
SA <--- C	Male	-.270	.078	-.266	2.126
	Female	-.048	.096	-.045	
SA <--- O	Male	-.089	.072	-.086	.967
	Female	.026	.095	.021	
SA <--- N	Male	.508	.103	.465	-.503
	Female	.431	.113	.369	

Note: SA=State Anxiety; E=Extraversion; A=Agreeableness; C=Conscientiousness; O=Openness; N=Neuroticism

conscientiousness and state anxiety (β = -.266 for males, β = -.045 for females). C.R also showed a significant difference (C.R = 2.126 > ± 1.96, $p < .05$). Thus, the moderating effect of gender was supported in two of five paths between personality and state anxiety.

Discussion

Our study results provide support for the first objective which noted the relationship between personality dimensions and state anxiety. Base on the results, extraversion and conscientiousness were found to be negatively related to the state anxiety. In fact, extraverted individuals are predisposed to experience more positive emotions and see the world optimistically. Extraverts are encouraged to respond better to arousal and stimulating situations (Fitch 2004). Therefore, students who were characterized as extraverts might experience less anxiety in an evaluation situation. Furthermore, characteristics which have denoted to conscientiousness individuals encourage them to be high achievers in academic settings and experience more positive outcomes such as successful academic performance. Therefore, conscientiousness students probably experience less test anxiety during examinations (Tross et al., 2000).

On the other hand, neuroticism was found to be positively related to the state anxiety. The explanation for this finding may be due to the negative perceptions about events and vulnerability when experiencing negative emotions by neurotic individuals that make them act inappropriately in distressing situations like examinations (Scmidt & Rinoiolo, 1999; Fitch, 2004). As a result, students with neuroticism characteristics are believed to experience high levels of state anxiety. Findings were consistent with previous research (Chamorro-Premuzic, et al. 2008; Fitch, 2004; Chamorro-Preuzic & Furnham, 2003).

However, openness and agreeableness failed to be related significantly to state anxiety. These findings also flow in line with previous research which had not found any significant relationship between these two personality components and examination anxiety (Fitch, 2004; Chamorro-Premuzic et al. 2008).

Regarding the effect of gender differences on the relationship between personality traits and state anxiety, results imply that gender moderated the path between extraversion and state anxiety in females and the path between conscientiousness and state anxiety in males. Accordingly, extraverted females experience less anxiety in comparison with their male counterparts. In contrast, male students with a conscientiousness trait experience less state anxiety compared to their female peers. Therefore, traits like extraversion in females and conscientiousness in males are possibly both protective traits which prevent them from experiencing anxiety and stress in the academic environment. These findings confirm the importance of the role of gender and its interaction with personality traits in predicting increased or decreased levels of state anxiety in Iranian high school students.

Although there may be limited research which integrate the moderating role of gender on the association between personality traits and state anxiety, this study is in agreement with Zeidner (1998), and Putwain (2007) who highlighted the role of gender in anxiety research. As discussed earlier, there are a few studies like Khosravi and Bigdeli (2008) that did not find any significant gender group differences in the link between personality and examination anxiety in college students. Accordingly, the results are in contrast with Khosravi and Bigdeli (2008) that suggested no gender group differences. In this case, it is more likely that findings of the study are sample-specific and would limit generalization about gender differences to other samples. However, on the whole, in the light of research which highlighted the gender roles, the present research is also congruent with this view that the effect of gender should be regarded in a similar research on high school students' sample.

This study provides a base knowledge in personality traits. This would help psychologists and school counselors to identify students whose traits make them more vulnerable to experience stressors than others. The second contribution of this study is to understand the importance of response of gender differences with regard to anxiety encounters. This may further suggest to psychologists, counselors, and other health workers to develop and enhance, gender-specific approaches in order to reduce examination stress and anxiety in educational settings.

Conclusion

Findings regarding relationships between personality dimensions and state anxiety indicated that Iranian students with extraversion and conscientiousness traits experience lower levels of state anxiety in contrast to students with neuroticism who experience higher levels of state anxiety. These findings suggest that specific traits may have significant roles in experiencing high or low level of test anxiety in Iranian high school students. Therefore, personality traits can be important predictors of exam-related anxiety. Lastly, results of the moderation analysis revealed that Iranian female students who have high levels of extraversion reported less state anxiety than male students. Contrary to female students, highly conscientiousness male students demonstrated lower anxiety levels than female. These findings confirm the important role of gender and its interaction with personality traits in predicting increased or decreased levels of anxiety in Iranian high school students.

References

Ackerman, P., & Heggested, E. (1997). Intelligence, personality, and interests: Evidence for overlapping traits. *Psychological Bulletin*, *121*(2), 219-245. doi:10.1037//0033-2909.121.2.219

Bolger, N., & Schilling, E. A. (1991). Personality and the problems of everyday life: The role of neuroticism in exposure and reactivity to daily stressors. *Journal of Personality, 59*(3), 355-386. doi:10.1111/j.1467-6494.1991.tb00253.x

Bolger, N., & Zuckerman, A. (1995). A framework for studying personality in the stress process. *Journal of Personality and Social Psychology, 69*(5), 890-902. doi:10.1037//0022-3514.69.5.890

Chamorro-Premuzic, T., & Furnham, A. (2003). Personality Traits and Academic Examination Performance. *European Journal of Personality, 17*(3), 237-250. doi:10.1002/per.473

Chamorro-Premuzic, T., Ahmetoglu, G., & Furnham, A. (2008). Little more than personality: Dispositional determinants of test anxiety: (the Big Five, core self-evaluations, and self-assessed intelligence). *Learning and Individual Differences, 18*(2), 258-263. doi:10.1016/j.lindif.2007.09.002

Cloninger, S. C. (2004). *Theories of Personality: understanding persons* (4th ed.). Upper Saddle River, New Jersey: Pearson Prentice Hall.

Costa, P. T., Terracciano, A., & McCrae, R. R. (2001). Sex differences in personality traits across cultures: Robust and surprising findings. *Journal of Personality and Social Psychology, 81*(2), 322-331.

De Anda, D., Baroni, S., Boskin, L., Buchwald, L., Morgan, J., Ow, J., Gold, J. S., & Weiss, R. (2000). Stress, stressors and coping strategies among high school students. *Children and Youth Services Review, 22*(6), 441-463. doi:10.1016/S0190-7409(00)00096-7

Fitch, B. D. (2004). *A test of the relationship between personality traits and test anxiety*. Retrieved from ProQuest Dissertations and Theses. (Accession Order No. 305049040).

Hair, J. F., Black, W. C., Babin, B. J., Anderson, R. E., & Tatham, R. L. (2006). *Multivariate data analysis* (6th ed.). Upper Saddle River, New Jersey, NJ: Pearson Prentice Hall.

Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2010). *Multivariate data analysis* (7th Ed.). New Jersey, NJ: Pearson Prentice Hall.

Ho, R. (2006). *Handbook of univariate and multivariate data analysis and interpretation with SPSS*. New York, NY: Chapman & Hall/CRC, Taylor & Francis Group.

Kammeyer-Mueller, J. D., Judge, T. A., & Scott, B. A. (2009). The Role of Core Self- Evaluations in the Coping Process. *Journal of Applied Psychology, 94*(1), 177-195. doi:10.1037/a0013214

Khosravi, M., & Bigdeli, I. (2008). The relationship between personality factors and test anxiety among university students. *Journal of Behavioral Sciences, 2*(1), 13-24.

Maruyama, G., & McGarvey, B. (1980). Evaluation Causal Models: An application of maximum likelihood analysis of structural equations. *Psychological Bulletin, 87*(3), 505-512.

McCrae, R. R., & Costa, P. T. (1992). Discriminant validity of NEO-PIR facet scales. *Educational and Psychological Measurement, 52*(1), 229-237. doi:10.1177/001316449205200128

McCrae, R. R., & Costa, P. T. J. (2010). *Professional manual for NEO™ personality inventory* (NEO ™ - FFI-3). Odessa, FL: Psychological Assessment Resources.

Putwain, D. W. (2007). Test anxiety in UK schoolchildren: Prevalence and demographic patterns. *British Journal of Educational Psychology, 77*(3), 579-593. doi:10.1348/000709906X161704

Schmidt, L. A., & Rinolo, T. C. (1999). The role of neuroticism in test and social anxiety. *Journal of Social Psychology, 139*(3), 394-395. doi:10.1080/00224549909598398

Spielberger, C. D., Gonzales, H. P., Taylor, C. J., Algaze, B., & Anton, W. D. (1978). Examination stress and test anxiety. In C. D. Spielberger & I. G. Sarason (Eds.), *Stress and anxiety* (Vol. 5, 167-191). New York, NY: Wiley.

Spielberger, C. D. (1983). *Manual for the State-Trait Anxiety Inventory*. Palo Alto: CA: Consulting Psychologist Press.

Spielberger, C. D., & Vagg, P. R. (1995a). *Test anxiety: Theory, assessment, and treatment*. Washington, DC: Taylor & Francis.

Tross, S. A., Haper, J. P., Osher, L. W., & Kneidinger, L. M. (2000). Not just the usual cast of characters: Using personality to predict college performance and retention. *Journal of College Student development, 41*(3), 323-335.

Zeidner, M. (1998). *Test anxiety: The state of the art*. New York: Plenum.

Arezou Asghari holds a master degree in Educational Psychology from Sahid Beheshti University of Tehran, Iran. Since 2009, she has been doing her Ph.d in the field of Educational psychology in Putra University Malaysia (UPM). Her research interests include personality traits, coping strategies, anxiety, child and adolescent development and mental health.

Associate Professor. *Dr. Rusnani Abdul Kadir* got her Ph. D in Counselling & Guidance in Kansas State University, Kansas, USA, in 1993. She started lecturing at Putra University (UPM) in 1984. She is currently working as a head of department. Her research interests include development of multicultural competence among Malaysian counselors, adolescents' health, career counselling, and school counselling.

Professor *Dr. Habibah binti Elias* is a professor and lecturer in Educational Psychology at the Faculty of Educational Studies, University Putra Malaysia. Her areas of interest are motivation, teaching, and learning. She is involved with research activities and consultancy work in the field of teaching and learning and special education. Her field of specialization is Educational Psychology and she has written several books and articles in refereed journals related to her areas of interest.

Dr. Maznah Baba was awarded a doctoral degree in Counsellor Education from Syracuse University (SU), New York, USA, in 1990. She started her lecturing career at Putra University (UPM) in 1980 after completing her MS in Guidance and Counselling from SU. Her current research interests include studying family stress and coping, especially among widows and orphans, and juvenile delinquency.