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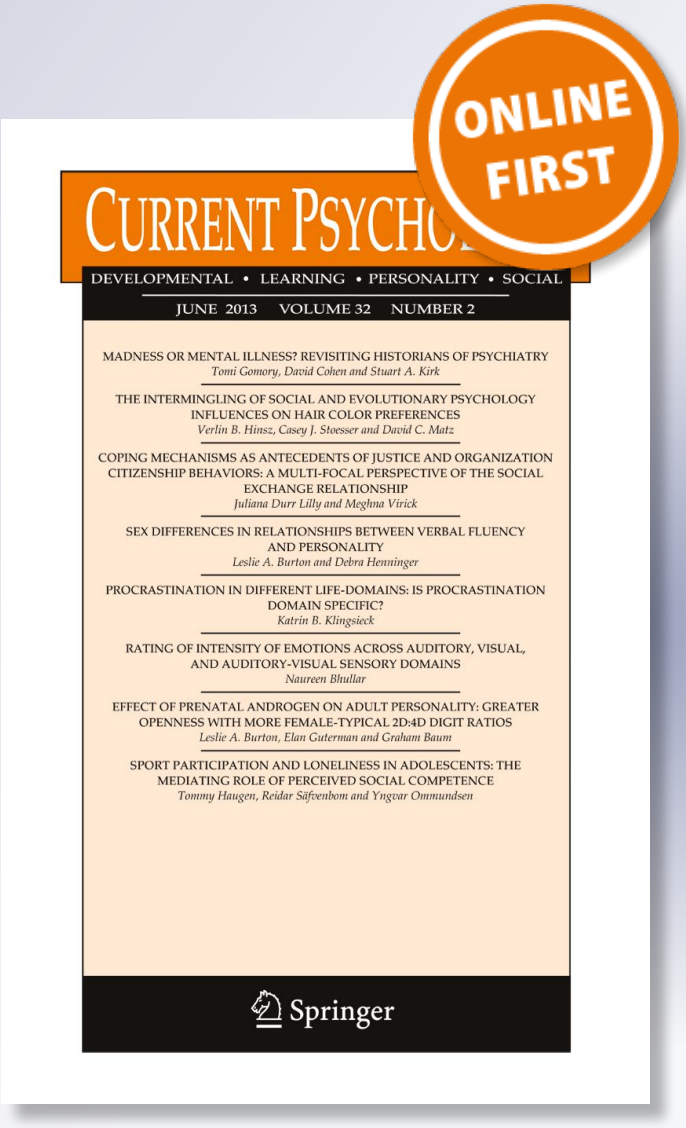
Current Psychology
A Journal for Diverse Perspectives on Diverse Psychological Issues

ISSN 1046-1310

Curr Psychol
DOI 10.1007/s12144-018-9804-z



Springer

Current Psychology
https://doi.org/10.1007/s12144-018-9804-z

Relationship between wisdom, perceived control of internal states, perceived stress, social intelligence, information processing styles and life satisfaction among college students

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Abstract
This study aimed to investigate the relationship between wisdom, social intelligence, perceived control of internal states, perceived stress, information processing styles and life satisfaction among college students. Three hundred and nine students (270 female and 39 male students with a mean age of 27 years) were selected using random cluster sampling method. The Self-Assessed Wisdom Scale, Perceived Control of Internal States Scale, Perceived Stress Scale, Tromso Social Intelligence Scale, Rational-Experiential Inventory and Satisfaction with Life Scale were used for data collection. Results showed that there were significant correlation between emotion regulation, humor (subscales of wisdom), social awareness, social skills (subscales of social intelligence), perceived control of internal states, perceived stress and life satisfaction. The information processing styles had no statistically significant relationship with life satisfaction. Furthermore, the multiple regression analysis revealed that perceived stress, humor and social skills were strongest predictors of life satisfaction among college students. The roles of these variables in life satisfaction were discussed.

Keywords Wisdom · Perceived control of internal states · Perceived stress · Social intelligence · Information processing styles · Life satisfaction

Introduction

Life satisfaction as a subjective concept refers to one's cognitive appraisal of his/her own life (Diener et al. 1985). Life satisfaction among college students has been introduced as an important issue for school administrators (Diener and Larsen 1993). It is significantly associated with the reduction of physical injury and mental disorder among college students (Valois et al. 2006, 2004). It is also associated with students' success and achievements (Martinez 2001). Therefore, understanding the predictors of life satisfaction could be of significant importance.

Various factors including physical health, social activities, socioeconomic status and environment can affect individuals' life satisfaction (Rode 2002; Biswas-Diener and Diener 2001; Koohsar and Bonab 2011). However, these factors cannot explain individuals' life satisfaction completely, and psychological characteristics appear to have important roles (Peterson et al. 1988). This study aimed to examine the contribution of wisdom and other psychological variables to life satisfaction.

Wisdom

Wisdom as a multidimensional concept has become a complex and challenging issue by various definitions (Kramer 2000; Baltes and Staudinger 2000; Baltes et al. 1995). According to the evolutionary perspective, wisdom could be considered as a process of cognition, virtue and what creates a good character (Csikszentmihalyi and Rathunde 1990). Baltes and Smith (1990) explained wisdom as a special knowledge, which could solve the problems about meaning of life. Sternberg (1998) introduced wisdom as an intelligence used to balance the short-term and long-term needs based on their value preferences. Despite the controversies over the concept of wisdom, studies have come to a consensus that wisdom is a combination of

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Published online: 17 February 2018

cognitive, reflective, and affective features (Ardelt 2003). Webster (2003) suggested five components for wisdom including 'experience', 'emotional regulation', 'reminiscence and reflectiveness', 'openness', and 'humor'. Wisdom develops during the experience of life. Accordingly, Noam (1996) stated that "people who have experienced difficult life histories are the ones who are propelled to greater wisdom and deeper meaning". Emotional regulation is identification, acceptance and application of emotions in a constructive method. Reminiscence and reflectiveness are tendencies to reminisce and review one's life that are necessary for development of wisdom. Openness refers to the exploration of possibilities, acceptance of discordant opinions and investigation of novel solutions to the current problems. Humor is another important element of wisdom, as wise individuals recognize, enjoy, and use humor in a variety of contexts and for different purposes (Webster 2003).

It is believed that understanding wisdom may influence the improvement of life satisfaction (Chandler 1991; Le 2011). Ardelt and Edwards (2015) stated a positive relationship between wisdom and subjective well-being, even after controlling for variables including age, gender, physical health, socioeconomic status. On the other hand, being purposeful in life mediated the relation between wisdom and well-being. Ardelt and Jeste (2016) also reported similar results and declared that wisdom, especially the reflective dimension, mediated the relationship between the experience of past life events and current well-being. However, Krause (2016) demonstrated that the relationship between humility and life satisfaction varied across wisdom levels.

Perceived Control of Internal States

It has been shown that a lack of perceived control could have a negative effect on individual's behavior, motivation, psychological and physical health (Pallant 2000). In some contexts, controlling emotional consequences of a situation may be more important than controlling the situation itself. In a study on perceived control for coping with cancer, Thompson et al. (1993) found a significant difference between controlling over event and outcome. It was important for participants to believe that they could control the course of disease.

Perceived Stress

Perceived stress as another psychological variable has a negative effect on mental health (Chang 1998). In the field of health psychology, stress is referred to a state of challenge or threat that disrupts the balance of life. Stress interferes with the function of memory and attention and can lead to the incidence of cognitive problems. Stress also enhances physiological arousal that leads individuals to wrong decisions making. Perceived stress may also culminate in diverse negative emotions such as fear, anxiety and sadness, as well as negative interpersonal behaviors (Sanderson 2004). Alleyne et al. (2010) revealed that high levels of perceived stress were associated with low levels of life satisfaction. Also, they found that perceived stress was one of the major predictors of life satisfaction among students. Paschali and Tsitsas (2010) also suggested that students with low levels of anxiety had more life satisfaction than those with high levels of anxiety. Similarly, Kaya et al. (2015) examined the relationship between stress and life satisfaction among Turkish college students. It was found that perceived stress was negatively associated with life satisfaction.

Social Intelligence

In addition to the above-mentioned variables, social intelligence also could be associated with life satisfaction. Thorndike (1936) believed that social intelligence could be considered as an ability to understand and describe intelligent action and behavior in relation to others. Silberman (2000) described the characteristics of social intelligence as understanding others, expression of feelings and personal ideas, expression of personal needs, provision and receipt of feedback to/from audience, motivating and inspiring others, provision of innovative solutions to complex situations, teamwork rather than individual work and being a good team member. Individuals with high levels of social intelligence are mainly able to solve problems in daily life and cope with threatening events through the use of appropriate strategies. Studies have also shown that social intelligence and various communications are essential for successful performance in life, occupation, and education (Garmaroudi and Vahdaninia 2006). In general, social intelligence is positively correlated with life satisfaction. Ozben (2013) and Malinauskas et al. (2014) indicated a positive relationship between life satisfaction and social skills as one of the components of social intelligence among students.

Information Processing Styles

Information processing styles are important determinants of psychological adjustment. Rational and experiential styles are two styles of information processing. The rational system is an inferential, conscious, relatively slow, and affect-free system. The experiential style is a learning system, which is preconscious, rapid, automatic, and is associated with affect (Pacini and Epstein 1999). Burns and D'Zurilla (1999) reported significant relationships between information processing styles and psychological variables including life satisfaction. Rezaei (2014) also reported that intuitive and rational information processing styles were significantly associated with life satisfaction.

Current Study

Since life satisfaction is considered a significant factor in students' health, success and achievement (Martinez 2001; Valois et al. 2006, 2004), it is required to examine the role of contributive variables in prediction of life satisfaction. Findings of this study could be helpful for enhancement of student's success and recognition of factors influencing students' life satisfaction. Additionally, identifying predictors of life satisfaction among college students can provide suggestions for academic success and counseling services in colleges. Therefore, the aim of this study was to examine the relationship between wisdom, perceived control of internal states, perceived stress, social intelligence, information processing styles and life satisfaction of college students. On the other hand, relationship between the components of wisdom, social intelligence and life satisfaction was considered as the goal of the study. Additionally, this study sought to understand the degree to which the proposed variables predicted life satisfaction.

Method

Participants

Using random cluster sampling method, 309 college students (270 female and 39 male students) were selected from different departments for more recruitment. Data were collected in the academic year of 2016–2017. The following demographic characteristics were reported by the students: age (Mean = 27 years, SD = 8.88), grade point average (GPA) score (Mean = 3), level of education (undergraduate: 94.2%, n = 291, postgraduate: 5.8%, n = 18), and marital status (married = 43%, n = 133, single = 55%, n = 170, divorced = 2%, n = 6).

Procedure

Researchers explained the purpose of the study to the students. After obtaining participant s' consent to take part in this study, they were requested to completed the questionnaires. They were informed that their participation would be voluntarily and their responses would remain confidential. Data collection tools were as follows respectively: the demographic data questionnaire, Self-Assessed Wisdom Scale (SAWS), Perceived Control of Internal States Scale (PCOISS), Perceived Stress Scale (PSS), Tromso Social Intelligence Scale (TSIS), Rational-Experiential Inventory (REI) and Satisfaction with Life Scale (SWLS).

Demographic Data Questionnaire A demographic form was designed to collect data regarding the participants' age, gender, marital status, GPA score and education level.

The Self-Assessed Wisdom Scale (SAWS; Webster 2003, 2007) SAWS is used to measure the subscales of wisdom including experience (e.g., "I have experienced many moral dilemmas"), emotion regulation (e.g., "I am good at identifying subtle emotions within myself"), reminiscence (e.g., "Remembering my earlier days helps me gain insight into important life matters"), openness (e.g., "I like to read books which challenge me to think differently about issues") and humor (e.g., "There is nothing amusing about difficult situations"). This 40-item questionnaire consisted of 8 items per subscale. Participants answered each item on a 6-point Likert scale (strongly disagree to strongly agree). The Cronbach's alpha coefficient of the SAWS was reported as 0.89 and its construct validity was appropriate (Noghabi 2017). The Cronbach's alpha coefficient in the present study was $\alpha = 0.82$.

The Perceived Control of Internal States Scale (PCOISS; Pallant 2000) PCOISS consisted of 18 items evaluating individual's perception of his/her ability to adjust or control the effects of disturbing events on emotions, thoughts, well-being and reactions (e.g., "Even when I'm under pressure, I can usually keep calm myself" and "Usually I can prevent myself from bad feelings"). Participants were asked to answer items on a 5-point Likert scale from strongly disagree to strongly agree. The Cronbach's alpha coefficient of the PCOISS was reported as 0.92 (Pallant 2000) and it was $\alpha = 0.90$ in the present study.

The Perceived Stress Scale (PSS; Cohen et al. 1983) Perceived stress was measured with the PSS evaluating thoughts and feelings about stressful events, controlling, overcoming and coping with stress experienced during last month. Participants were asked to rate their stress on a 5-point response scale (never to very often). An example item of this 14-item questionnaire was "Have you felt nervous and stressed during last month?". The Cronbach's alpha coefficient of the PSS was reported as from 0.84 to 0.86 (Cohen et al. 1983). In the present study the Cronbach's alpha coefficient was $\alpha = 0.80$.

The Tromsø Social Intelligence Scale (TSIS; Silvera et al. 2001) To measure social intelligence the TSIS was used. It consisted of 21 items evaluating social information processing (e.g., "I can often understand what others really mean through their expression, body language, etc."), social skills (e.g., "I am good at entering new situations and meeting people for the first time") and social awareness (e.g., "It seems as though people are often angry or irritated with me when I say what I think"). Participants were asked to answer items on a 5-point Likert scale (strongly agree to strongly disagree). The Chronbach's alpha coefficients of social information processing, social skills and social awareness were reported as 0.76, 0.86, and 0.66 respectively (Rezaei 2010). The Cronbach's alpha coefficient for total score was reported as 0.75 in the current study.

The Rational-Experiential Inventory (REI; Pacini and Epstein 1999) Individuals' preferences in information processing styles were measured with REI. It consisted of two 11-item subscales: experientiality and rationality. Example items were: "I like to get help from my inner feelings to solve life problems" (experientiality) and "I enjoy solving issues that require deep thinking" (rationality). Participants were requested to rate the items on a 5-point Likert scale (strongly disagree to strongly agree). The Cronbach's alpha coefficients for experientiality and rationality were reported as 0.85 and 0.84, respectively (Rezaei et al. 2013). In this study, the Cronbach's alpha coefficient was reported as 0.83.

The Satisfaction with Life Scale (SWLS; Diener et al. 1985) SWLS was used to evaluate participants' life satisfaction. It consisted of 5 items (e g., "My living conditions are excellent" and "I am satisfied with my life") on a 5-point Likert scale (strongly agree to strongly disagree). Bayani et al. (2008) reported the test-retest reliability and the Cronbach's alpha coefficient of the SWLS as 0.69 and 0.83, respectively. The Cronbach's alpha coefficient in the present study was reported as 0.80.

Results

Pearson correlation was used to investigate the relationship between the study's variables. The mean, standard deviation and correlation coefficients were presented in Table 1.

Two components of wisdom including emotion regulation and humor had significant positive correlations with life satisfaction. However, other components such as experience, reminiscence and openness had no statistically significant relationship with life satisfaction. The two components of social intelligence entitled social awareness and social skills were positively associated with life satisfaction, but no statistically significant relationship was observed between social information processing and life satisfaction. Perceived control of internal states had a significant positive relationship with life satisfaction. Perceived stress and life satisfaction were negatively correlated with each other. In addition, the information processing styles (rationality and experientiality) had no statistically significant association with life satisfaction. Perceived stress had strongest correlation with life satisfaction ($r = -0.53$) (Table 1).

Stepwise regression analysis was used to examine the role of the study's variables to predict life satisfaction (Table 2). It was found that perceived stress alone predicted 28% of the total variance in life satisfaction. In the second step, humor (one of the components of wisdom) entered the equation and increased the explanatory power of the variance to 31%. In the third step, the component of social skills was added and the variables of perceived stress, humor and social skills predicted 33% of the total variance of life satisfaction.

Table 1 Pearson's correlation coefficients between the components of wisdom, social intelligence, perceived control of internal states, perceived stress, information processing styles and life satisfaction ($N = 309$)

	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Life satisfaction	–												
2. Experience	0.01	–											
3. Emotional regulation	0.32**	0.34**	–										
4. Reminiscence	−0.03	0.35**	0.19**	–									
5. Humor	0.35**	0.21**	0.33**	0.13*	–								
6. Openness	0.09	0.43**	0.37**	0.21**	0.38**	–							
7. Social information Processing	0.05	0.25**	0.43**	0.16**	0.31**	0.28**	–						
8. Social awareness	0.18**	0.01	0.36**	−0.11	−0.03	0.02	0.07	–					
9. Social skills	0.12*	0.17**	0.19**	0.01	0.27**	0.23**	0.18**	0.05**	–				
10. Perceived stress	−0.53**	−0.05	0.36**	0.16**	−0.32**	−0.21**	−0.27**	−0.44**	−0.40**	–			
11. Experientiality	0.12	0.17**	−0.43**	0.13*	0.12	0.09	0.19**	0.10	0.04	−0.08	–		
12. Rationality	0.11	0.29**	0.26**	0.05	0.13*	0.41**	0.33**	0.29**	0.36**	−0.44**	0.17**	–	
13. Perceived control of internal states	0.43**	0.11	0.44**	−0.05	0.34**	0.27**	0.20**	0.34**	0.37**	−0.67**	0.15*	0.44**	–
Mean	16.86	31.85	29.69	32.18	27.52	30.02	30.32	20.31	19.49	34.05	39.30	39	58.77
Standard deviation	3.61	3.90	4.21	4.29	4.06	3.69	4.02	4.57	4.13	6.33	6.42	6.49	11.09

**$p < 0.01$; *$p < 0.05$

Table 2 Regression analysis to predict life satisfaction based on the study's variables

Regression models	Beta	R	R^2	Adjusted R square	Std. error of the estimate	F	P
Model 1.							
Perceived stress	−0.53	0.53	0.28	0.28	3.07	102.41	< 0.001*
Model 2.							
Perceived stress Humor	−0.46 0.20	0.56	0.31	0.31	3	60.48	< 0.001*
Model 3.							
Perceived stress Humor Social skills	−0.52 0.22 −0.15	0.58	0.33	0.32	2.97	43.70	< 0.001*

Discussion

This study was conducted to investigate the relationship between the components of wisdom, social intelligence, perceived stress, perceived control of internal states, information processing styles, and life satisfaction among students. It also examined the role of these variables in predicting life satisfaction. It was found that emotion regulation and humor were the only components of wisdom that had significant positive correlations with life satisfaction. Three components of wisdom including experience, reminiscence and reflectiveness, and openness did not show statistically significant associations with life satisfaction. From the components of social intelligence, social awareness and social skills had significant positive correlations with life satisfaction, and social information processing had no statistically significant correlation with life satisfaction. Also, statistically significant associations between perceived control of internal states and perceived stress with life satisfaction were reported. However, no statistically significant correlation between information processing styles (rationality and experientiality) and life satisfaction was reported. Results of regression analysis showed that perceived stress could alone account for 28% of the variance of life satisfaction. The variables of perceived stress, humor, and social skills could also explain 33% of the observed variance in life satisfaction.

Perceived stress was the strongest predictor of students' life satisfaction. The more an individual perceives stress, the less she/he will be satisfied with his/her own life. Individuals react differently to an identical stressful event and do not experience stress in a similar manner. These findings were consistent with the previous studies (Matheny et al. 2008, 2002; Shaul 2006; Kuppens et al. 2008; Alleyne et al. 2010; Paschali and Tsitsas 2010). This result indicates that coping skills should be taught to students to improve their life. According to the transactional model of stress (Matheny et al. 2008), the imbalance between perceived demands and available perceived coping resources can lead to stress. When perceived demands seriously are beyond coping resources, stress begins to respond. Therefore, students' ability to cope with stress could lead to an increase in their life satisfaction.

Humor was the second predictor of life satisfaction. This finding was consistent with that of the Mathieu's study (2008) indicating that happiness and humor could predict life satisfaction. Humor was one of the components of wisdom in the Webster's model and was considered a mature defense mechanism (Vaillant 1977). However, any type of humor cannot be considered wise. Sarcasm, playing a joke on others, and scoff are not placed in the category of wisdom. Whatever contributes to the strength of social bonds is considered wise humor and having a sense of humor in life can reduce individual's stress (Webster 2003). Humor is the source of closeness to others, leads to richer experiences, and increases life satisfaction. Humor also improves the immune system and mental health (Du Pre 1998) and consequently reduces the negative effects of stress (Malinauskas et al. 2014).

Social skill was only component of social intelligence, which could predict life satisfaction. Accordingly, when individuals benefit from greater social skills, have a high ability to get engaged in new social situations and adapt to these situations, they will become more satisfied with their life. Active listening, daring acts, and the establishment of relationship with others make individuals positively appraise their life. This result is consistent with other study findings (Malinauskas et al. 2014; Ozben 2013) that indicate the existence of a statistically significant relationship between social skills and life satisfaction among students.

The results of this study can have significant implications for academic professionals and counselors to improve the provision of services to students. Using these findings, counselors could help students with low levels of life satisfaction. Based on the students' scores on the Satisfaction with Life Scale (SWLS) in the present study, those with low scores could be encouraged to seek professional help and referred to Counseling Center of University. Due to strong roles of perceived stress in life satisfaction, stress coping, stress management and social skills should be included in the education programs.

Limitations and Future Directions

Application of self-report questionnaires for data collection could possibly lead to bias and inaccuracy of personal perceptions. Also, the generalization of the results to other contexts and cultures should be done with caution. Further studies are needed to improve the generalizability of the findings. Additionally, this study included five predictive variables of life satisfaction including wisdom, perceived control of internal states, perceived stress, social intelligence and information processing styles. Future studies could study other variables or dimensions influencing life satisfaction of students, e.g., social support, the levels of perceived stress or cognitive and affective facets of wisdom. Also, similar studies are needed to suggest programs to meet students' psychological needs.

Conclusion

In this study, emotion regulation, humor, social awareness, social skills, perceived control of internal states, and perceived stress had statistically significant relationships with life satisfaction. However, the results indicated that only perceived stress, humor and social skills could predict life satisfaction. Identifying predictors of life satisfaction would help us to increase students' life satisfaction. Specific training aimed at helping students cope with stress and improve their social skills should be developed based on the results. Also, the present study emphasizes the importance of future studies on the psychological predictors of life satisfaction of students.

Compliance with Ethical Standards

Ethical Approval All procedures performed in this study were in accordance with the ethical standards of the institutional and/or national research committee and the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

Informed Consent Informed consent form was signed by the participants who voluntarily agreed to take part in this study.

Conflict of Interest Author Akbar Rezaei declares that he has no conflict of interest. Author Elnaz Mousanezhad Jeddi declares that she has no conflict of interest.

References

Alleyne, M., Alleyne, P., & Greenidge, D. (2010). Life satisfaction and perceived stress among university students in Barbados. *Journal of Psychology in Africa, 20*(2), 291–297.

Ardelt, M. (2003). Empirical assessment of a three-dimensional wisdom scale. *Research on Aging, 25*(3), 275–324.

Ardelt, M., & Edwards, C. A. (2015). Wisdom at the end of life: an analysis of mediating and moderating relations between wisdom and subjective well-being. *Journals of Gerontology Series B: Psychological Sciences and Social Sciences*, 71(3), 502–513.

Ardelt, M., & Jeste, D. V. (2016). Wisdom and hard times: the ameliorating effect of wisdom on the negative association between adverse life events and well-being. *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences*. https://doi.org/10.1093/geronb/gbw137.

Baltes, P. B., & Smith, J. (1990). Toward a psychology of wisdom and its ontogenesis. In R. J. Sternberg (Ed.), *Wisdom: Its nature, origins, and development* (pp. 87–120). New York: Cambridge University Press.

Baltes, P. B., & Staudinger, U. M. (2000). Wisdom: A meta heuristic (pragmatic) to orchestrate mind and virtue toward excellence. *American Psychologist, 55*(1), 122–136.

Baltes, P. B., Staudinger, U. M., Maercker, A., & Smith, J. (1995). People nominated as wise: A comparative study of wisdom-related knowledge. *Psychology and Aging, 10*(2), 155–166.

Bayani, A. A., Koocheky, A. M., & Bayani, A. (2008). Reliability and validity of Ryff's psychological well-being scales. *Iranian Journal of Psychiatry and Clinical Psychology, 14*(2), 146–151.

Biswas-Diener, R., & Diener, E. (2001). Making the best of a bad situation: Satisfaction in the slums of Calcutta. *Social Indicators Research, 55*(3), 329–352.

Burns, L. R., & D'Zurilla, T. J. (1999). Individual differences in perceived information processing styles in stress and coping situations: Development and validation of the perceived modes of processing inventory. *Cognitive Therapy and Research, 23*(4), 345–371.

Chandler, H. M. (1991). *Transcendental meditation and awaking wisdom: A 10-year longitudinal study of self-development*. Doctoral dissertation, Maharishi International University, Fair field (Iowa).

Chang, E. C. (1998). Dispositional optimism and primary and secondary appraisal of a stressor: Controlling for confounding influences and relations to coping and psychological and physical adjustment. *Journal of Personality and Social Psychology, 74*(4), 1109–1120.

Cohen, S., Kamarck, T., & Mermelstein, R. (1983). A global measure of perceived stress. *Journal of Health and Social Behavior, 24*, 385–396.

Csikszentmihalyi, M., & Rathunde, K. (1990). The psychology of wisdom: An evolutionary interpretation. In R. J. Sternberg (Ed.), *Wisdom: Its nature, origins, and development* (pp. 25–51). New York: Cambridge University Press.

Diener, E., & Larsen, R. J. (1993). The experience of emotional well-being. In M. Lewis & J. M. Haviland (Eds.), *Handbook of emotions* (pp. 405–415). New York: Guilford Press.

Diener, E., Emmons, R. A., Larsen, R. J., & Griffin, S. (1985). The satisfaction with life scale. *Journal of Personality Assessment, 49*(1), 71–75.

Du Pre, A. (1998). *Humor and the healing arts: A multimethod analysis of humor use in health care*. Hillsdale: Lawrence Erlbaum Associates.

Garmaroudi, G., & Vahdaninia, M. (2006). Social health; assessment of students' social skills. *PAYESH, 5*(2), 141–147.

Kaya, C., Tansey, T. N., Melekoglu, M., & Cakiroglu, O. (2015). Stress and life satisfaction of Turkish college students. *College Students Journal, 49*, 257–261.

Koohsar, A. A. H., & Bonab, B. G. (2011). Relation between quality of attachment and life satisfaction in high school administrators. *Procedia-Social and Behavioral Sciences, 30*, 954–958.

Kramer, D. A. (2000). Wisdom as a classical source of human strength: Conceptualization and empirical inquiry. *Journal of Social and Clinical Psychology, 19*(1), 83–101.

Krause, N. (2016). Assessing the relationships among wisdom, humility, and life satisfaction. *Journal of Adult Development, 23*(3), 140–149.

Kuppens, P., Realo, A., & Diener, E. D. (2008). The role of positive and negative emotions in life satisfaction judgment across nations. *Journal of Personality and Social Psychology, 95*(1), 66–75.

Le, T. N. (2011). Life satisfaction, openness value, self-transcendence, and wisdom. *Journal of Happiness Studies, 12*(2), 171–182.

Malinauskas, R., Dumciene, A., & Lapeniene, D. (2014). Social skills and life satisfaction of Lithuanian first-and senior-year university students. *Social Behavior and Personality: An International Journal, 42*(2), 285–293.

Martinez, P. (2001). *Improving student retention and achievement: What do we know and what do we need to find out? LSDA reports.* Learning and skills development agency, regent arcade house, 19-25 Argyll street, London W1F 7LS, United Kingdom, England (reference no. A1195).

Matheny, K. B., Curlette, W. L., Aysan, F., Herrington, A., Gfroerer, C. A., Thompson, D., et al. (2002). Coping resources, perceived stress, and life satisfaction among Turkish and American university students. *International Journal of Stress Management, 9*(2), 81–97.

Matheny, K. B., Roque-Tovar, B. E., & Curlette, W. L. (2008). Perceived stress, coping resources, and life satisfaction among US and Mexican college students: A cross-cultural study. *Anales de Psicología/Annals of Psychology, 24*(1), 49–57.

Mathieu, S. I. (2008). Happiness and humor group promotes life satisfaction for senior center participants. *Activities, Adaptation & Aging, 32*(2), 134–148.

Noam, G. G. (1996). Reconceptualizing maturity: The search for deeper meaning. In G. G. Noam & K. W. Fischer (Eds.), *Development and vulnerability in close relationships* (pp. 135–172). Mahwah: Lawrence Erlbaum.

Noghabi, R. (2017). *Psychology of wisdom*. Tehran: Arjmand Book.

Ozben, S. (2013). Social skills, life satisfaction, and loneliness in Turkish university students. *Social Behavior and Personality: An International Journal, 41*(2), 203–213.

Pacini, R., & Epstein, S. (1999). The relation of rational and experiential information processing styles to personality, basic beliefs, and the ratio-bias phenomenon. *Journal of Personality and Social Psychology, 76*(6), 972–987.

Pallant, J. F. (2000). Development and validation of a scale to measure perceived control of internal states. *Journal of Personality Assessment, 75*(2), 308–337.

Paschali, A., & Tsitsas, G. (2010). Stress and life satisfaction among university students-a pilot study. *Annals of General Psychiatry, 9*(Suppl 1), S96.

Peterson, C., Seligman, M. E. P., & Vaillant, G. (1988). Pessimistic explanatory style is a risk factor for physical illness: A 35-year longitudinal study. *Journal of Personality and Social Psychology, 55*(1), 23–27.

Rezaei, A. (2010). The Tromsø social intelligence scale: Factorial structure and reliability of the Persian version of scale in the students population. *Journal of Modern Psychological Research (JMPR), 5*(20), 65–82.

Rezaei, A. (2014). Relationship between imaginary control of internal states, imaginary stress and intuitive-rational information processing styles with depression and life satisfaction among students of humanism in Tabriz Payam-e-Nour University during 2013-2014. *Journal of Rafsanjan University of Medical Sciences, 13*(5), 419–434.

Rezaei, A., Mohamadzadeh, A., Ghadampour, E., & Kordnoghabi, R. (2013). Optimism-pessimism and information processing styles as predictors of depression and life satisfaction. *Journal of Fundamentals of Mental Health, 15*(3), 402–411.

Rode, J. C. (2002). *The role of core evaluations within a comprehensive job and life satisfaction model: A longitudinal analysis*. Doctoral dissertation, ProQuest Information & Learning.

Sanderson, C. (2004). *Handbook of health psychology*. New York: Wiley.

Shaul, M. S. (2006). Exposure to threat of war and terror, political attitudes, stress, and life satisfaction among teenagers in Israel. *Journal of Adolescence, 29*(2), 165–176.

Silberman, M. (2000). *People smart: Developing your interpersonal intelligence*. San Francisco: Berrett-Koehler Publishers Inc..

Silvera, D. H., Martinussen, M., & Dahl, T. I. (2001). The Tromsø social intelligence scale, a self-report measure of social intelligence. *Scandinavian Journal of Psychology, 42*(4), 313–319.

Sternberg, R. J. (1998). A balance theory of wisdom. *Reviewof General Psychology, 2*(4), 347–365.

Thompson, S. C., Sobolew-Shubin, A., Galbraith, M. E., Schwankovsky, L., & Cruzen, D. (1993). Maintaining perceptions of control: Finding perceived control in low-control circumstances. *Journal of Personality and Social Psychology, 64*(2), 293–304.

Thorndike, R. L. (1936). Factor analysis of social and abstract intelligence. *Journal of Educational Psychology, 27*(3), 231.

Vaillant, G. (1977). *Adaptation to life*. Boston: Little Brown.

Valois, R. F., Zullig, K. J., Huebner, E. S., & Drane, J. W. (2004). Life satisfaction and suicide among high school adolescents. *Social Indicators Research, 66*, 81–105.

Valois, R., Paxton, R., Zullig, K., & Huebner, E. S. (2006). Life satisfaction and violent behaviors among middle school students. *Journal of Child and Family Studies, 15*, 695–707.

Webster, J. D. (2003). An exploratory analysis of a self-assessed wisdom scale. *Journal of Adult Development, 10*(1), 13–22.

Webster, J. D. (2007). Measuring the character strength of wisdom. *International Journal of Aging and Human Development, 65*(2), 163–183.