Research Article

Investigate the Relationship between Resiliency and Immune System Activity of Students

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ABSTRACT

Objective: The purpose of this study was to examine the investigate the relationship between resiliency and immune system activity of students. **Methods:** This research is descriptive and correlational. The population consist of all students of the faculty science of Azad university in Ardebil. 100 students were selected with sampling method. The students answered the same questionnaire including questionnaire of demographic and resilience. For measuring the activity of immune system were used of the polar radial immuno-tests. Data analysis included multivariate regression, pearson's r correlations, regression analysis, ANOVA analyses and SPSS software (package of Spss / pc + + ver18). **Results:** The results of this study show the there is a significant positive relationship between resiliency and immunoglobulin type A and G. In addition, the results of multiple regression analysis showed that perceived resiliency was predicted 0.192 percent of the immune system student.

Introduction

Our body's immune system protects us from germs like viruses, bacteria, fungal infections and parasites. Our immune system is made up of special organs, vessels and many different types of unique cells that each play a very important role in keeping us healthy. We call the cells of the immune system white blood cells. There are four major types of white blood cells: T cells, B cells, Neutrophils and Macrophage. Our bodies need lots of energy to live our day to day lives. We need energy to power our immune system and to do everything from reading, running…even sleeping and eating! All of the processes in your body that involve getting or spending energy are known as metabolism. A high metabolism occurs when your body is both getting a lot of energy and using a lot of energy, whereas a low metabolism occurs when the body does not have a sufficient quantity of energy to use. Our bodies get energy from food. A healthy diet is one that supplies our bodies with a balanced amount of sugars, fats, proteins, vitamins and all other nutrients we need to function properly (Bonanno, 2005). The capacity to cope and feel competent is referred to as resilience. Psychological resilience is defined by flexibility in response to changing situational demands, and the ability to bounce back from negative emotional experiences (J. H. Block & Block, 1980; Block & Kremen, 1996; Lazarus, 1993). Mental health is a fundamental element of the resilience, health assets, capabilities and

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positive adaptation that enable people both to cope with adversity and to reach their full potential and humanity. Notably, trait-resilient individuals experience positive emotions even in the midst of stressful events, which may explain their ability to rebound successfully despite adversity. This suggests that trait-resilient people may understand the benefits associated with positive emotions and use this knowledge to their advantage when coping with negative emotional events (Tugade & Fredrickson, 2002; 2004).Everyone experiences stress at one time or another – from major events such as the death of a loved one, to more minor stressors such as financial difficulties. Not surprisingly, exposure to stress is generally associated with a wide range of negative outcomes including decreased well-being, increased incidence of disease, Post-Traumatic Stress Disorder, Generalized Anxiety Disorder, and Major Depressive Disorder (Monat, Lazarus, & Reevy, 2007). However, not all individuals who are exposed to even high levels of stress develop such negative outcomes. Resilient person seem to do well in life, appearing to have the ability to bounce back and cope well in the face of profound problems. In fact, recent evidence suggests that a considerable number of individuals exhibit resilience, which is commonly defined as maintained or improved mental health in the face of stress, after short disruptions (if any) to normal functioning (Bonanno, 2005; Luthar, Cicchetti, & Becker, 2000). This definition, conceptualizes resilience as a potential outcome after exposure to stress rather than a psychological trait that leads to positive outcomes (cf. Norris, Stevens, Pfefferbaum, Wyche, &

Pfefferbaum, 2008). The aim of this study to was examine the investigate the relationship between resiliency and immune system activity of students.

Research methods

This research is descriptive and correlational. The population consist of all students of the faculty of science of Azad university in Ardebil. 100 students were selected with sampling method. The students answered the same questionnaire including questionnaire of demographic and resilience (Conner& Davidson, 2003) (including 25 questions).   The cronbach's alpha that obtained from the pilot data was 0.87 for resilience. For measuring the activity of immune system were used of the polar radial immuno-tests (Pakzad, 1994).   Data analysis included multivariate regression, pearson's r correlations, regression analysis, ANOVA analyses and SPSS software (package of Spss / pc + + ver18).

Results

The results showed that mean age of the subjects was 23.75 and SD was 3.81. According the results the 65 percent of students were female and 35% were male. Also, 69 percent of students were single and 31% were married.

The results of this study show the there is a significant positive relationship between resiliency and immunoglobulin type A (R=0.36) and G (R=0.57).

Table 1: The results of mean and standard deviation of variables

Variable	Mean	SD
Age	23.75	3.74
Resilience	105.60	9.29

Table 2: The results of correlation coefficient of variables and immune system activity in students

Independent variable	Statistics	Immunoglobulin type A	Immunoglobulin type G
Resilience	Correlation coefficient	0.25*	0.47**
	level of significance	0.021	0.002

Discussion and Conclusion

The purpose of this study to was examine the investigate the relationship between resiliency and immune system activity of students. The results showed that mean age of the subjects was 23.75 and SD was 3.81. According the results the 65 percent of students were female and 35% were male. Also, 69 percent of students were single and 31% were married.

The results of this study show the there is a significant positive relationship between resiliency with immunoglobulin type A and G. These results are in good agreement with result Winkielman et al (2012), Christopher et al, (2012) and Madeline et al, (2015). Christopher et al (2012) reports there is a significant relationship between resiliency with the immune system in adults. So as to increase resiliency factors led to an increase in the immune system. Madeline et al, (2015) showed activity central and peripheral immune system is directly related to the amount of resilience against stress. The explanation for this finding is that people with high resiliency expressed in coping with stressful life events are successful. So that, according to Winkielman et al (2012) People who resilience, often by creating positive emotions after the fight against the disease returned to normal.

In general it can be said resiliency were as predictors of immune function and the necessary training for the use of such variables by students and families should be provided. Because the data is collected through a questionnaire and like other self-report research results may be making the possibility of abuse. In addition, the results of multiple regression analysis showed that perceived resiliency was predicted 0.192 percent of the immune system student**.**

According to beta values the resiliency 0.46 predict of altering the activity of the immune system. In general it can be said resiliency is as a predictor variable for function of the immune system and the necessary training for use of most such variables be provided by the students and families. Therefore it is recommended that such research be done by using other methods of data collection such as interviews, observations, etc.

References

Anubhuti, D, & Darshana, S. (2011). Psychological Immunity and Coping Strategies: A Study on Medical Professionals**.** Indian Journal of Social Science Researches. 8(1,2), 36-47.

Blalock JE. (2005). The immune system as the sixth sense. J Intern Med.;257(2):126-38.

Bonanno, G.A. (2005). Resilience in the face of potential trauma. *Current Directions in Psychological Science, 14,* 135-138.

Bruwer, B., Emsley, R., Kidd, M., Lochner, C., & Seedat, S.(2008). Psychometric properties of the Multidimensional Scale of Perceived Social Support in youth. Comprehensive Psychiatry. 49(3), 195–201.

Conner, K. M, & Davidson, J. R. T. (2003). Development of a new resilience scale: The Conner-Davidson Resilience Scale (CD-RISC). Journal of Depression and Anexiety, 18(2), 76-82**.**

Davis PA, Corless DJ, Aspinall R, Wastell C. (2012). Effect of CD4(+) and CD8(+) cell depletion on wound healing. Br J Surg. 2001; 88(2):298-304.

House, J.S., Landis, K.R., & Umberson, D. (1988). Social relationships and health. *Science, 241*, 540– 545.

Kumpfer, K. L. (1999) Factor and processes contributing to resilience: The resilience framework. In: M. D. Glantz Lazarus, RS. Folkaman, S. (1984). Stress, appraisal and coping. New York: Springe: 127-139.

Lee, E.H. Yae Chung, B. Boog, H. & Hong Chung, K. (2004). Relationships of mood disturbance and social support to symptom experience in Korean women with breast cancer. J Pain Symptom Manage, 27(5), 425-433**.**

Madeline, L. Pfaua, b. Scott, J. & Russoa, B. (2015). Peripheral and central mechanisms of stress resilienc. Neurobiology of Stress. 1(1), 66–79.

Marc, J & ichael, H. (2009). Social support and its relationship to psychological, physical health, and immune variables in HIV-infection. Article first published online.

Matthews, KA. Caggiula, AR. McAllister, CG. Berga, SL. Owens, JF. Flory, JD. & Miller, AL. (2006). Sympathetic reactivity to acute stress and immune response in women. Psychosomatic Medicine, 57(5), 564–571.

Michael, H. (2012). Coping strategies and immune neglect in affective forecasting: Direct evidence and key moderators. Judgment and Decision Making, 7(1), 86–96.

Mooren, FC. Bloming. D. Lechtermann. A. Lerch. M.M & Volker, K. (2008). Lymphocyte apoptosis after exhaustive and moderate exercise. J Appl Physiol. 93(14), 147-153.

Moos, RH & Schaefer, JA. (1993). Coping Resources and Processes: Current Concept and Measure's .Journal of Health Psychology, 2: 297-314.

Peake, J. Wilson, G. Horden, M. Suzuki, K. Yamaya, K. & Nosaka, K. (2004). Changes in neurophil surface receptor expression, degranulation , and respiratory burst activity after moderate and high intensity exercise .J Appl Physiol. 97(7), 612-618.

Salimi, A., Jokar, B., Nikpoor, R. (2009). Internet and communication: Perceived social support and loneliness as antecedent variables. Persian. Psychol Studies, 5(3), 81-102.

Salzano R. (2003). Taming stress. Scientific American. 2003;289: 88- 98.

Sapolsky RM. The influence of social hierarchy on primate health. Science. 2005; 308(5722):648-52.

Schwarzer, R. (2000). Social-cognitive factors in changing health-related behavior. Current Directions in Psychological Science, 10(1), 47-51

Schwarzer, R., Dunkel-Schetter, C., & Kemeny, M. (1994). The multi-dimensional nature of received social support in gay men at risk of HIV infection and AIDS. *American Journal of Community Psychology, 22*(3), 319-339.

Shelley, E. Suzanne, C. Segerstrom, J. Taylor, H. Margaret, E. & Kemeny, K. (2015). Optimism Is Associated With Mood, Coping, and Immune Change in Response to Stress. Journal of Personality and Social Psychology, 45(5), 258-264.

Southwick SM, Vythilingam M, Charney DS. The psychobiology of depression and resilience to stress: Implications for prevention and treatment. Annu Rev Clin Psychol 2005;1:255–91.

Stice, j. Ragan, K. & Randall, U. (2006). Mental health. American Journal of psychiatry. 70(12), 79-95.

Winkielman, P. Stein, M.B. Hitckock, C. & Paulus, M. P. (2012). Association Between Individual Differences In Self- Reported Emotional Resilience And The Affective- Perception Of Neutral Faces. Journal of Affective Disorders. 32(6), 422-410.

Yu, DSF. Lee, FTD. & Woo, J. (2004). Psychometric testing of the Chinese version of the medical outcomes study social support survey (M O S-S S S-C). Res Nurs Health, 27(2),135-143.

Booker, K.C. (2004). Exploring school belonging and academic achievement in African American adolescents. Curriculum and Teaching Dialog, 6,131-143.

Zimet, G. Dahlem, N. Zimet, S & Farley, G. (1988). The multidimensional scale of perceived social support. Journal of Personality Assessment, 52(11). 30-41.