Prediction of High School Students' Life Satisfaction and Academic Performance Based on Locus of Control and Self-Esteem

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Abstract

Background: Psychological factors are among the most influential parameters in education. Among these effective traits, personal features centering around the self, have been of utmost importance specially in one's future of education and psychological well-being. Due to their critical period of life in terms of cognitive development, teenagers are subject to considerable academic and mental transformation at school.

Objectives: The aim of the present study was to predict life satisfaction and academic performance based on locus of control and self-esteem among school students.

Patients and Methods: Overall, 315 high school first-grade students (143 girls and 172 boys) were chosen from an Iranian city using random cluster sampling and responded to three scales of self-esteem (RSES; Rosenberg, 1965), locus of control (SCS; Ingels et al. 1992) and brief multi-dimensional students Life satisfaction scale (BMSLSS; Seligson, Huebner et al. 2003). Moreover, academic performance was measured via the students' total score average in the second semester of 2014 - 2015 academic year.

Results: Using Pearson's correlation coefficients and multi-variate analysis (stepwise regression method), the data analysis indicated that locus of control and self-esteem have a positive relationship with life satisfaction and predict twenty-five percent of variance changes of the variable. In addition, the results showed that the variables of locus of control and self-esteem have a positive and significant relationship with academic achievement and these two variables characterize eleven percent of the academic achievement variance changes.

Conclusions: In conclusion, the findings of this study revealed that locus of control and self-esteem play crucial roles in developing students' life satisfaction and academic performance.

Keywords: Life Satisfaction, Academic Performance, Locus of Control, Self-Esteem

1. Background

Developing and educating healthy and appropriately skillful people have constantly been one of the challenges, concerns, and serious targets of researchers and planners. In this respect, academic performance and life satisfaction are among important indicators when it comes to the judgment of the achievement of the above goals. As one of the significant components of individuals' mental well-being (1), life satisfaction has a specific place in positive psychology (2). This concept has been defined as the cognitive evaluation of one's life quality or particular aspects of life such as family, friends, and society (3). According to Diener and Biswas-Diener (4), individuals with higher levels of life satisfaction usually try to do their duties correctly and are productive in their jobs, something that can lead these people to increased levels of satisfaction and feelings of the ab-

sence of boredom in life. Larsen and Eid (5) believed that individuals with higher life satisfaction enjoy characteristics, which make them more sociable and philanthropist; features that contribute to individual's problem-solving abilities and peace. The literature on life satisfaction shows that low life satisfaction is related to consequences such as violent behaviors (6), neuroticism (7), depression, anxiety and social stress (8).

Academic performance is also so important in education that researchers consider it as an indicator of student's coping with school and future successes (9). In addition, students' academic performance has a large influence on all aspects of their lives such as place of residence, type of job, their responsibilities in life and society, their social relations, and thinking process. Parker et al. (10) believed that students' lack of academic readiness would impose large individual and social costs on the society, indi-

vidual and family. Researches show that low academic performance in middle school would be considered as the beginning of many anti-social behaviors such as drug and alcohol abuse and committing crimes. On the other hand, students with good academic performance are more likely to enter universities, become social individuals, who are able to control their own motivations, and earn more income (11).

In this respect, the important role of academic performance and life satisfaction in educational systems and students' future has stimulated researchers to learn about the factors influencing these variables. Studies show that self-esteem and locus of control are among psychological variables, which can have an effective role in improving academic performance and life satisfaction. Self-esteem refers to the value and acceptance of one's own self. Regarding the importance of self-esteem in psychological theories, Brockner and Hulton (12) believe that although Adler (1927), Rogers (1951) and Sullivan (1953)'s person-based theories present different perspectives about the individual, all of them agree that self-esteem plays an effective role in one's coping and adjustment; and this shows the importance of self-esteem in one's self-awareness.

According to Kernis (13), self-esteem is a complicated and general concept rooted in one's evaluation of him or herself based on personal performance and others' judgments. Regarding self-esteem, people are categorized under high and low levels and each can highly affect present and future lives of the individuals. Low self-esteem can be related to life failures and be the root of many of the inappropriate behaviors against the person, a matter that influences his or her life satisfaction (14, 15). High self-esteem, on the other hand, is related to positive characteristics like initiative, handling problems skillfully, tolerating challenges and failures, happiness, and even a longer life. People's self-esteem can be investigated by observing behaviors, self-reports or questioning those in their surrounding environment. Studying elementary and middle school students, Bowen (16) concluded that 70% of the students have normal levels of self-esteem, and about one-fourth of them have low self-esteem. He also showed that students with low self-esteem in middle school are more than those in elementary school. Finally, Weare (17) and Konarska (18) have enumerated self-esteem as an effective factor in determining students' life style, academic achievements, and mental and emotional well-being.

Another important variable of the present research was locus of control. The term locus of control was introduced by Rotter (1954), McClun and Merrell (19) define locus of control as one's confidence and belief in his or her control over personal affairs. Locus of control can be external or internal. Those with internal locus of control be-

lieve that events are the consequences of their acts and decisions (20). On the other side, those with external locus of control believe that consequences of their behaviors are determined by fate and destiny (21). Different studies (19-21) show that students with external locus of control have poor conditions at school, achieve less and feel stress and shame. On the other hand, students with internal locus of control enjoy higher self-esteem levels. Also, Skinner et al. (22) believe that one's perceived control is a strong predictor of behavior, emotion, motivation, performance, success and failure in different domains of life. In addition, those with high levels of locus of control are significantly more successful than those with low levels of (20, 23) locus of control (24).

As mentioned, psychological variables of self-esteem and locus of control play significant roles in improving academic performance and life satisfaction. Gadermann et al. (25) believe that because of biological changes during teenage years, understanding students' level of life satisfaction during these years helps researchers gain a better understanding and awareness of the relationship among developmental characteristics of the period such as social adjustment, mental health and performance. In addition, cultural differences are an evidence of the complicated effect of self-esteem on behavior.

2. Objectives

Accordingly and with regards to the importance of understanding the above-cited variables and their relations in different cultures, the purpose of the present study was to predict life satisfaction and academic performance variables based on locus of control and self-esteem among Iranian students.

3. Patients and Methods

The research method used for the present study was descriptive and the design was correlational. The research sample included all male and female first-grade students (n = 10600) of public middle schools (n = 43) in Baharestan city during 2014 to 2015 educational year. From this group, 315 students (143 females (45.4%) and 172 males (54.6%)) were selected from 10 schools using cluster random sampling. To select the sample, each district was considered as a cluster, and as the approximate number of the students and schools as well as the mean and standard deviation of the pilot done in each district were equal, three schools for females and two schools for males were selected from district 1 given more number of female students and schools there, and three schools for males and two schools for females were selected from district 2 given more number of

male students and schools there. The age of participants ranged from 14 to 17 (m = 15.08, SD = 1.02) and the dispersion of the socioeconomic status of their families was as follows: low (45.20%), average (44.90%) and high (9.90%).

3.1. Instruments

Altogether, three standard instruments were used in this study. They were specific scales to measure the students' life satisfaction, locus of control and self-esteem levels.

3.1.1. Brief Multidimensional Students' Life Satisfaction Scale (BMSLSS)

In order to measure high school students' life satisfaction, the brief multidimensional scale of life satisfaction (26) was administered. This scale includes five items, each devoted to one of the five domains of life satisfaction including family, school, friends, self and life environment. Responses to items were scored by a four-point scale (ranging from 1 = strongly disagree to 4 = strongly disagree). The maximum and minimum scores on this scale are 20 and 5, respectively. The total score of the items in the scale indicates the general life satisfaction of the individuals. Seligson et al. (26) believed in the appropriate psychometric features of this scale for measuring teenagers' life satisfaction. In the present study, using Cronbach's alpha coefficient, the reliability coefficient for the scale was 0.67. Also, the results of confirmatory factor analysis showed that the model was well fit (X^2/DF = 0.98, RMSEA = 0.00, GFI = 1, AGFI = 0.98, CFI = 1).

3.1.2. Scale of Locus of Control (SCS)

Locus of control refers to one's conception of control over his/her own life and the way he or she adjusts him herself to life events. locus of control was measured by six items (e.g. good luck plays an important role in my life events) on a 4-point Likert-type scale that ranges from 4 (strongly agree) to 1 (strongly disagree). The reliability coefficient through Cronbach's alpha values for the locus-of-control was 0.71 (27). In this study, the reliability of the scale was 0.60 and it was validated through factor analysis, which led to the omission of one of the items (CFI = 0.99, AGFI = 0.97, GFI = 99, RMSEA = 0.03, X^2/DF = 1.02).

3.1.3. Rosnburg Self-Esteem Scale (RSES)

Rosenburg self-esteem scale (28) was used in this study to measure the students' self-esteem. The scale consists of 10 self-report items, which state the general feeling of one's value or acceptance. The maximum and minimum scores on this scale are 40 and 10, respectively, and higher scores show higher levels of self-esteem. The reliability of the scale is high. Test-retest correlation is basically between 0.82 and 0.88 and Cronbach's alpha for the scale in different samples is between 0.77 and 0.88 (28). In this study, Cronbach's alpha for the reliability of the scale was calculated as 0.68. The scale was also validated through factor analysis (CFI = 0.91, AGFI = 0.90, GFI = 0.95, RMSEA = 0.07, X^2/DF = 2.92).

3.1.4. Academic Performance

In this study, the grade point average (GPA) of the students for the first semester of the academic year of 2014 to 2015 in the lessons of the first grade of high school (e.g. English, literature, physics, chemistry, biology, etc.) was used as the measuring indicator for academic performance. These exams were made by the teachers of each course and on basis of the content of each lesson indicated by the organization for devdeloping textbooks within the ministry of education of Iran. The scores of students in the final exam can summarize their educational performance in different learning scopes and is borrowed from the shared decision of the teachers (29). The GPA of the achievement tests has been verified as a creditable instrument to assess educastional performance in different studies (30-32).

3.2. Analysis

The data was analyzed by Lisrel 8.72 and SPSS 16 software. Data analysis was done in two phases. At first, descriptive statistics centering on correlation coefficient was calculated for all the variables. Using multivariate regression analysis (stepwise method), prediction of life satisfaction and academic performance based on locus of control and self-esteem variables was conducted in the next stage.

4. Results

In this study, with respect to the fact that all the students are in a small age range, only their first differences concerning the study variables (self-esteem, locus of control, life-satisfaction, and educational performance) were analyzed using the independent t-test. As the results of Table 1 show, there are no significant differences among boy and girl students regarding their self-esteem, locus of control, life-satisfaction, and academic performance. Henceforth, performing analysis on all data to discover the relationships among the variables is possible.

Descriptive statistics including mean, standard deviation, skewness, kurtosis, and correlation coefficient among the variables was applied for the total sample, to investigate its characteristics. For determining normality, skewness and kurtosis values were used. If the estimated z

Table 1. Comparing Mean Values of Male and Female Students Among the Research Variables via Independent T-test[a]

Variable	Gender[b]		T-test	Df	P Value
	Female (N = 143)	Male (N = 172)			
1. LC	12.5 ± 2.80	13.13 ± 3.03	1.50	313	0.13
1. SE	30.12 ± 4.71	29.51 ± 4.76	1.14	313	0.25
3. SS	12.96 ± 2.35	12.90 ± 2.24	0.22	313	0.82
4. AP	15.95 ± 2.28	15.50 ± 2.58	1.50	313	0.13

Abbreviations: AP = academic performance; KU, kurtosis; LC, locus of control; M, mean; SE, self-esteem; SS, self-satisfaction; SD, standard deviation; SK, skewness.
[a]P < 0.05 level.
[b]Values are expressed as mean ± SD.

value for skewness and kurtosis was between critical values of ± 2.58 at 0.01 significance level or ± 1.96 at 0.05 significance level, the distribution of data was considered normal. As is evident from Table 2, the results for skewness and kurtosis statistics show normal distribution of the research variables. In addition, given the results for Pearson correlation coefficient (Table 2), the variable self-esteem has the highest correlation coefficient with life satisfaction (r = 0.49; P < 0.01) and academic performance (r = 0.29; P < 0.01).

Since Pearson correlation coefficient cannot determine each predictive variable's contribution to explain the variance of the criterion variable, stepwise regression analysis was used to predict variance changes of life satisfaction and academic performance variables based on self-esteem and locus of control (Table 3). Regarding the prediction of life satisfaction variances based on stepwise regression analysis, the self-esteem variable was first entered into the model, which explained 22% of the variance of life satisfaction (ΔR^2 = 0.23; F1, 313 = 97.12; P < 0.001). Locus of control was added to the model in the next step by which the predictive strength of the model increased from 23% to 25% (ΔR^2 = 0.25; F1, 312 = 8.64; P < 0.001).

Results from Table 3 show that self-esteem (t = 10.38, B = 0.54) and locus of control (t = -2.94, B = -0.15) significantly account for the variance of life satisfaction, and self-esteem is a stronger predictor of life satisfaction when compared to locus of control. Also, the variance inflation factor (VIF) statistic did not confirmed any multicollerity problem. Finally, Durbin-Watson statistics close to two indicates the independence of error sentences. In summary, the two statistics and descriptive indicators mentioned above show the acceptability of regression analysis assumptions.

Regarding academic performance, self-esteem was first entered as a result of its higher correlation in stepwise correlation analysis and the results showed that the variable could explain 8% of variance in academic performance (ΔR^2 = 0.08; F1, 313 = 29.13; P < 0.001). In the next step, locus of control was entered, which resulted in the model's predictive strength increase to 11% (ΔR^2 = 0.11; F1, 313 = 9.38; P < 0.001). According to the results from Table 3, self-esteem (t = 3.91, B = 0.22) and locus of control (t = 3.04, B = 0.17) significantly explain the variance of academic performance and self-esteem is a stronger predictor of academic performance when compared to locus of control. In addition and with regards to the mentioned points, investigating Durbin-Watson indicators and variance inflation factor ensured multivariate regression analysis assumptions (Table 4).

5. Discussion

The purpose of the present research was to predict school students' life satisfaction and academic performance based on locus of control and self-esteem. The results showed that self-esteem is positively and significantly correlated with life satisfaction and explains considerable variance of students' life satisfaction. Therefore, it is understood that one's judgment about his or her worth, plays an important role in his or her view and attitude towards family, friends, self and the living environment. Such finding is in line with previous studies (14, 15, 33, 34).

Henceforth, it is emphasized that teachers, parents and all those, who are related to teenagers, consider respect and attention to teenagers' personality and promoting their sense of worth as a humane duty. The other finding of the research dealt with the relationship between locus of control and life satisfaction which, in spite of being positive, was not significant and locus of control explained a bit of the variance of life satisfaction. It can be said that one's belief and trust in controlling his or her daily events to some extent influences his or her philosophy of life, positively. This finding is not strongly in line with other research findings (e.g. (22, 35, 36)), the reason of which can be related to differences between Iranian students and other

Table 2. Mean Scores, Standard Deviations, and Zero Order Correlations Between Study Variables

Variable	1	2	3	4	3
1. LC	1				
1. SE	0.38[a]	1			
3. SS	0.05	0.48[a]	1		1
4. AC	0.29[a]	0.26[a]	0.07	1	0.07
M	12.88	29.79	12.93	15.70	12.93
SD	2.94	4.75	2.29	2.61	2.29
KU	-0.17	0.39	0.79	1.82	0.79
SK	0.29	-0.32	-0.72	-1.32	-0.72

Abbreviation: AC = academic performance; KU, kurtosis; LC, locus of control; M, mean; SE, self-esteem; SS, self-satisfaction; SD, standard deviation; SK, skewness.
[a]$P < 0.05$ level.

Table 3. Results of Stepwise Regression Analysis to Predict Life Satisfaction[a,b]

Variable	R	B	SE B	β	t	P Value	VIF	DW
Self-esteem	0.488	0.26	0.02	0.54	10.38	0.001	1.16	1.95
Locus of control	0.509	-0.12	0.04	-0.15	-2.94	0.004	1.16	

[a]Predictive variables: self-esteem; locus of control.
[b]$P < 0.05$ level.

Table 4. Results of Stepwise Regression Analysis to Predict Academic Performance[a,b]

Variable	R	B	SE B	β	t	P Value	VIF	DW
Self-esteem	0.29	0.20	0.05	0.22	3.91	0.001	1.16	1.71
Locus of control	0.33	0.09	0.03	0.17	3.04	0.002	1.16	

[a]Predictive variables: self-esteem; locus of control.
[b]$P < 0.05$ level.

societies regarding age, race, ethnicity and religion; factors which according to Mirowsky and Ross (36) are effective on individuals' locus of control.

The results of this study also showed that self-control and locus of control are positively and significantly correlated with academic performance and these two variables considerably predict variances in academic performance. Such finding is consistent with studies such as Botten et al. (37) or Pullmann and Allik (38), who showed self-esteem to be positively correlated with academic performance. The findings are also in line with McClun and Merrell (19), Tella et al. (21), Gizir and Aydin (20) and Nordstrom and Segrist (23) showing a relationship between individuals' perceived control and academic performance. In conclusion, the results from the present and other studies showed that psychological variables of self-esteem and locus of control have important roles in the orientation and perspective of the students toward academic consequences.

5.1. Implications and limitations of the Study

The results from the present research showed that self-esteem and locus of control have truly influential roles in improving life satisfaction and academic performance of school students. Accordingly, evaluation of students' self-esteem and locus of control by counselors, school principals and planners can be used in explaining the reasons for their poor performance and demotivation. In addition, providing appropriate programs for parents and teachers to be informed about the importance of self-esteem and locus of control in coping and academic performance can be helpful in promoting and attracting the culture of respect to students' capabilities.

Like any other study, the present research had some limitations, some of which were as follows. First, the sample was relatively small and it was only selected from first-grade students in high schools. Second, since studies show the effectiveness of age, gender, and religious beliefs on in-

dividuals' attitude toward life, it is important to conduct more research to understand and control the relationship of such factors with locus of control. Third, data collection was only done based on questionnaires. Therefore, using other tools like interviews and observations can be helpful in understanding and explaining the findings of the present study.

Acknowledgments

Footnote

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