

AN EXAMINATION ON THE PREDICTIVE VARIABLES OF ADOLESCENTS' LIFE SATISFACTION

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ABSTRACT

The aim of this study is to examine whether locus of control, Internet addiction and obesity are the predictor of adolescents' life satisfaction. The research conducted with the relational screening model was conducted on 402 students who study at high school in Kayseri province and selected through random sampling. The research data was obtained with the Satisfaction with Life Scale, the Internet Addiction Scale, Locus of Control scale as well as the body-mass index (BMI) to determine if students were obese. To analyze the data, Pearson's Correlation Product Moment Correlation Coefficient and Multiple Regression Analysis techniques were utilized. As a result of the analysis, Internet addiction, the subdimensions of the Internet addiction and obesity explained 30% of total variance regarding adolescents' life satisfaction, and the most powerful predictor variable is obesity. It was also found as a result of the research that the locus of control did not predict adolescents' life satisfaction. It is thought that the findings obtained will shed light on future studies concerning adolescents.

Keywords: Life satisfaction, adolescent, locus of control, internet addiction, obesity.

INTRODUCTION

Defined as a transition period between childhood and adulthood, adolescence is defined as growing, growing to maturity. While transiting from childhood to adulthood during adolescence, various physiological, psychological and social changes occur. These changes and developments shape adolescent's life. According to Ericson, adolescence is a period during which adolescents get to know themselves and their roles in the society (Burger, 2006). The development of identity gains importance during adolescence (Erikson, 1968). Youth is the most dynamic element of a society, including the adolescence within. Adolescents are the group which is the hardest to be perceived socially. This group also represents future and energy of the society. In studies conducted on society, adolescents constitute a part that cannot be neglected (Burger, 2006).

Life satisfaction reflects general concepts such as what is obtained as a result of the comparison between the things one own and the things one wish to own (Diener, Emonos, Larsen & Griffin, 1985), achievement of one's goals and ideals (Bradley & Crownly, 2004), meeting the basic needs (Leung & Leung, 1992) and achievable objectives (Zullig, Pun & Huebner, 2007). The concept of life satisfaction was first suggested by Neugarten in 1961. Life satisfaction generally affects individual's all life and several aspects of this life. According to Martin, Huebner & Valois (2008), life satisfaction is affected by instant emotional experiences, prejudices and social attraction. Schmitter, Zisselman & Woldow (2003) listed the factors affecting life satisfaction as follows: Being satisfied with one's own life, finding life to be worth-living, whether the objectives are achieved, positive personality, regarding oneself as physically well, having the economic welfare and sociability. According

to Diener & Lucas'a (1999), the areas of life satisfaction are job, family, pastime, health, and money, self and inner circle of the person. It was stated that there are four internal traits of individuals with a positive life satisfaction: self-esteem, the feeling of personal control, optimism and extroversion (Myers & Diener, 1995; Fogle, Huebner & Laughlin, 2002). It was also stated that individuals with decreased life satisfaction are more prone to both psychological and social problems (such as depression, anxiety and weaker social interaction) (Furr & Funder, 1998; Seligson, Huebner & Valois, 2005; Huebner & Gilman, 2006). It was found in some surveys that life satisfaction levels decline before the depression period (Seligson Huebner & Valois, 2005). Lower life satisfaction levels have negative consequences such as mental-physical health problems, diet-exercise, sexual risk-taking, drug and alcohol abuse and suicide (Huebner, Valois, Paxton & Drane, 2005; Chaplin, 2009).

In some research that examined the relation between life satisfaction and psychological variables during adolescence, it has been found that life satisfaction is positively related to variables such as self-esteem, hope (Gilman & Huebner, 2006); social self-efficacy, extroversion (Fogle, Huebner & Laughlin, 2002); positive interpersonal relationships, personal adaptation (Gilman & Huebner, 2006); and peer engagement (Nickerson & Nagle, 2004). On the other hand, life satisfaction is negatively in relation with social stress, anxiety and depression (Gilman & Huebner, 2006); neuroticism (Fogle, Huebner & Laughlin, 2002); external locus of control, clinical disharmony (Huebner & Gilman, 2006); and violent behaviors (Valois, Paxton, Zullig & Huebner, 2006). Higher levels of life satisfaction among adolescents are caused by extrovert temperament, active coping, internal locus of control, positive concept of self and purposes in life, significant participation and social activities. Adolescents' lower levels of life satisfaction increase drug and alcohol abuse and psychopathological (internal and external) behaviors (Huebner, 2004). It was also stated in some studies that there is an indirect relationship between adolescents' life satisfaction, stress and internal behaviors (McKnight, Huebner & Suldo, 2002) and a mid-level relationship between stress and external behaviors (Gilman & Huebner, 2006).

There are studies showing that adolescents achieve life satisfaction more, but some other studies found that life satisfaction increases as the age gets older. Other studies concluded that general life satisfaction declines in the first years of adolescence compared to childhood (Chang, Chang, Stewart & Au, 2003) and as the age gets older in the early adolescence, general life satisfaction levels decrease (Casas, Figuer, Gonzalez, Malo, Alsinet & Subarroca, 2007; Chipuer, Bramston & Pretty, 2003; Goldbeck, Schmitz, Besier, Herschbach & Henrich, 2007). There are several factors related to adolescents' life satisfaction. One of these factors/variables is locus of control (Branholm, Fugl-Meyer & Frölunde, 1998). Locus of control represents the perceptions regarding to what extent individuals control their surroundings (Gerrard, Reznikoff & Riklan, 1982). It offers an explanation about attributing individual's behaviors to internal or external powers (Gordon, 1996).

Individuals with internal locus of control attribute events to their own behaviors while those with external locus of control explains the reason for events as luck, fate or other powerful factors (Bernardi, 2001; Branholm, Fugl-meyer & Frölunde, 1998). It was observed that extrovert adolescents have high levels of life satisfaction while introvert adolescents' levels of life satisfaction are quite lower (Zullig, Pun & Huebner, 2007). Internalized or externalized, problematic behaviors affect adolescents' general wellbeing while problems they experience hinder the adaptation process of individuals during adulthood. In this context, it was stated that external locus of control is related to lower level of life satisfaction and so is internal locus of control to higher level of life satisfaction (Abu-Bader, Rogers & Barusch, 2002;

Zawawi & Hamaideh, 2009). Rapid changes in technology have their impacts on adolescents' life satisfaction. Another variable that affects life satisfaction is Internet addiction. It is known that life satisfaction during adolescence and Internet addiction have an opposite relationship (Ko, Yen, Chen, Chen & Yen, 2005; Ko, Yen, Yen, Lin & Yang, 2007; Wang Chen, Lin & Wang 2008). Long-term use of Internet may cause academic achievement to decrease and interpersonal relations to fail, therefore declining the levels of life satisfaction. Moreover, it may have a negative impact on individuals' life satisfaction when used as a tool to evade problems (Wang, Chen, Lin & Wang, 2008). The search for satisfaction in virtual environment by adolescents may cause problematic Internet use (Huang & Shen, 2010). The findings of studies, in which the relationships between the intended use of Internet and life satisfaction are examined, are contradictory. It was concluded in some studies that use of Internet for communicational purposes is not in relation with life satisfaction (Cotten & Bowman, 2004). Carden and Rettew (2006) stated that there is a negative relationship between adolescents' life satisfaction and the social use of Internet. It was also found that those with lower levels of life satisfaction feel safer on Internet and appreciate establishing relationships on Internet (Livingstone & Helsper, 2007). What was found in another research is that use of Facebook provides great advantage for those with lower life satisfaction and is in relation with wellbeing (Ellison, Steinfield & Lampe 2007).

Adolescents' risky behaviors (e.g. alcohol and drug abuse, violence and aggression, sexual activities), psychopathological symptoms (depression, anxiety, lower confidence and loneliness) and physical health (eating behavior, obesity) are related to life satisfaction (Huebner, Suldo & Valois, 2005). Ellison, Steinfield & Lampe (2007) found obesity to be on higher levels among individuals addicted to Internet. Obesity is a chronic energy metabolism disorder contributed by environmental, psychological and genetic factors that is caused by excessive fat accumulation in the body as a result of malnutrition and overnutrition and may cause physical and mental problems, affect the time, quality and satisfaction of life negatively and result in early deaths (Agras Hammer, McNicholas, & Kraemer., 2004; Aronne, 1998; Donohoue, 2004; Klein, Burke, Bray, Blair, Allison, Pi-Sunyer, 2004; Maffeis, 2000; Söderlund, Fisher & Johansson, 2009). The obesity observed during adolescent may cause several disorders such as diabetes, heart diseases, hypertension, and asthma at later ages (Rodriguez, Winkleby, Ahn, Sundquist, & Kraemer, 2002; Lobstein, Baur, Uauy, 2004).

It is known that higher body-mass index observed among adolescents, or "obesity", lowers the quality of life (Schwimmer, Burwinkle & Varni, 2003). It has negative impacts on adolescents' self-perceptions (self-esteem, self-perception of body, cognitive efficacy and social adaptation) (Friedlander, Larkin, Rosen, Palermo & Redline, 2003). What underlies this is that a harmonious social life enables individuals to make use of their life more positively, help them to be satisfied with social relationships and increase the quality of their lives (Schwimmer, Burwinkle & Varni, 2003). East (2010) concluded that adolescents develop lower self-esteem due to negative perception of body image; thus, their life satisfaction is affected by eating disorders, concern about weight, anxiety and taking no pleasure in life. Life satisfaction is closely related to mental health (Proctor, Linley & Maltby, 2009). For youngsters, lower life satisfaction is in relation with psychological, social and behavioral problems while higher life satisfaction is related to good mental health (Khakoo, 2004). Higher life satisfaction provides adolescents with an important advantage in terms of psychological and social development. Life satisfaction and positive feelings protect youngsters from psychological and behavioral problems and mitigate the effects of stressful life events (Park, 2004). Doing their developmental duties during life and exhibiting a positive attitude towards life helps life satisfaction increase (Dockery, 2004). In the light of

such studies, it was thought that life satisfaction is worthy of notice in early adolescence in terms of psychologically-oriented factors such as Internet addiction, locus of control and obesity. Therefore, determining the factors affecting life satisfaction in this phase is of importance for adolescents' psychological development (Huebner, 2004).

METHOD

The population of this research conducted in accordance with the relational screening model is composed of students who study at Kayseri Kadı Burhaneddin Anatolian Vocational and Technical High School, Kayseri Anatolian Vocational and Technical High School, Sami Yangın Anatolian High School and Şeker High School. The sample of the research comprises 221 male (55%) and 181 (45%) female students, 402 students totally, selected among adolescent students with the random sampling method.

Data Collecting Tools

1- The Satisfaction with Life Scale

The Satisfaction with Life Scale was developed by Deiner, Emmons, Larsen and Griffin (1985) and adapted into Turkish language by Yetim (1993). The 7-point Likert type scale is composed of 5 items.

Scoring of the Satisfaction with Life Scale

The Satisfaction with Life Scale (SWLS) was developed by Deiner, Emmons, Larsen and Griffin (1985), it is a 5-item, Likert type self-evaluation scale of which points range between "1=not applicable at all" and "7= totally applicable" (Yetim, 2003). Individuals are asked to answer each statement in the Satisfaction with Life Scale by using a scoring that ranges between "not applicable at all" (1) and "totally applicable" (7) (Dingiltepe, 2009). The lowest score which can be obtained is 5 and highest one is 35 in the scale. As the score obtained gets higher, the level of live satisfaction increases.

Reliability and validity of the Satisfaction with Life Scale

In the study performed by Dingiltepe (2009), the reliability of the scale was recalculated and Cronbach's Alpha value was found to be .84. The Satisfaction with Life Scale is a 7-point Likert type scale. The reliability of the scale was found to be high by Yetim (1993) who applied the scale to Turkish population (Alpha= .86) and the test-retest reliability was calculated to be .73 (Yetim, 2003).

2- The Internet Addiction Scale

The Internet Addiction Scale developed by Güneç and Kayri (2009) was used in the study. The scale development sample is composed of 754 secondary school students. It is a 5-point Liker type, 35-item scale. The "Two-Stage Clustering Analysis", which is a classification method, was applied for the scoring of the scale to obtain more detailed information about addiction status of the individuals. Cronbach's alpha (a) internal consistency coefficient of the scale was calculated as .944. The exploratory factor analysis was used for structure validity, and the confirmatory factor analysis was chosen to test the accuracy of the factor structure obtained. The scale is composed of four subfactors: Deprivation (IAD), Control Disorder

(IDCD), Functional Deterioration (IDFD), and Social Isolation (IDSI). Total explained variance for the scale was found to be 47.463%.

3- Rotter's Internal-External Locus of Control Scale

The Locus of Control Scale is a 29-item, forced-choice questionnaire developed by Rotter (1966) to measure general expectations about skill, luck and fate oriented perceptions. 6 of the items are diversions, 23 of them are composed of optional statements about internal and external beliefs. The highest score is 64, the lowest is 0 in the scale. Each item covers two choices of the forced choice rating. For example, (2.a) most of the unhappiness in life is about bad luck at the least. (2.b) bad luck of people is the result of their mistakes (Dağ, 1991). While 23 items are included for the evaluation, 6 items are not included in the calculation because they are used as diversions to hide the purpose of the scale (diversion items: 1,8,14,19,24,and 27). In addition, the (a) choice of items (2,6,7,9,16,17,18,20,21,23,25,29) are awarded 1 point each while the (b) choice of items (3,4,5,10,11,12,13,15,22,26,28) are awarded 1 point each. Higher scores indicate that individual has the external locus of control; lower scores mean that individual has the internal locus of control. The reliability and validity studies of the LCS were performed by İhsan Dağ (1991) in Turkey. In the reliability and validity studies, the test-retest reliability coefficient was calculated to be .83; Cronbach's Alpha internal consistency coefficient .70; and the reliability coefficient calculated with the Kuder-Richardson 20 formula .68. The scale is suitable for group application while it can also be answered by the individual alone. There is no time limitation for application.

4- Identifying Criterion for Obesity:

The body-mass index (BMI) is a simple and quick method used for obesity diagnosis. The body-mass index (BMI) is calculated with the following formula: $BMI = \frac{\text{Weight (kg)}}{[\text{Height (m)} \times \text{Height (m)}]}$. BMI varies among children in respect to age. Therefore, age-specific and gender-specific BMI values are used for obesity diagnosis among children and adolescents. Accordingly, those with $BMI > 85$ are accepted as overweight, and those with > 95 are considered to be obese (Centers for Disease Control and Prevention, 2000).

Analysis of Data

The data obtained in the research were analyzed with Pearson's Product Moment Correlation Coefficient to see the relationship between variables and the Multiple Regression Analysis to identify the variables that predict life satisfaction.

FINDINGS

Table 1: Correlation analysis results regarding adolescents' life satisfaction and locus of control, Internet addiction, obesity and the subdimensions of Internet addiction

		Life Satisfaction	Locus of Control	Internet Addiction	Deprivation	Control Disorder	Functional Deterioration	Social Isolation
Locus of Control	Pearson's Correlation	.014						
	Sig.(2-tailed)	.393						
	N	403						
Internet	Pearson's Correlation	-.545*	.149*					

Addiction	Sig.(2-tailed)	.000	.001					
	N	403	403					
Deprivation	Pearson's Correlation	-.522*	.029	.811*				
	Sig.(2-tailed)	.000	.281	.000				
	N	403	403	403				
Control Disorder	Pearson's Correlation	-.402*	.047	.806*	.512*			
	Sig.(2-tailed)	.000	.171	.000	.000			
	N	403	403	403	403			
Functional Deterioration	Pearson's Correlation	-.283*	.304*	.753*	.410*	.439*		
	Sig.(2-tailed)	.000	.000	.000	.000	.000		
	N	403	403	403	403	403		
Social Isolation	Pearson's Correlation	-.569*	.149*	.996*	.800*	.788*	.747*	
	Sig.(2-tailed)	.000	.001	.000	.000	.000	.000	
	N	403	403	403	403	403	403	
Obesity	Pearson's Correlation	-.852*	.041	.636*	.615*	.485*	.338*	.652*
	Sig.(2-tailed)	.000	.201	.000	.000	.000	.000	.000
	N	403	403	403	403	403	403	403

In Table 1, the relationship between adolescents' life satisfaction and locus of control, Internet addiction, obesity and the subscales of Internet addiction. No significant difference was found between life satisfaction and locus of control ($r = .014$ $p < .393$). A significant and negative relationship was found between life satisfaction and Internet addiction ($r = -.545$ $p < .001$). A significant and negative relationship was found between adolescents' life satisfaction and deprivation, which is a subdimension of Internet addiction ($r = -.522$ $p < .001$). A significant and negative relationship was found between adolescents' life satisfaction and control disorder, which is a subdimension of Internet addiction ($r = -.402$ $p < .001$). A significant and negative relationship was found between adolescents' life satisfaction and functional deterioration, which is a subdimension of Internet addiction ($r = -.283$ $p < .001$). A significant and negative relationship was found between adolescents' life satisfaction and social isolation, which is a subdimension of Internet addiction ($r = -.569$ $p < .001$). A significant and negative relationship was found between adolescents' life satisfaction and obesity ($r = -.852$ $p < .001$).

Table 2. Multiple Regression Analysis for the prediction of adolescents' life satisfaction
R=.866 R²=0.298, p=.000

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations		
	β	Std. Error	Beta			Zero-order	Partial	Part
(Constant)	-.786	2.964		-.265	.791			
Locus of Control	-.048	.046	-.028	-1.041	.299	.014	-.052	-.026
Internet Addiction	-.868	.197	-5.852	-4.409	.000*	-.545	-.217	-.111
Deprivation	.666	.194	.809	3.431	.001*	-.522	-.170	.086
Control Disorder	.653	.192	.782	3.403	.001*	-.402	-.169	.086
Functional Deterioration	.751	.227	.683	3.305	.001*	-.283	-.164	.083
Social Isolation	1.077	.217	4.119	4.966	.000*	-.569	-.242	.125
Obesity	16.622	.763	.783	21.794	.000*	-.852	-.739	.549

The multiple regression analysis results regarding life satisfaction and Internet addiction, obesity and the subdimensions of Internet addiction are given in Table 2. When the binary and partial correlation values between independent and dependent variables were examined, no significant relationship was found between life satisfaction and locus of control ($t=-2.041$ $p<.001$). While there was a significant and negative relationship between life satisfaction and Internet addiction ($r= -.545$), the correlation between life satisfaction and Internet addiction was found to be $r= -.217$ when other variables were taken under control. It was seen that there was a negative correlation between life satisfaction and deprivation, a subdimension of Internet addiction ($r= -.522$). When other variables were taken under control, it was estimated that the correlation between life satisfaction and deprivation was $r= -.170$. It was seen that there was a negative correlation between life satisfaction and control disorder, a subdimension of Internet addiction ($r= -.402$). When other variables were taken under control, it was estimated that the correlation between life satisfaction and control disorder was $r= -.169$. In addition, it was seen that there was a negative correlation between life satisfaction and functional deterioration, a subdimension of Internet addiction ($r= -.283$).

When other variables were taken under control, it was determined that the correlation between life satisfaction and functional deterioration was $r= -.164$. It was found that there was a negative correlation between life satisfaction and social isolation, another subdimension of Internet addiction ($r= -.2$). However, when other variables were taken under control, the correlation between life satisfaction and social isolation was determined to be $r= -.242$. While there was a significant and negative relationship between life satisfaction and obesity, which is another variable ($r= -.852$), the correlation between life satisfaction and obesity was found to be $r= -.739$ when other variables were taken under control. As for the results of the multiple regression analysis regarding the prediction of adolescents' life satisfaction, there is a significant relationship between Internet addiction, obesity and the subscales of Internet addiction ($R=.866$, $R^2= 0.298$, $p<.001$). Along with the

abovementioned six variables, adolescents' life satisfaction explains 30% of total variance. According to the standardized regression coefficient (β), relative importance order of the predictor variables over life satisfaction is as obesity ($\beta=16.622$), social isolation ($\beta=1.077$), functional deterioration ($\beta=.751$) deprivation ($\beta=.666$), control disorder ($\beta=.653$), and Internet addiction ($\beta=-.868$). As for the t-test results concerning the significance of regression coefficients, it is seen that locus of control did not predict life satisfaction.

DISCUSSION AND CONCLUSION

In this research that investigated the predictor variables of adolescents' life satisfaction, it was found that locus of control did not predict adolescents' life satisfaction significantly. As for the literature, it was determined that adolescents with internal locus of control have higher levels of life satisfaction (Buseh, 2006, Chirwa, 2009; Markowitz, 1998; Mashiach-Eizenberg, 2013; Branholm, Fugl-meyer & Frölunde, 1998; Zawavi & Hamaideh, 2009). It was stated that adolescents with external locus of control have lower levels of life satisfaction (Ashby, Kottman & Draper, 2002; Mariano, Donovan, Walker, Mariano, & Walker, 1989; Guinn, 1998). Accordingly, as the internal locus of control increases, life satisfaction levels increase too (Abu-Bader, Rogers & Barusch, 2002; Gerrard, Reznikoff & Riklan, 1982). The finding of the research do not show parallelism with the literature. It was found that Internet addiction of adolescents predicted life satisfaction. It is stated in the studies that there is a negative relationship between adolescents' life satisfaction and Internet addiction (Cao, Sun, Wan, Hao & Tao, 2011; Ko, Yen, Chen, Chen, & Yen, 2005; Ko, Yen, Yen, Lin, & Yang, 2007; Lemmens & Valkenburg, 2011; Meerkerk, Van den, Eijnden, Franken & Garretsen, 2010; Morahan-Martin, 2008; Stepanikova Nie & He, 2010; Wang, Chen, Lin, & Wang, 2008). The findings of these researches supports the finding obtained in this research. On the other hand, it was also found in some studies that adolescents with lower levels of life satisfaction feel safer on Internet and appreciate establishing relationships on Internet (Livingstone & Helsper, 2007). Those studies support the ones showing that use of Internet for communicational purposes is not related to life satisfaction (Cotten & Bowman, 2004).

A significant and negative relationship was found between adolescents' life satisfaction and deprivation, control disorder, functional deterioration and social isolation. It was stated in the literature that adolescents have higher levels of emotional, social and academic self-efficacy (Suldo & Huebner 2006; Gilman & Huebner 2006) and experience less emotional and behavioral (Gross, 2004; Law, 2004). Some researchers stated that adolescents who are experiencing social isolation also experience functional deterioration and have lower life satisfaction (Desjarlais & Willoughby, 2010; Stepanikova, Nie & He, 2010). The obesity variable predicted adolescents' life satisfaction levels significantly and negatively. It can be seen in the literature that adolescents develop lower self-esteem due to negative perception of body image; thus, their life satisfaction is affected by eating disorders, concern about weight, anxiety and taking no pleasure in life (Chow 2005; East, 2010). It is also stated in some studies that the less adolescents are pleased with the look of body, the more they are anxious about their outer appearance, and consequently, they have lower quality of life and life satisfaction (Krane, Stiles-ShIPLEY, Waldron, & Michalenok, 2001; Hassan, Joshi, & Madhavan, Amonkar, 2003; Tsai, Yang, Lin, & Fang, 2004). Obesity has negative impacts on individuals' functional capacity, quality of health life and life satisfaction (Heo, Allison, Faith, Zhu & Fontaine, 2003; Lemoine, Rossell, Drapeau, Poulain, Garnier, Sanguignol & Mauriege, 2007; White, O'neil, Kolotkin & Byrne, 2004; Roberts, Kaplan, Shema, & Strawbridge, 2000). It is stated that obesity is related to mood, anxiety, somatoform depression, anxiety disorders and social phobia other than physical and physiological

problems (Britz, Siegfried & Ziegler, 2000; Siegel, Yancedy, & McCarthy, 2000). Related literature supports the research findings.

The following is suggested according to the findings obtained from the research:

- 1- Studies should be carried out to increase adolescents' locus of control
- 2- Experimental studies should be performed to increased adolescents' levels of healthy use of Internet
- 3- Adolescents should be informed of daily activities for enhancing quality of life and life satisfaction to prevent obesity.

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