



Decreasing trends in adolescent life satisfaction: the role of developmental and demographic factors.

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ABSTRACT

The aim of the present study was to investigate demographic and developmental factors that contribute to the prediction of life satisfaction in Greek adolescents. Life satisfaction is an important aspect of the subjective well-being and functionality of adolescents. The sample included 433 students (171 males) aged 11 to 16 years from medium and upper socioeconomic status, attending private schools in Greece. The research was conducted at the school environment after permission from the Schools' Supervisor of Counseling Services and the Schools' Principals. The Multidimensional Students' Life Satisfaction Scale was administered to students in order to assess the subjective well-being of adolescents along with a questionnaire for demographic information. Results showed a statistical significant decrease in adolescents' life satisfaction from family, friends, school, living environment and self as students move from the developmental stage of early to middle adolescence. A regression analysis revealed that each domain of life satisfaction was predicted by specific demographic and developmental factors. Results also indicated that gender was associated with several dimensions of life satisfaction. Girls in particular reported greater life satisfaction in total and were more satisfied with friends and school compared to boys. Decreased life satisfaction in adolescence may be a developmental phenomenon which should be studied further through longitudinal studies.

Key Words: *life satisfaction, developmental factors, demographic indicators, age, gender, adolescence*

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Introduction

Life satisfaction refers to the subjective assessment people make about the positive aspects of their life, as well as specific domains of it such as health, material well-being, safety, community, interpersonal relationships, intimacy, emotional well-being and productivity [1]. However, these domains are not necessarily of the same importance for adolescents as well. As Park and Huebner [2] point out, investigations of life satisfaction among adults cannot be automatically generalized to adolescents, because each group has its own salient interests, needs, and concerns in life which change with age. For instance, the effect of income, working hours, job satisfaction or marriage is not applicable to adolescents [3]. For adolescents, life satisfaction is affected more by personal factors as well as family and peer relationships [4].

A number of studies have shown that life satisfaction in adolescence is related to family experiences [5], relationships with friends [6] and participation in leisure activities [7]. As the main source of support, family plays a fundamental role in children's and adolescents' well-being and a harmonious family environment is crucial to their development. Other aspects, such as their relationships with friends and school environment, are also very important for their psychological development [8].

Life satisfaction has been studied extensively in adults but to a lesser extent in adolescents and children, even though it is a meaningful variable for them as well [9-11]. Adolescence is a developmental stage characterized as a period of "storm and stress" [12] because it is associated with significant physical and psychosocial changes [13], which can affect notably life satisfaction. Therefore, research in this area can inform our knowledge about periods of development with lower life satisfaction that are critical in relation to life satisfaction with the ultimate aim of implementing prevention measures that would improve children's and adolescent's life satisfaction.

Life Satisfaction and Sociodemographic factors

Few researchers have addressed the question of the impact of sociodemographic factors (age, gender, parental educational level and academic achievement) in relation to domain-specific life satisfaction during adolescence. The relationship between age and life satisfaction has produced contradictory results, with some studies reporting a decrease in life satisfaction from childhood to adolescence, whereas others demonstrating a positive trend. In a study conducted by Bisegger et al. [14] in

seven European countries, findings showed that after 12 years of age there was a decrease in quality of life in the majority of aspects and this decrease was stronger for females than for males, especially in relation to physical and psychological dimensions. Decreasing life satisfaction across nearly all life domains was also reported in a study with German [15], English [16], Spanish [11] and Australian [17] adolescents between 11 and 16 years. According to Aymerich et al. [17] and González-Carrasco et al. [18] the levels of life satisfaction were significantly higher in childhood than in pre-adolescence and adolescence and specified a significant decrease towards the age of 11. However, there are also studies that do not confirm this decrease in life satisfaction in adolescence [9, 19, 20].

In terms of gender, lower life satisfaction was found in girls than in boys [14, 18]. Some researchers point out that the decreasing-with-age well-being trend is much faster and intensive among girls than among boys [18, 21]. Overall, there are some contradictory results in literature regarding life satisfaction and gender. For instance, Steinmayr et al. [19] and Huebner et al. [9] did not observe any association between gender and life satisfaction in a longitudinal study with German adolescents. Another study conducted by Salmela-Aro and Tuominen-Soini [20] found that life satisfaction increased among 15 to 17-year-old girls, a finding which they attributed to their better fit with their school environment. A recent study by Kekkonen et al. [22] found that loneliness and low frequency of meeting friends in adolescence was associated with lower life satisfaction in young adulthood, particularly in males while in females lower life satisfaction was associated more with not participating in recreational sports.

Parental education has been the most commonly used Socio-Economic Status component [23]. Seligson et al. [24] reported that adolescents' with lower Socio-Economic Status had lower life satisfaction levels. However, according to the empirical findings of Huang et al. [25], higher parental educational level was not significantly related to higher adolescent life satisfaction. According to Yucel and Yuan [26] the influence of siblings upon adolescents' life satisfaction is relatively unexplored. The results of their study showed that the impact of siblings on life satisfaction among early adolescents was only modest. Previous studies on

domain-specific life satisfaction have found a positive relationship between academic achievement and life satisfaction in adolescents [27-28]. Nevertheless, research regarding the relationship of life satisfaction and sociodemographic factors such as parental educational level, number of siblings and academic achievement in adolescence tended to focus on global measures and not on domain-specific life satisfaction.

Developmental Dimension of School Transitions

Adolescence is a period that coincides with changes in school and in many countries the transition from primary to secondary education. School transitions are associated with "normal life crises" and are associated with an increased likelihood for experiencing psychological difficulties [29]. Through a developmental perspective, these difficulties can appear either as adaptation difficulties or as predisposing factors for the emergence of psychopathology [30].

During their transition from primary to secondary education, adolescents face many changes, such as different teachers, new school procedures, new didactic approaches, different way of being assessed, decrease in parental involvement, heavier workload and a stricter curriculum, decrease in their spare time and changes in their friendship networks [31].

Present Study

The aim of the present study was to investigate demographic and developmental factors that contribute to the prediction of life satisfaction in Greek adolescents aged 11 to 16 years and explore whether there are any changes in adolescent's life satisfaction as they are progressing from primary to junior and then to senior high school.

Instead of a global approach, the present study adopts a multidimensional approach to life satisfaction by domains [1] and aims to draw useful conclusions about the strategies and behavioral styles that adolescents employ in particular contexts, such as their family, school and peer relationships.

Taking into account the importance of life satisfaction as one of the most significant indicators of psychological development and adjustment during adolescence, the present research tried to examine the effect of age (current class) in relation to certain demographic factors that contribute to the prediction of life satisfaction in adolescents aged 11 to 16 years. To our knowledge, this is the first study in Greece that used advanced psychometric methods (Confirmatory Factor Analysis) to investigate the psychometric properties of the MSLS.

Our main research hypothesis is that life satisfaction will be significantly predicted by age (current class). In particular, we expect a declining trend in both life satisfaction and its indicators during adolescence. Regarding gender, we expect that there will be a difference in the dimensions of life satisfaction between boys and girls; however, we cannot make any further assumption since the existing body of literature has not produced coherent findings in relation to gender. Parental education and number of siblings is expected to have modest correlation with adolescents' life satisfaction. Finally, we expect that school performance will predict adolescent's school satisfaction.

Material and Method

Participants

The original convenience sample was composed of 465 adolescents. After controlling for outliers with anomaly detection techniques, 32 participants were excluded and the final sample consisted of 433 adolescents.

The Multidimensional Students' Life Satisfaction Scale [32] was administered to students in order to assess the subjective well-being of adolescents. The questionnaire examines five life-domains: family, friends, school, living environment, self, and also includes a total life satisfaction indicator (subjective wellbeing). It is a 6-point Likert-type response scale, ranging from completely disagree to completely agree. As reported above, internal consistency indices of the five domains in the current study were satisfactory. Other studies have shown satisfactory coefficients of internal consistency (α) which range from 0.85 to 0.92 [33].

In addition, a questionnaire for demographic information was administered to all participants. This questionnaire included information about the student's gender, date of birth, siblings, birth order, parental educational level, and average performance during the previous school year.

Procedure

The research took place in private schools in Athens and Patras. The research procedure was initially submitted for approval to the School's Supervisor of Counseling Services and then to the School's Principals at the beginning of the school year. Afterwards, the signed consent of the parent and the assent of the adolescent were requested. It was highlighted to all students that they had the right to stop at any time and could skip some questions if they felt emotionally stressed. Students were informed about the

research aim, the identity of the researcher and were reassured about the anonymity of their responses. In addition, they received detailed explanations and were reassured that there was no right or wrong answers. The time to complete the questionnaires did not exceed the 45 minutes, which is the typical instruction time. Questionnaires were administered between the third and fifth instruction hour of the daily school program.

Results

Confirmatory Factor Analysis

A Confirmatory Factor Analysis was conducted in the Multidimensional Students' Life Satisfaction Scale to ensure the statistical appropriateness of the measurement model and determine the factor structure of our hypothesized subscales. The analysis showed acceptable goodness of fit indices in the determination of the underlying structure of the scales ($\chi^2 = 1196.40$, $df = 683$, $p < .001$, $\chi^2/df = 1.75$, $TLI = .91$, $CFI = .92$, $RMSEA = .04$ [Low = .04 - High = .05], $SRMR = .07$).

Descriptive statistics

As it is depicted in Table 2, participants reported higher levels of satisfaction from friends ($M = 5.09$, $SD = 0.71$), followed by family ($M = 4.80$, $SD = 0.89$), satisfaction from self ($M = 4.74$, $SD = 0.72$), total life satisfaction ($M = 4.66$, $SD = 0.57$), satisfaction from living environment ($M = 5.54$, $SD = 0.88$) and satisfaction from school ($M = 4.10$, $SD = 1.02$).

Table 1. Sociodemographics of adolescent participants (N = 433)

	N	%
Class		
Primary school (6 th grade)	145	33.5%
Junior high school (8 th grade)	145	33.5%
Senior high school (10 th grade)	143	33%
Gender		
Male	171	39.5%
Female	262	60.5%
Number of siblings		
0	75	17.4%
1	255	58.9%
2	55	12.8%
3 and more	46	10.7%
Father's educational level		
High school	26	6%
University	407	94%
Mother's educational level		
High school	39	9%
University	394	91%
Last year's performance at school		
	M	SD
5 th grade school performance	19.7	1.01
7 th grade school performance	18.05	1.51
9 th grade school performance	17.58	1.66

Note: Previous year school performance scores' range was 0 to 20

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Table 2. Number of items, Means (M), Standard Deviations (SD) and Cronbach's α of the factors of MSLSS

	Items	M	SD	Cronbach's α
Satisfaction from friends	9	5.09	0.71	0.82
Satisfaction from family	7	4.80	0.89	0.85
Satisfaction from self	7	4.74	0.72	0.79
Satisfaction from living environment	9	4.54	0.88	0.77
Satisfaction from school	8	4.10	1.02	0.84
Total life satisfaction	40	4.66	0.57	0.89

Note: Score range is 1 to 6.

Predictors of Life Satisfaction

Stepwise regression analysis was conducted to determine which factors predict life satisfaction in total and in specific domains. The Stepwise regression included the following predictor variables: age (current class), gender, number of siblings, previous school year grade and parental educational level (paternal and maternal). There were no missing data in the data set. Analyses were carried out using SPSS version 25.

As it is depicted in Table 3, family satisfaction was predicted by previous school year's grade ($\beta = 0.14, p = .009, \Delta R^2 = 0.01$) and age (current class) ($\beta = -0.31, p < .001, \Delta R^2 = 0.14$). Satisfaction from friends was predicted by age (current class) ($\beta = -0.12, p = .014, \Delta R^2 = 0.02$) and gender ($\beta = 0.11, p = .018, \Delta R^2 = 0.01$) with girls having systematically higher scores than boys. School satisfaction was predicted by age (current class) ($\beta = -0.34, p < .001, \Delta R^2 = 0.17$), gender ($\beta = 0.17, p < .001, \Delta R^2 = 0.03$), with girls having higher scores, previous school year grade ($\beta = 0.12, p = .022, \Delta R^2 = 0.01$) and number of siblings ($\beta = -0.09, p = .033, \Delta R^2 = 0.01$). Living environment satisfaction was predicted by age (current class) ($\beta = -0.26, p < .001, \Delta R^2 = 0.07$) and father's educational level ($\beta = 0.11, p = .025, \Delta R^2 = 0.01$). Satisfaction from self was predicted by age (current class) ($\beta = -0.22, p < .001, \Delta R^2 = 0.04$) and gender ($\beta = -0.10, p = .042, \Delta R^2 = 0.01$), with boys having higher scores than girls. Total life satisfaction was predicted by age (current class) ($\beta = -0.42, p < .001, \Delta R^2 = 0.18$) and gender ($\beta = 0.11, p = .016, \Delta R^2 = 0.01$), with girls having systematically higher scores.

Table 3. Multiple Regression Analysis (Method Stepwise) Predicting Life Satisfaction from Gender, Number of Siblings, Previous School Year Grade, Parental Educational Level and Age/current Class

Predictor	Family		Friends		School		Living Environment		Self		Total life satisfaction	
	Step (ΔR^2)	β	Step (ΔR^2)	β	Step (ΔR^2)	β	Step (ΔR^2)	β	Step (ΔR^2)	β	Step (ΔR^2)	β
Gender			2(0.01)	0.11*	2(0.03)	0.17***			2(0.01)	-0.10*	2(0.01)	0.11*
Number of siblings					4(0.01)	-0.09*						
Previous school year grade	2(0.01)	0.14**			3(0.01)	0.12*						
Father's educational level							2(0.01)	0.11*				
Mother's educational level												
Age/Current class	1(0.14)	-0.31***	1(0.02)	-0.12*	1(0.17)	-0.34***	1(0.07)	-0.26***	1(0.04)	-0.22***	1(0.18)	-0.42***
R^2	0.16		0.03		0.22		0.08		0.05		0.20	

Note: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$; ΔR^2 is the incremental increase in the model R^2 resulting from one step to another; gender was coded with 0 = male students and 1 = female students

Discussion

The current study investigated life satisfaction from a developmental perspective in a sample of Greek adolescents aged between 11 and 16 years. The main goal was to examine demographic effects on life satisfaction in total and in its particular domains. Previous research has shown that the relationship between demographic variables and life satisfaction is weak, contributing only modestly to the prediction of adolescents' life satisfaction [34]. However, the results of the present study showed that there were significant age and gender effects in total and specific domains of life satisfaction.

Comparisons between different life domains showed that adolescents were more satisfied by their friends and family compared to other dimensions of life satisfaction, such as their living environment and school. These results are similar to those presented by Goldbeck et al. [15] who also reported a persistently high contribution of friends to the adolescents' general life satisfaction. This finding is in line with developmental theories supporting that during adolescence people show particular interest in their relationships with friends rather than family [35].

The results obtained in the present study support the decreasing-with-age trend previously depicted in other cross-sectional [14-17] and longitudinal studies [10, 18, 21]. As students progress from primary school to junior and then to senior high school, life satisfaction (in total) as well as satisfaction from family, friends, living environment, self and school decreases. Adolescents' age seemed to be a powerful predictor of life satisfaction and its dimensions. It is noteworthy that this statistically significant reduction in life satisfaction with age is observed in most studies irrespective of the instrument used [18].

According to Goldbeck et al. [15], this decrease constitutes a "normal developmental phenomenon" which can be explained by the challenges adolescents face during their transition to adulthood and the changes they experience in many domains of their lives. For instance, the transition from primary to secondary education is one of the most stressful events in adolescents' lives [36] which can have a negative impact on their emotional well-being and academic achievement. For Steinberg [37] these developmental challenges may be factors of vulnerability for some adolescents and therefore careful attention should be given to this sensitive developmental phase.

With regard to vulnerability factors, low life satisfaction posits a threat to development and is associated with mental health problems and suicide risk [38]. Therefore, subsequent studies could further explore the concept of life satisfaction taking into account risk factors and psychopathological variables as well. However, a more complete understanding of the developmental dimension of life satisfaction in adolescence will be achieved through longitudinal research designs.

It should be noted that this decrease is not found in studies with samples of older adolescents [19]. This highlights the importance of conducting research with younger adolescents and children in order to be able to enhance our understanding about the age at which this tendency starts and when it stabilizes.

Regarding the effect of gender on life satisfaction during adolescence, results indicate that gender was associated with several dimensions of life satisfaction. Girls in particular reported greater life satisfaction in total and were more satisfied with friends and school compared to boys. On the contrary, boys appeared to be more satisfied with themselves. These results contradict the findings of other studies [14, 18, 39] according to which boys had higher life satisfaction than girls. It comes in accordance, though, with the study of Salmela-Aro and Tuominen-Soini [20] who

reported that life satisfaction increased among 15 to 17-year-old girls.

A possible interpretation of these differences might lie in social role theory, which supports that the behavior of boys and girls differs because they have been attributed different roles in society [40]. Adolescence as a life stage depends on the number and types of roles adolescents are expected to play, the changing demands associated with these roles, and patterns of role gain and role loss.

Our results regarding the modest correlation of parental educational level, academic performance and number of siblings with life satisfaction are consistent with previous findings [25-28]. One of the contributions of the present study is that it confirmed these patterns in domain-specific life satisfaction during adolescence.

Finally, school satisfaction was predicted by most demographic indicators. In particular, gender, number of siblings, previous school year performance and age (current class) appeared to predict school satisfaction. In particular, girls, adolescents with fewer siblings, higher grades and younger children who attended primary school reported higher school satisfaction. Previous school year performance was positively correlated with satisfaction not only from the school but also from the family. The present finding can be related to the high expectations and importance that the Greek family posits to school performance. In the research conducted by Soares et al. [39] the main effect of school performance on life satisfaction was not significant. In relation to age, their findings showed a significant negative correlation between life satisfaction and age, suggesting that the lower the age, the greater the life satisfaction.

Limitations and Future Research

There are limitations in this study that should be kept in mind when considering the results. It should be noted that the selection of participants in the present study does not meet the criteria of random sampling. The sample was convenient, coming mostly from middle and upper socio-economic classes of the population, limiting the possibility of generalization. Further, because only private schools were sampled, the results may not necessarily generalize to public school students in Greece. In addition, data were collected through self-report questionnaires, with all the limitations that this methodology entails. The research design of the study does not allow conclusions to be drawn regarding causal relationships, but only the recording of correlations. It is evident that predicting adolescents' life satisfaction is a multifactorial process and inevitably

extends the number of variables that can be studied in any empirical research study. Therefore, results suggest the importance of longitudinal and experimental studies to explore further the relationship between broader developmental parameters and life satisfaction from infancy to late adolescence.

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The present study highlights the transition from early to middle adolescence as a vulnerable developmental period. Overall, the results obtained in the present study support the decreasing-with-age trend. However, there were substantial individual differences around this normative trend. Girls reported greater life satisfaction in total and were more satisfied with friends and school, while boys appeared to be more satisfied with themselves. Last year's school grade was a significant predictor of school and family satisfaction. The level of parental education did not have a significant effect on the prediction of life satisfaction and its dimensions (except for living environment satisfaction). The results of the present study highlight the importance of providing psychological/emotional care to early adolescents, especially during periods of transitions, such as the transition from primary to secondary school. For this reason, specific school-based intervention programs should be implemented that will address issues related to life-satisfaction enhancement (positive emotions, empathy, gratitude, engagement,) as well as prevention programs that will facilitate the transition process from primary to secondary education by considering the child characteristics (i.e. gender, age), the family characteristics (i.e. parental education, socioeconomic status) the characteristics of primary school (class teachers, didactic approach) and the characteristics of secondary schools (specialist teachers, exams). The results of the present study and the specific variables that are found to affect life satisfaction in boys and girls can guide the educational practices we can employ in order to prevent the decreasing with age trend of life satisfaction that seems to characterize the period of adolescence. Therefore, the family, social, demographic and contextual factors found by the present study to act as important contributors to life satisfaction among Greek adolescents should be exploited for designing intervention programs. Finally, it would be important for future studies to identify the risk and protective factors that predict changes in life satisfaction among Greek youth during the multiple transitions encountered in adolescence.

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