

The association between demographic and familial characteristics and psychological properties of adolescents

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Background: We aimed to investigate the association between demographic and familial characteristics and psychological properties of adolescents including identity style, spiritual intelligence (SI), perceived parenting style (PPS), family functioning, and mental health. **Materials and Methods:** In this cross-sectional study, high school students aged 15–18 years were enrolled. Demographic characteristics of each student and their parents were recorded. Psychological properties of the students including PPS questionnaire, family assessment device, identity status, mental health status, and SI were assessed. The association between demographic and familial characteristics and psychological properties of adolescents was determined using Multiple Indicators and Multiple Causes (MIMIC) model. **Results:** In this study, 279 high school students (140 boys and 139 girls) were enrolled. The most common forms of identity style were diffusion and foreclosure with a prevalence rate of 49.1% and 39.5%, respectively. Results of MIMIC model showed acceptable fit with comparative fit index = 0.91, Tucker-Lewis index = 0.87, and root-mean-square error of approximation = 0.05 (0.04–0.06). There was a significant positive association between age and family functioning ($P = 0.001$). There was a significant positive association between age and mental health ($P = 0.003$). There was a significant negative association between gender and PPS ($P < 0.001$). The most common forms of PPS in females and males were authoritative form and uninvolved parenting, respectively. There was a significant positive association between father education and PPS ($P = 0.001$). **Conclusion:** Our findings indicated that there is an association between families' demographic characteristics and identity style, perceived parental style, family functioning, and SI of adolescence. The association of some factors with mentioned psychological variables is more prominent such as age, gender, and father age.

Key words: Adolescent psychology, demographic factors, family conflict, identity, intelligence, mental health, perception, spiritual

How to cite this article: Najmi SB, Hovsepian S, Jamshidibeyk A, Nasiripour L, Maracy MR. The association between demographic and familial characteristics and psychological properties of adolescents. *J Res Med Sci* 2019;24:14.

INTRODUCTION

Adolescence is a critical period in the growth and development of children. This period is associated with significant intellectual, physical, and psychological changes.^[1] It is a crucial period due to the fact that they make choices which could influence the rest of their lives. They try for obtaining both independence and social life as a member of a large peer group. Evidence indicated that comparing with other ages, adolescents experience more storm and stress. They are more susceptible for

the development of mood and psychosocial disorders. Although they engage in different individual activities for obtaining independency, it is well established that different familial factors could be effective in their choices and consequently on their personal and social development and well-being.^[2,3]

Family is the most important social system and organization which paves the way for a human to be developed physically, mentally, and socially.^[4] Evidence demonstrated that it is the most powerful social factor which could influence on adolescents' psychological

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Access this article online	
Quick Response Code: 	Website: www.jmsjournal.net
	DOI: 10.4103/jrms.JRMS_444_18

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Received: 10-06-2018; **Revised:** 18-08-2018; **Accepted:** 14-11-2018

development mainly due to the fact that parents have a lifelong history with their children.^[5,6]

The capacity of each family could influence adolescents' well-being. Parents are the most important component which could impact on the adolescence cognitive and social competence and identity formation.^[7,8]

Each family based on their members' demographic characteristics and other factors including parenting style, family assessment, and methods of education could influence on their children social cognitive development, mental health, as well as spiritual intelligence (SI).^[9-11]

Several studies indicated that teenage period is the most important period of life for reconstruction of psychosocial development. On the other hand family, background could effect on the ability of adolescents to overcome resolution of identity's growth tasks.^[12,13]

Adolescents with high level of intellectual, emotional, and SI could successfully deal with all the physical, psychological, and emotional aspects of this period.^[14]

Concepts such as identity style, SI, perceived parenting style (PPS), family functioning, and mental health are considered as important psychological issues during adolescence period which contributes to their psychological well-being, healthy human development, and better quality of life. The impact of each mentioned concept solely on adolescents' psychological health has been investigated and well documented in many studies.^[15] Moreover, the interrelationships of the mentioned concepts have also been evaluated. SI, the higher state of intelligence, is considered as an important moderator for the development of identity, mental health, and better quality of life in this period.^[15-18] Some studies also reported the relationship between family functioning and development of adolescents' identities.^[12] The association between PPS and all mentioned concepts has also been stated.^[19,20] It is suggested that the interaction of these factors finally impacts on the mental and psychological development of adolescents. Elalky *et al.* reported the association between family sociodemographic findings and anxiety and depression among adolescents.^[21]

Although many studies have evaluated the association between family characteristics and mentioned psychosocial factors and well-beings of adolescents in different communities, the additive effect of the factors or their interactions has not been evaluated yet. It is suggested that investigation the interacting effect of different parental demographic factors and adolescents' psychological properties would be helpful in designing more appropriate

educational plans for improving adolescents' well-being and psychological traits, especially with consideration of cultural and ethnic differences. The aim of this study is to investigate the association between demographic and familial characteristics and psychological properties of adolescents including identity style, SI, PPS, family functioning, and mental health.

MATERIALS AND METHODS

In this cross-sectional study, high school students aged 15–18 years were enrolled. The students were selected by multistage clustering sampling method from randomly selected high schools of Isfahan city. The sample size calculation was based on 95% confidence coefficient, and power of 80% was 279 students including 140 boys and 139 girls. In the first stage of sampling, we randomly selected one education area out of five from the city; then in the second stage, 6 high schools including 3 boys' schools and 3 girls' schools were randomly selected from the area. Finally, based on the number of student in each school, the suitable proportion of them was recruited.

Informed consent form was obtained from each student after explanation about the study design and its method. The protocol of this study was approved by the Regional Ethics Committee of Isfahan University of Medical Sciences with a research project number of 194080.

Inclusion and exclusion criteria

High school students whose parents were present in the family except their work time were included in the study, and those who had history of any chronic physical or psychological disorder in their family members, chronic mental disorder in adolescents, divorce, marital conflicts during the last month, a history of the death of a loved one in the last 3 months, jobless father, and a serious economic crisis were excluded from the study. The mentioned items were asked from the parents of the students or recorded from the students' file in the school.

Instrument and measures

Demographic characteristics of each student and their parents were recorded using a validated researcher-made questionnaire. The questionnaire included items such as age, gender, birth order, educational level, family status, authority structure in their family, and other related features.

Other psychological properties of the students including PPS questionnaire, family assessment device, identity status (IS), mental health status, and SI were assessed using validated questionnaires as the following.

Perceived parenting style

It was evaluated by a questionnaire which has been developed by Naghashian based on Schaffer's parenting style questionnaires. It is a Likert scale questionnaire with 77 items for assessment of different aspects of authoritative, permissive, authoritarian, and uninvolved parenting in the parent-child relationship. Based on the questionnaire, the points are graded in a range of 5 degrees from 1 "really disagree" to 5 "really agree."^[22] The splitting reliability coefficient of the questionnaire is reported to be 0.87 by the manufacturer.^[23]

Family functioning

It was evaluated using the family assessment device developed by Epstein *et al.* in 1978 based on McMaster model of family functioning. It consisted of 60 items in 7 domains including problem solving (6 items), communication (9 items), roles (11 items), affective responsiveness (6 items), affective involvement (7 items), behavior control (9 items), and general functioning (12 items). It is a self-report questionnaire scored on a 4-item Likert scale. The points are graded in a range of 4 degrees from 1 "really agree" to 4 "really disagree."^[24]

The internal consistency (α coefficient) for subscales was reported to be 0.72–0.92 by developer. The scale has been validated by Iranian researchers with an overall Cronbach's alpha of 0.94 for the total scale.^[25]

Identity status

It was evaluated by extended version of the Extended Objective Measure of Ego Identity Status II (EOM-EIS-II) questionnaire which was developed Grotevant and Adams in 1984 and revised by Bennion and Adams in 1986. The scale consisted of 64 items which are divided into two ideological and interpersonal domains. Each of the domains consisted of four subdomains including achievement, moratorium, foreclosure, and diffusion in which each domain contains 16 items. It is a 6-point Likert scale questionnaire from 1 "really disagree" to 6 "really agree." The reported alpha coefficients for the EOM-EIS-II by the developer were as follows for interpersonal domain including achievement, 0.62; moratorium, 0.75; foreclosed, 0.75; and diffusion, 0.62, and for ideological domain including achievement, 0.60; moratorium, 0.58; foreclosed, 0.80; and diffusion, 0.64. An Cronbach's alpha of 0.76 has been reported by Iranian researchers.^[26,27]

Mental health

It evaluated using Depression, Anxiety, and Stress Scale-42 item questionnaire. The scale is a self-report measure for assessment of depression, anxiety, and stress containing 14 items for each domain that it was briefed by Osman *et al.* It is a 4-point Likert scale questionnaire

that is graded in a range of 0 "really don't apply to" to 3 "really apply to."^[28]

Reported correlation coefficient with Beck Anxiety Inventory and Beck Depression Inventory was 0.81 and 0.74, and alpha coefficient for depression, anxiety, and stress was 0.94, 0.85, and 0.87, respectively. Validity and reliability of the questionnaire has been assessed by Iranian authors.^[29,30]

Spiritual intelligence

It was evaluated by SI questionnaire. The questionnaire was developed by King in 2008. It is a self-reported, Likert scale that is graded in a range of 0 "really don't apply to" to 4 "really apply to" with 24 items in four main dimensions including critical existential thanking (CET), personal meaning production (PMP), transcendental awareness (TA), and conscious state expansion (CSE) with 7, 5, 7, and 5 items, respectively. Reported reliability coefficients of subscales and total scores were 0.75 for CSE, 0.75 for PMP, 0.67 for TA, 0.70 for CET, and 0.88 for the total spiritual quotient test.^[16]

As calculated by different studies conducted in Iran, Cronbach's alpha of this questionnaire is between 0.89 and 0.92 and its reliability coefficient of 0.67.^[31]

Statistical analysis

Descriptive analysis was reported as mean standard deviation (SD)/median or n (%) using SPSS software (SPSS Inc. Released 2009. PASW Statistics for Windows, Version 18.0. Chicago: SPSS Inc). For analytic study, we used the Multiple Indicators and Multiple Causes (MIMIC) model with continuous and categorical indicators using Mplus Version 6.12 software (Muthén & Muthén, 2011, Los Angeles, CA). Illustration of the MIMIC model is presented in Figure 1. Mental health and family functioning are latent constructs which are measured by three and seven continuous variables, respectively. These two latent variables and three additional observed variables such as PPS (categorical), SI (continuous), and identity style (categorical) are affected by demographic variables. Continuous and categorical variables are illustrated by mean and corresponding SD and frequency (%), respectively. The comparative fit index (CFI) and Tucker-Lewis index (TLI) and approximate square and root-mean-square error of approximation (RMSEA) were used to evaluate the model goodness of fit. $P < 0.05$ was considered statistically significant.

RESULTS

In this study, 279 high school students (140 boys and 139 girls) were enrolled. Descriptive findings including demographic characteristics of the students (i.e., mean [SD] age: 16.3 [1.2]) and their families (i.e., father and mother mean [SD] age:

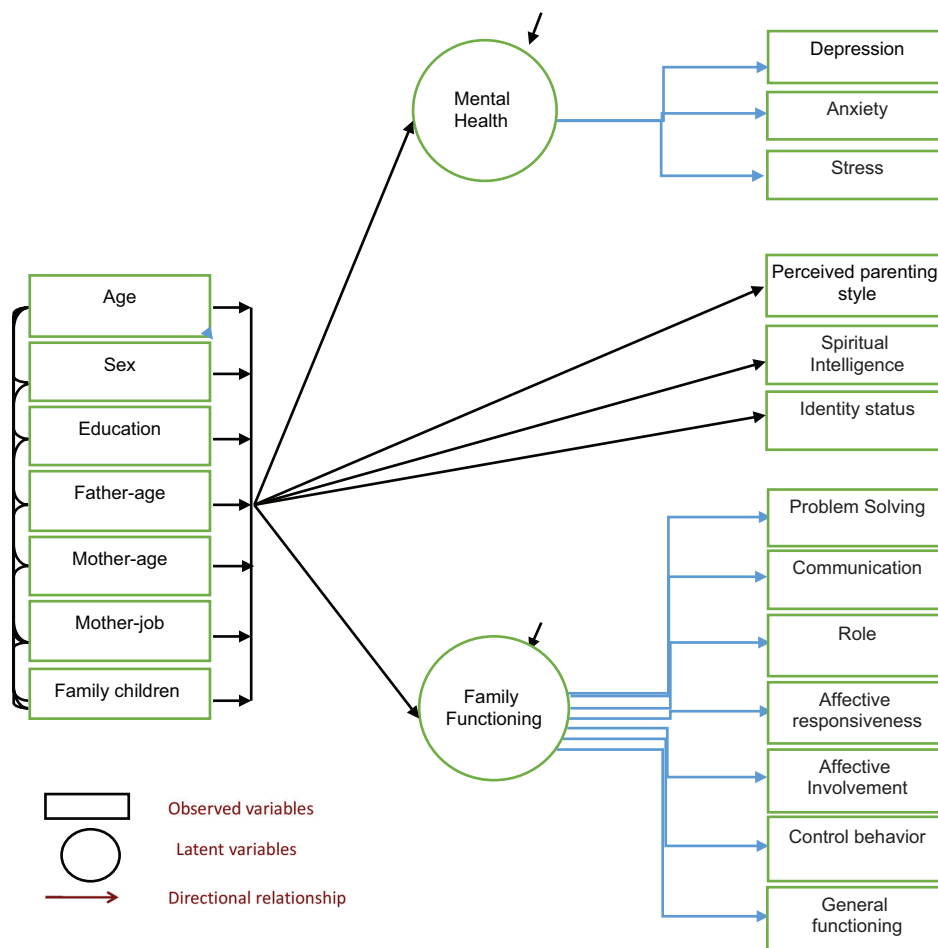


Figure 1: Illustration of the Multiple Indicators and Multiple Causes model with continuous and categorical indicators. Mental health and family function are latent constructs which are measured by three and seven variables, respectively. These two latent variables and three additional observed variables such as parenting, spiritual intelligence, and identity style are affected by demographic variables. Family assessment, spiritual intelligence, and mental health are continuous variables and identity style and perceived parenting style are considered categorical variables

46.3 [5.3] and 41.2 [5.1], respectively) and psychological properties of the participants are presented in Table 1.

Our results demonstrated that the most common forms of identity style were diffusion and foreclosure with a proportion rate of 49.1% and 39.5%, respectively. The most common forms of PPS were uninvolved parenting and authoritative with a proportion rate of 38.7% and 28.3%, respectively.

The mean (SD) of total SI score in our studied population was 53.1 (18.4). The mean (SD) of the seven subgroups of family function scores including problem solving, communication, roles, affective responsiveness, affective involvement, behavioral control, and general function was 1.97 (0.51), 2.16 (0.45), 2.26 (0.39), 2.31 (0.49), 2.31 (0.47), 2.09 (0.42), and 2.02 (0.53), respectively. The mean (SD) of stress, anxiety, and depression of the participants was 13.9 (8.4), 8.9 (6.6), and 8.7 (8.2), respectively. More details are shown in Table 1.

Results of MIMIC model showed acceptable fit with (CFI = 0.91, TLI = 0.87, RMSEA = 0.05 [0.04–0.06]).

Analyses of the effects of some covariates (demographic factors) on the outcomes are presented in Table 2.

There was a significant positive association between age and family functioning ($P = 0.001$) and also age and mental health ($P = 0.003$). There was a significant negative association between gender and PPS ($P < 0.001$). The most common form of PPS in females was authoritative form and in males was uninvolved parenting. There was a significant positive association between father education and PPS ($P = 0.001$).

DISCUSSION

In this study, we evaluated the association between demographic and familial characteristics and psychological properties of adolescents including family assessment, mental health, identity style, PPS, and SI using MIMIC model. Our results indicated that demographic factors and mentioned psychological factors are in association with each other. The most

Table 1: Descriptive statistics of the outcomes and covariates included in the analytic sample of students, Isfahan, Iran

Characteristics	Subgroups (minimum-maximum)	n (%)	Mean (SD)
Age (year)	14-19	279	16.3 (1.2)
Sex	Boy	140 (50.2)	
	Girl	139 (49.8)	
Education level of students	1 st year of high school	72 (25.9)	
	2 nd year of high school	71 (25.4)	
	3 rd year of high school	72 (25.8)	
	4 th year of high school	63 (22.6)	
Father age (year)	36-70	270	46.5 (5.3)
Mother age (year)	30-60	264	41.2 (5.1)
Father education	High school or less	95 (34.2)	
	Collage	131 (47.1)	
	MSc or higher	52 (18.7)	
Mother education	High school or less	97 (35)	
	Collage	151 (54.5)	
	MSc or higher	29 (10.5)	
Mother job	Housekeeper	228 (82.6)	
	Employment	48 (17.4)	
Number of family children	1	19 (6.8)	
	2-3	246 (88.2)	
	□4	14 (5)	
Identity status	Achievement	11 (3.9)	
	Moratorium	21 (7.5)	
	Foreclosure	110 (39.5)	
	Diffusion	137 (49.1)	
Perceived parenting style	Authoritative	79 (28.3)	
	Permissive	46 (16.5)	
	Authoritarian	46 (16.5)	
	Uninvolved parenting	108 (38.7)	
Spiritual intelligence	Critical existential thinking (0-28)	279	16.5 (6.1)
	Personal meaning production (0-20)	279	12.1 (4.4)
	Transcendental awareness (0-28)	279	14.3 (5.8)
	Conscious state expansion (0-20)	279	10.5 (4.5)
	Total (0-96)	279	53.1 (18.4)
Family functioning	Problem solving (1-4)	279	1.97 (0.51)
	Communication (1-4)	279	2.16 (0.45)
	Roles (1-4)	279	2.26 (0.39)
	Affective responsiveness (1-4)	279	2.31 (0.49)
	Affective involvement (1-4)	278	2.31 (0.47)
	Behavioral control (1-4)	279	2.09 (0.42)
	General function (1-4)	279	2.02 (0.53)
Mental health-DASS	Stress (0-42)	279	13.9 (8.4)
	Anxiety (0-42)	279	8.9 (6.6)
	Depression (0-42)	279	8.7 (8.2)

DASS=Depression, anxiety and stress scales; SD=Standard deviation

significant associations were between age and family functioning and mental health, gender and PPS, and father age and PPS.

In literature review, we did not find any similar study in this field. Using MIMIC model, we investigated the association of demographic factors with different psychological variables which importance in future mental health of adolescents have been well established.

Available reports indicated that the advantages of this model are that it could not only appropriately determine the associations between symptoms or demographic variables, latent variables, and covariates but also the correlations between the covariates and latent variables and the direct correlations between covariates and symptoms (by controlling latent variables). Recently, this model has been successfully used in different physiologic disorders and geriatric researches.^[32]

Table 2: Results from the analysis of the effects of some covariates on the outcomes using the Multiple Indicators and Multiple Causes model with continuous and categorical indicators

Covariates	Unstandardized estimate (β)	SE	P
Age			
Family functioning	0.066	0.020	0.001
Mental health	1.251	0.425	0.003
Identity style	-0.015	0.062	0.812
Perceived parenting style	-0.028	0.061	0.648
Spiritual intelligence	-0.076	0.921	0.935
Gender			
Family functioning	0.078	0.042	0.066
Mental health	0.735	0.956	0.442
Identity style	-0.083	0.146	0.571
Perceived parenting style	-0.813	0.140	<0.001
Spiritual intelligence	-2.294	2.224	0.302
Father age			
Family functioning	0.000	0.004	0.983
Mental health	-0.163	0.093	0.079
Identity style	0.004	0.016	0.808
Perceived parenting style	0.047	0.014	0.001
Spiritual intelligence	-0.422	0.218	0.053
Mother education			
Family functioning	0.006	0.039	0.888
Mental health	-0.633	0.865	0.464
Identity style	0.062	0.133	0.641
Perceived parenting style	0.088	0.126	0.488
Spiritual intelligence	-0.376	2.024	0.853
Mother job			
Family functioning	-0.030	0.060	0.625
Mental health	-0.301	1.392	0.829
Identity style	0.108	0.224	0.629
Perceived parenting style	-0.061	0.194	0.754
Spiritual intelligence	-0.418	3.472	0.904
Number of children			
Family functioning	0.032	0.026	0.217
Mental health	0.300	0.511	0.557
Identity style	0.052	0.088	0.554
Perceived parenting style	-0.086	0.073	0.241
Spiritual intelligence	1.652	1.077	0.125

Continuous=Family assessment, spiritual intelligence, mental health;
Categorical=Identity style, perceived parenting style; SE=Standard error

Mental health is one the most important concerns of adolescents which could not be neglected. Poor mental health is associated with inappropriate educational achievement, poor relationships with peers, poor social support, violence, substance use, and abuse. Providing the opportunities for development and achieving good mental health is considered a priority for health-care professionals.^[33]

In a study in Egypt, Elalky *et al.* indicated that there was a significant association between sociodemographic characteristics of adolescents including parenting style

and gender and mental health including depression and anxiety.^[21]

Brand *et al.* studied the association between parenting styles and symptoms of depression and anxiety among adolescents. They showed that adverse parenting styles were significantly associated with negative mood and increased symptoms of anxiety and depression.^[34]

Our findings indicated that by age, increasing the association between demographic factors and mental health would be more significant. Some studies reported a significant positive association with age and pubertal development and depression. Morse and Takau did not show such an association between age and anxiety. It seems that cultural differences and style of education could explain different results of the mentioned studies.^[35]

Family functioning is one of the potent variables which could predict the future psychological well-being of adolescents and their achievements.^[12]

In a study in Nigeria, Muyibi *et al.* investigated the relation between family functioning and adolescents' demographic characteristics and reported a significant association between perceived family functioning and gender and their parents' social status.^[36]

Abdul Jalal in Malaysia also showed that sociodemographic factors were significantly associated with family functioning. The results of this study indicated that in addition to the association between family functioning and demographic characteristics, the association is more significant by increasing age.^[37]

Parenting styles, the methods used by parents when dealing with their children, is one of the important variables which association with healthful developmental of adolescents, their personality formation as well as different psychological problems have been investigated in previous studies. On the other hand, many factors could influence on PPS. Results about the association between race and culture with PPS are controversial.^[19]

Jaradat reported that family income, parents' education, and marital statuses could effect on PPS of adolescents.^[20]

In this study, demographic factors have impact on PPS. The correlation between demographic factors and PPS was not similar in different genders and was more significant by increasing father' age.

According to the definition of Sisk and Torrance, "SI can be defined as a deep self-awareness in which one becomes

more and more aware of the dimensions of self, not simply as a body, but as the mind, body, and spirit."^[17]

It is well established that spiritual intelligence (SI) implies a capacity for better understanding of any question. It is associated with goal achievement and problem resolution as a part of cognitive processes. Thus, SI could influence on adolescents' success and quality of life. Evidence demonstrated that adolescence is an important period for each individual for training of SI.^[15] In our study, there was a significant association between demographic variables and SI.

In addition, some baseline familial characteristics could influence on SI. King *et al.* indicated that demographic variables including age and level of education are associated with SI.^[16] Abdali *et al.* in Tehran indicated that there was no significant relationship between demographic characteristics and SI. In addition, they reported that academic degree is negatively associated with SI.^[18]

Identity style is considered as an important psychological factor which could have a crucial role in the core development of adolescents. Different styles of IS could effect on adolescents' adjustment, their involvement in the society, and psychological well-being.^[38]

Kroger *et al.* in a review study investigated changes and different development status of IS among adolescents and young adults. They demonstrated that mean proportion of moratoriums had increasing trend till 19 years of age, and then, the trend is decreasing and the mean proportion of the achieved identity increased during late adolescence and early adulthood. According to their findings, during high school years, foreclosure and diffusion statuses had decreasing trend but fluctuated during late adolescence and early adulthood.^[38]

Some studies have investigated factors which have an impact on the formation of a different type of IS.^[14]

Beyers *et al.* indicated that there is a dynamic correlation between perceived parenting and identity formation. Parents considered as an important source of their children social development even during late adolescence period.^[39]

There was a significant association between demographic characteristics of our studied population with IS.

In a study in Turkey, the association between identity style with marital status, parental status, and socioeconomic condition was evaluated. The results indicated that the mentioned factors could affect identity style in adult population.^[40]

The implication of current study was that families' demographic characteristics could impact on some important psychological variables of adolescents. It is recommended to design more studies in order to determine the mode of association of each variable in details. However, these findings could help us to understand the motives behind different features of family functioning, mental health, identity style, PPS, and SI.

The limitations of the current study were the small sample size of studied population in comparison with similar studies and using of self-reported questionnaires. In addition, we did not evaluate socioeconomic factor which could be also a good predictor in this field. We have not accurate information about the socioeconomic status of families due to the families' inappropriate cooperation in this field.

The strength of this study was that there was no similar study which evaluated the association of different demographic factors all together with some psychological variables.

CONCLUSION

The findings of this study showed that there is an association between families' demographic characteristics and identity style, perceived parental style, family functioning, and SI of adolescence. The association of some factors with mentioned psychological variables is more prominent such as age, gender, and father age.

These findings could be used as baseline information for performing more analytical studies about their mode of associations in details. Given the importance of studied psychological variables in future psychological well-being, emotional and behavioral health, self-esteem, and educational outcome of the adolescents, awareness about the associations could be used as an important factor during consultation with adolescents.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

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