

Original article

The relationship between developmental assets and well-being in adolescent female students in Yazd, Iran

Seyed Saeed Mazloomi, Rabea Agh Atabay, Mehdi Rahimi, Hosein Fallahzadeh, Aliakbar Vaezi

Address for correspondence: School of public health, Shahid Sadoughi University of Medical Sciences, Yazd. Iran. Email id: rabea.atabay@gmail.com

Abstract

Introduction: This study aimed to investigate the relationship between developmental assets and well-being in adolescent female students.

Method: This was a descriptive-analytical cross-sectional study conducted in 2018 in Yazd, Iran. A total of 573 female students were selected through cluster sampling method with a mean age of 15.42 years (SD = 1.82). The Developmental Assets Profile was used to measure developmental assets and the EPOCH questionnaire was applied to measure well-being. Descriptive statistics, tests of correlation and regression were used to analyze data.

Results: The results showed that most of the developmental assets experienced by the Iranian adolescent girls were in the moderate range. In this regard, the lowest scores were related to constructive use of time and in the community context. The overall scores of subjective well-being reported by study participants were in the good range. Findings showed that constructive use of time, commitment to learning, and positive values explained 25% of engagement. Commitment to learning, social competencies, and positive identity predicted 44% of perseverance. Empowerment and positive identity explained 41% of optimism. Support, empowerment, boundaries and

expectations, commitment to learning, positive values, social competencies and positive identity predicted 36% of connectedness, and finally, support, empowerment, constructive use of time, commitment to learning, and positive identity predicted 37% of happiness.

Conclusion: The design and implementation of interventions for nurturing developmental assets in adolescents can be considered as a step towards the development and empowerment of well-being in them.

Keywords: Developmental Assets, Adolescent, Well-Being, Positive Youth Development

Introduction

In the past, the problem-focused paradigm was used to promote the health and well-being of children and adolescents, which surrounded theory, research, and practice in this area. The main purpose of this approach was to reduce unhealthy behaviors such as alcohol, drugs, tobacco abuse, adolescent pregnancy, violence, high-risk sexual behaviors, etc. as much as possible. In other words, the goal was to reduce the known developmental risks, such as poverty, neighborhood violence, and family dysfunction. The disappointing results of such efforts have led researchers to seek other ways to improve the health and well-being of adolescents [1].

The developmental assets framework, introduced initially in 1990 and then reformed in 1995, is designed not only to avoid high-risk behaviors, but also to focus more on the basic positive resources that adolescents have for a successful development. This framework, which is exceptionally comprehensive, includes 40 developmental assets divided into two categories of internal and external assets [2] (Table-1).

Table-1: Developmental assets of Search institute [2]

External Assets' Support	<p>1. Family support—Family life provides high levels of love and support.</p> <p>2. Positive family communication—Young person and her or his parent(s) communicate positively and the teenager is willing to seek advice and counsel from parents.</p> <p>3. Other adult relationships—Young person receives support from three or more non-parent adults.</p> <p>4. Caring neighborhood—Young person experiences caring neighbors.</p> <p>5. Caring school climate—School provides a caring and encouraging environment.</p> <p>6. Parent involvement in schooling—Parent(s) are actively involved in helping young person succeed in school.</p>
Empowerment	<p>7. Community values youth—Young person perceives that adults in the community value youth.</p> <p>8. Youth as resources—Young people are given useful roles in the community.</p> <p>9. Service to others—Young person serves in the community one hour or more per week.</p> <p>10. Safety—Young person feels safe at home, school, and in the neighborhood.</p>
Boundaries & Expectations	<p>11. Family boundaries—Family has clear rules and consequences and monitors the young person's whereabouts.</p> <p>12. School Boundaries—School provides clear rules and consequences.</p> <p>13. Neighborhood boundaries—Neighbors take responsibility for monitoring young people's behavior.</p> <p>14. Adult role models—Parent(s) and other adults model positive, responsible behavior.</p> <p>15. Positive peer influence—Young person's best friends model responsible behavior.</p> <p>16. High expectations—Both parent(s) and teachers encourage the young person to do well.</p>
Constructive Use of Time	<p>17. Creative activities—Young person spends three or more hours per week in lessons or practice in music, Theater or other arts.</p> <p>18. Youth programs—Young person spends three or more hours per week in sports, clubs, or organizations at school and/or in the community.</p> <p>19. Religious community—Young person spends one or more hours per week in activities in a religious institution.</p>

Internal Assets Commitment to Learning	<p>20. Time at home—Young person is out with friends “with nothing special to do” two or fewer nights per week.</p> <p>21. Achievement Motivation—Young person is motivated to do well in school.</p> <p>22. School Engagement—Young person is actively engaged in learning.</p> <p>23. Homework—Young person reports doing at least one hour of homework every school day.</p> <p>24. Bonding to school—Young person cares about her or his school.</p> <p>25. Reading for Pleasure—Young person reads for pleasure three or more hours per week.</p>
Positive Values	<p>26. Caring—Young person places high value on helping other people.</p> <p>27. Equality and social justice—Young person places high value on promoting equality and reducing hunger and poverty.</p> <p>28. Integrity—Young person acts on convictions and stands up for her or his beliefs.</p> <p>29. Honesty—Young person “tells the truth even when it is not easy.”</p> <p>30. Responsibility—Young person accepts and takes personal responsibility.</p> <p>31. Restraint—Young person believes it is important not to be sexually active or to use alcohol or other drugs.</p>
Social Competencies	<p>32. Planning and decision making—Young person knows how to plan ahead and make choices.</p> <p>33. Interpersonal Competence—Young person has empathy, sensitivity, and friendship skills.</p> <p>34. Cultural Competence—Young person has knowledge of and comfort with people of different cultural/racial/ethnic backgrounds.</p> <p>35. Resistance skills—Young person can resist negative peer pressure and dangerous situations.</p> <p>36. Peaceful conflict resolution—Young person seeks to resolve conflict nonviolently.</p>
Positive Identity	<p>37. Personal power—Young person feels he or she has control over “things that happen to me.”</p> <p>38. Self-esteem—Young person reports having a high self-esteem.</p> <p>39. Sense of purpose—Young person reports that “my life has a purpose.”</p> <p>40. Positive view of personal future—Young person is optimistic about her or his personal future.</p>

Internal assets are used by adolescents as a self-guide and have four sub-categories of positive identity, positive values, commitment to learning, and social competencies. The external assets, are those provided by the family and community for the youth and include four sub-categories of

support, boundaries and expectations, empowerment, and constructive use of time [2,3]. Related studies confirm that adolescents' developmental assets have a relationship with many risk behaviors. Greene et al., for instance, conducted a study in the American-Indian adolescents community and concluded that developmental assets in adolescents had a protective role against high-risk sexual behaviors [4].

As Scale and Lefferd pointed out, "focusing on developmental assets is a highway that puts researchers, policymakers, investors, community leaders, and all those who work with adolescents and their families, on the right track to reach the desired destination, which is the health and well-being of adolescents" [5]. The first step in this route is to explore the developmental assets of the community. On the other hand, according to Scale and Lefferd, these 40 assets do not include all the things required by an adolescent to have a satisfying life and transcendental growth. In fact, many vital questions are still not answered with regard to the developmental assets' framework and the adolescents' development [5]. One of these questions is the relationship between developmental assets and subjective well-being.

Although everyone agrees on the importance and necessity of research on well-being, no consensus exists on the way to measure it quantitatively. Today, most researchers emphasize that well-being has a multifaceted nature [6]. One of the models examining well-being from this point of view is the EPOCH model derived from the Seligman's PERMA that is especially designed for adolescents [7]. The model is composed of five factors including Engagement, Perseverance, Optimism, Connectedness, and Happiness (EPOCH).

Engagement means the individuals' capacity to absorb and focus on what they are doing as well as their participation and interest in life activities and duties. In the case that engagement is very high, individuals experiences a "flow". Perseverance means the ability of an individual to pursue

goals to complete them, even in the face of obstacles. Optimism is being hopeful and trusting in the future, it means the desire to have a desirable point of view towards things and to have a descriptive style to evaluate negative events as transient, external, and specific situations. Connectedness refers to the sense of satisfying relationships with others, the belief that others value, love, and trust the individual as a friend. Happiness is a constant state of positive mood, in which the individual has a general, but not temporary, satisfaction with his or her own life [7].

Since the introduction of developmental assets' framework, researchers have attempted to further study its different aspects. For instance, Greene et al. studied the relationship between developmental assets and sexual behaviors in Indian-American adolescents [4]. Shtasel-Gottlieb et al. evaluated the relationship between food security and developmental assets in adolescents living in low-income societies [8]. Bleck and DeBate conducted a study to explore the long-term relationship between developmental assets and health behaviors [9]. Smokowski et al. investigated the relationship between multi-level risk factors and developmental assets among rural adolescents [10]. Fraser-Thomas et al. examined the relationship between developmental assets and community size and the involvement of adolescent swimmers in sport [11]. Valois et al. evaluated the relationship between adolescents' developmental assets and perceived life satisfaction [12]. However, it is clearly evident that studies over the relationship between the developmental assets and well-being are scanty. The current study aimed to assess the status of developmental assets' among female students in secondary and high schools in Yazd, Iran and study the relationship between developmental assets and subjective well-being among these adolescents.

Methods

This was a descriptive-analytical cross-sectional study conducted in 2018 in Yazd, Iran. The study population consisted of adolescent female secondary school students aged 13 to 15 years, as well

as high school students aged 16 to 18 in Yazd. Consequently, a total of 573 students participated in the study.

Data were collected through the Developmental Asset Profile (DAP) of the Search Institute (13) as well as the EPOCH Measure of Adolescent Well-Being by Kern et al. [7]. The 58-item self-report DAP questionnaire collects data on adolescents' developmental abilities in eight categories (Support, Empowerment, Boundaries Expectations, Constructive Use of Time, Commitment to Learning, Positive Values, Social Competencies, and Positive Identity). This questionnaire can also be categorized and analyzed in five categories of Personal, Social, Family, School, and Community.

Items in DAP are scored based on a four-point Likert scale (0 = not at all/rarely; 1 = somewhat /sometimes; 2 = very/often; 3 = extremely/almost always). According to the DAP instructions, the mean raw scores of assets are multiplied by 10 after computing. Therefore, DAP scores range from 0 to 30 with higher scores indicating higher levels of assets. Scores 0-14 indicate poor, 15-20 show moderate, 21-25 represent good, and 26-30 suggest very good assets. These cut-points are set according to the instructions provided by the Search Institute. The instructions are derived from extensive studies conducted in several countries similar to the Iranian community and some other Asian countries. Its reliability has been internationally confirmed [13].

The EPOCH measure of adolescents' well-being was another questionnaire used in this study. It contains 20 items and measures five positive psychological characteristics of Engagement, Perseverance, Optimism, Connectedness, and Happiness in participants. Items are scored based on a 5-point Likert scale (1 = never; 2 = rarely; 3 = sometimes; 4 = often; 5 = always). Scores range from 20 to 100. Higher scores indicate higher levels of well-being in the individual.

In order to translate and localize the two tools, the following steps were taken. Initially, two Persian translators proficient in English translated the questionnaires individually. Then, a bilingual panel of experts (English and Persian) was formed made up of health professionals, experienced experts in designing and localizing the questionnaires, and translators. The panel members read and replaced the ambiguous or inappropriate items with more appropriate sentences. In the next stage, the translated Persian version was retranslated into English by two other translators. A process similar to the first stage was carried out to ensure about the appropriateness of the translated questionnaire. It is worth mentioning that the translators did not have any information about the original questionnaire. Similar to the first step, controversial items were discussed, translated, and edited, until a satisfactory version was obtained.

The re-translated versions of DAP and EPOCH were sent to the Search institute and Margaret Kern to receive their confirmation and suggestions. Eventually, cognitive interview and pretest were conducted on the target population. During the pre-test, ambiguous words were explained to the students. Later, another panel of experts made up of the same members was formed and the ambiguous words reported by students during the administration for the first time were replaced with appropriate phrases.

The test-retest reliability was investigated for a separate subgroup of adolescents from the study population ($n = 26$). They filled the questionnaire twice with a time interval of seven days. Table 2 shows the intra-class correlation coefficient to examine the reliability of questionnaire. These results indicated that the translated version of DAP and EPOCH were reliable and valid (Table 2).

Table 2: Intra-class correlation coefficient of subcategories of research tools

Scale	Construct	Number of items	Sample size	Intraclass Correlation Coefficient
DAP (the Asset View)	Support	7	26	0.91
	Empowerment	6	25	0.85
	Boundaries and expectations	9	26	0.84
	Constructive use of time	4	26	0.86
	Commitment to learning	7	26	0.93
	Positive values	11	26	0.93
	Social competencies	8	26	0.87
	Positive identity	6	26	0.80
	Personal assets	13	26	0.96
DAP (the Context View)	Social assets	13	26	0.92
	Family assets	10	26	0.89
	School assets	10	26	0.91
	Community assets	12	26	0.85
EPOCH	Engagement	4	26	0.68
	Perseverance	4	26	0.79
	Optimism	4	26	0.85
	Connectedness	4	26	0.85
	Happiness	4	26	0.84

In order to determine the content validity of the final translated versions of questionnaires, 10 health education and psychology experts were asked to observe the translation process. They were asked to check the questionnaires' quality in terms of grammar, wording, as well as items' ordering and positioning within the text and provide the necessary feedback to revise the items. Considering participants' socioeconomic status, no structured tool was applied and only two questions were asked to deal with the students' education level: “What is your mother/father's education level?” (Options: Elementary School, Diploma, Associate, Undergraduate, and Master's degree).

Furthermore, one question was proposed to deal with the economic status of the family: “How is your family's economic status?” (Options: very good, good, average, bad, very bad).

The students' socioeconomic status was studied using some questions about their parents' level of education and household economic status. Given that the minimum standard deviation of the overall DAP score was around 6 in previous studies, sample size was determined using a formula [13]. Considering an error rate of 0.5 and a confidence interval of 95%, the required sample size was 553. After considering a 5 percent of sample loss, a total number of 600 questionnaires was distributed, of which 588 were completed and returned to the researcher. In the next stage, 12 questionnaires were excluded from the study due to invalid response patterns according to the instructions provided by the Search Institute. Similarly, three other questionnaires were removed from further investigations because less than 10 percent of their items were answered (less than 6 items). Finally, 573 questionnaires were analyzed.

The clustered sampling method was applied to select the participants. The clusters were the female secondary and high schools in Yazd. First, three secondary schools and three high schools were selected randomly from all schools of the city. One class was selected randomly from every 10 classes in each of these schools and all consenting students of this class were recruited. The inclusion criteria were being female students of secondary and high schools of Yazd and having signed informed consent forms. The exclusion criteria included answering less than six items of DAP and/or less than two items of EPOCH, as well as having invalid patterns in answering the questionnaire according to the instructions of the Search Institute. Data was analyzed by IBM SPSS-24 software. Descriptive statistics, bivariate correlation, and linear regression were used for data analysis in this study. This study was approved by the Ethics Committee of Yazd Shahid Sadoughi University of Medical Sciences under the ethical code of IR.SSU.SPH.REC.1396.115.

Results

Participants were in the age range of 13-19 years and their mean age was 15.42 years (SD = 1.82). They were studying at the seventh, eighth, ninth, tenth, eleventh, and twelfth grades. Participants' mean Grade Point Average (GPA) was 19.08 (SD = 1.23). Among the studied students, 482 (84.60%) had no or only one brother and 458 (80.40%) had no or only one sister. More than half of the participants (n = 305, 53.80%) were the first child of family. Fathers of 12 and mothers of four adolescents had passed away. Most fathers (n = 421, 76%) and mothers (n = 439, 78%) did not have formal education. According to the adolescents' self-report, the economic status of most families was at good or average level (n = 479, 84%).

Skewness and kurtosis statistics was applied to assess the normal distribution of variables. In addition, the P-P plot of normality test was used to assess the variables' normality. For all constructs, the scatters fell on or were tightly close to the normal distribution line, which indicated a normal distribution of data. Table 3 represents the mean and standard deviation for the scores of developmental assets' categories as well as the number and percentage of adolescents with high and low levels of developmental assets. As Table 3 shows, the mean scores of developmental assets' categories were within the moderate range. With regard to constructive use of time, the scores of assets' view and community assets were in the poor range. The overall scores of subjective well-being reported by students were in the good range (Table 3).

Table-3: Mean and standard deviation of the developmental assets' and wellbeing categories' score

Measure	Variable	Average score	Standard Deviation	Range of possible Scores	Range of obtained Scores
DAP (the Asset View)	Support	20	5.60	0-30	1.43-30
	Empowerment	20	5.13	0-30	5-30
	Boundaries & expectations	20	5.03	0-30	7.56-30
	Constructive use of time	14	6.48	0-30	0-30
	Commitment to learning	21	5.29	0-30	5.71-30
	Positive values	20	4.77	0-30	5.45-30
	Social competencies	18	4.73	0-30	2.50-30
	Positive identity	18	5.68	0-30	1.67-30
DAP (the Context View)	Personal assets	19	4.48	0-30	6.15-30
	Social assets	20	4.59	0-30	5.38-30
	Family assets	23	5.25	0-30	3-30
	School assets	20	5.60	0-30	4-30
	Community assets	15	5.02	0-30	1.67-28.33
EPOCH	Engagement	36	7.93	10-50	10-50
	Perseverance	39	7.29	10-50	10-50
	Optimism	41	7.74	10-50	10-50
	Connectedness	41	8.03	10-50	10-50
	Happiness	39	9.03	10-50	10-50

The relationship of GPA, school year, economic status, and family well-being scores with DAP was assessed using bivariate correlation. The results of this analysis are presented in Table 4. As Table 4 shows, the economic status of family and students' grade had a negative significant

correlation with the total score of well-being and DAP, whereas, GPA had a positive and significant correlation with the total score of well-being and DAP (Table 4).

Table-4: The relationship of GPA, school year, economic status, well-being total scores, DAP total scores and scores of internal and external assets

	variables		1	2	3	4	5	6
1	GPA	R	1					
		Sig						
2	Grade	R	-.20**	1				
		Sig	.001					
3	Family affluence	R	-.22**	.14*	1			
		Sig	.000	.01				
4	Wellbeing total score	R	.16**	-.19**	-.30**	1		
		Sig	.008	.000	.000			
5	DAP total score	R	.20**	-.23**	-.26**	.74**	1	
		Sig	.001	.000	.000	.000		
6	Internal assets	R	.16**	-.20**	-.21**	.69**	.93**	1
		Sig	.006	.000	.000	.000	.000	
7	External assets	R	.21**	-.23**	-.26**	.68**	.94**	.75**
		sig	.000	.000	.000	.000	.000	.000

Pearson correlation analysis indicated a significant correlation between all categories of DAP model and well-being constructs (sig<0.001) (Table 5). The relationship between DAP and well-being constructs was also investigated by stepwise regression using IBM SPSS-24.

Table-5: Results of Pearson correlation analysis between all categories of DAP model and well-being constructs

			1	2	3	4	5	6	7	8	9	10	11	12
1	Support	R	1											
		Sig												
2	Empowerment	R	.63*	1										
		Sig	.000											
3	Boundaries & expectations	R	.71*	.60*	1									
		Sig	.000	.000										
4	Constructive use of time	R	.45*	.43*	.39*	1								
		Sig	.000	.000	.000									
5	Commitment to learning	R	.50*	.54*	.59*	.35*	1							
		Sig	.000	.000	.000	.000								
6	Positive values	R	.48*	.55*	.51*	.44*	.63*	1						
		Sig	.000	.000	.000	.000	.000							
7	Social competencies	R	.47*	.53*	.50*	.37*	.55*	.64*	1					
		Sig	.000	.000	.000	.000	.000	.000						
8	Positive identity	R	.46*	.53*	.45*	.41*	.51*	.55*	.57*	1				
		Sig	.000	.000	.000	.000	.000	.000	.000					
9	Engagement	R	.36*	.38*	.37*	.34*	.42	.42*	.39*	.35*	1			
		Sig	.000	.000	.000	.000	.000	.000	.000	.000				
10	Perseverance	R	.43*	.47*	.45*	.33*	.58*	.52*	.51*	.54*	.45*	1		
		Sig	.000	.000	.000	.000	.000	.000	.000	.000	.000			
11	Optimism	R	.37*	.41*	.31*	.28*	.34*	.36*	.40*	.63*	.36*	.48*	1	
		Sig	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000		
12	Connectedness	R	.52*	.49*	.45*	.33*	.27*	.30*	.38*	.43*	.39*	.41*	.51*	1
		Sig	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	
13	Happiness	R	.43*	.46*	.35*	.43*	.28*	.33*	.37*	.54*	.45*	.46*	.62*	.62*
		Sig	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

Table 6 represents the regression analysis results, where the scores of five well-being constructs (engagement, perseverance, optimism, connectedness, and happiness) were considered as the

dependent variables and scores of eight DAP categories (positive identity, positive values, commitment to learning, social competencies, support, boundaries and expectations, empowerment, and constructive use of time) were taken as the independent variables.

Table 6: Results of stepwise Regression Analysis

	Dependent variables									
	Engagement		Perseverance		Optimism		Connectedness		Happiness	
Independent variables	p-value	β	P-value	β	p-value	β	p-value	β	p-value	B
Support	.51	.04	.36	.04	.06	.09	.00	.27	.00	.14
Empowerment	.22	.06	.31	.05	.04	.10	.00	.21	.00	.18
Boundaries & expectations	.45	.04	.79	.01	.16	-.07	.02	.12	.67	-.02
Constructive use of time	.00	.12	.71	.01	.82	-.00	.14	.06	.00	.19
Commitment to learning	.00	.16	.00	.31	.90	-.00	.00	-.16	.02	-.10
Positive values	.04	.11	.23	.06	.49	-.03	.02	-.11	.13	-.07
Social competencies	.11	.08	.00	.12	.49	.03	.03	.10	.40	.04
Positive identity	.39	.04	.00	.23	.00	.58	.00	.20	.00	.38
R ²	.26		.45		.41		.37		.38	
R	.51		.67		.64		.61		.62	
Adjusted R ²	.25		.44		.41		.36		.37	

Discussion

The results of this study showed that developmental assets among Iranian adolescent girls were in the moderate range, since the mean scores of developmental assets' categories were in the range of 15-20. Regarding the developmental assets, the lowest score was attributed to constructive use of time, which showed a poor status. Therefore, barriers to this asset, such as distance and travel

problems should be considered [13]. Considering the context, the lowest scores were related to the community asset, which lied on the border between poor and moderate levels (Table 3). These low scores indicate poor attitudes of the community toward adolescents and inadequate after-school extracurricular activities or facilities for adolescents.

The main purpose of this study was to examine the relationship between adolescents' developmental assets and constructs of subjective well-being including engagement, perseverance, optimism, connectedness, and happiness.

Support and wellbeing constructs

According to our study, support is a predictor of both connectedness and happiness constructs of wellbeing. The results obtained by Moini et al. also confirmed that social support could predict happiness [14]. In other words, adolescents with positive parental connectedness, who receive love and support from parents, neighbors, and school are happier. Connectedness is learned within the family setting; growth of adolescents in an intimately connected family helps them to learn the skills of connecting with others. A study conducted by Ashida et al. also showed a significant relationship between connecting with others and the social support received by the individual. More communication within a network and closer connection between the network members leads the individual to receive more support. According to the literature, a significant relationship was observed between the individuals' connectedness and their health status, which indicates importance of the issue [15]. Furthermore, Garaigordob reported that happier adolescents had less behavioral problems, higher self-confidence, higher social adjustment, less negative social behaviors, and more appropriate social skills [16].

Empowerment and wellbeing constructs

According to the findings, empowerment is a predictor for the three constructs of optimism, connectedness, and happiness. A closer attention to adolescent wants reveals that what he/she really wants is to be looked upon as a worthy person, whose views are valued. An adolescent like to have a useful role in the society and serve others, which makes him feel useful. Security is also a basic need for every human being. Meeting these needs brings the adolescent happiness and optimism. One of the features of empowerment is service to others. Kappes and colloquies found that being generous to people and strangers amplified optimism [17]. Zeldin et al. showed that safety could predict connectedness [18]. Empowerment can also affect adolescents' self-confidence and self-belief can impact adolescents' happiness.

Boundaries/expectations and wellbeing constructs

The boundaries and expectations significantly predicted the construct of connectedness, which is a novel finding of our study. Previous studies indicated that clear rules in school and home as well as high expectations of parents and teachers affected the adolescent's success [19].

Furthermore, expectations from adolescents affect their high-risk behaviors in adulthood [20]. However, no study has ever investigated the relationship of boundaries and expectations with connectedness, which was considered in this study for the first time. This relationship can be justified by the fact that understanding connectedness by adolescents implies reception of a high level of social support. The relationship of social support and future expectations with wellbeing was also confirmed by Topaktaş et al. [21].

Constructive use of time and wellbeing constructs

Constructive use of time was a predictor of engagement and happiness constructs. In other words, adolescents who take part in teenage programs, exercises, clubs, or religious activities have a better and happier time at home and are more engaged with family members. Therefore, constructive use

of time is an essential requirement, especially for adolescents. Individuals' need to engage in creative and religious activities in Maslow's hierarchy of needs is considered as one of the basic needs for prosperity and growth [22]. A study conducted by Kehn confirmed that participation in religious activities significantly correlated with people's happiness and introduced it as a predictive factor of happiness [23]. Gilchrist and Wheaton showed that sports' programs increased adolescents' engagement, physical health, and well-being [24].

Commitment to learning and wellbeing constructs

The next result suggested that commitment to learning was a significant predictor of all four constructs of engagement, happiness, connectedness, and perseverance. An adolescent with greater commitment to learning displays greater participation in school, puts higher importance on assignments and school activities, and enjoys reading. Obviously, such a pupil receives positive feedbacks from school authorities and parents, which can lead to further satisfaction and happiness while causing greater connectedness with school, friends, and parents. In concordance with this, Bacca et al. showed that feedbacks, success level and time devoted to assignments, and learning results had positive correlation with four dimensions of students' motivation model, including attention, connection, self-esteem, and satisfaction [25]. Allen also reported that motivation had a meaningful and positive relationship with persistence of minority students [26].

Positive values and wellbeing constructs

The next finding of the current study was that positive values were a significant predictor of connectedness and engagement. Positive values such as honesty, accountability, virtue, integrity, and caring help a person to have better relationships with others, since people prefer to communicate with those with superior human attributes. In other words, individuals like and prize these attributes in others. Observation of values such as understanding, accountability,

consideration, caring, and diligence turns a relationship into an ideal one [27]. Shantz et al. also showed a positive and significant relationship between an individual's values and engagement [28].

Social competencies and wellbeing constructs

The result of social competencies showed that this positive development could significantly predict the two constructs of connectedness and perseverance. An adolescent with social competencies including interpersonal and cultural competencies, decision-making, as well as peaceful and persevering conflict-resolving skills is more capable and successful in dealing with others. However, such adolescents are better able to resolve interpersonal conflicts, express themselves, and accept others despite their differences. In addition, adolescents with high social competencies have higher perseverance, which may be due to the effect of social skills on people's self-esteem and self-efficacy [29]. Consequently, the high level of self-esteem is an effective factor for perseverance.

Positive identity and wellbeing constructs

According to the results, positive identity significantly predicted all four constructs, including happiness, connectedness, perseverance, and optimism. People with a positive identity are optimistic about the future, have a feeling of control over the events, and enjoy a higher self-confidence. These people work harder. Hong et al. also found similar results indicating positive and significant relationships between self-efficacy, locus of control, persistence, and commitment [30]. Bandura believes that self-efficacy affects the individual's choice of activities, efforts, and persistence. People with lower self-confidence may avoid performing usual tasks; whereas, confident individuals believe in their own ability and therefore, complete the task more easily [31]. Yee Ho et al. showed that finding meaning in life had a significant relationship with optimism and optimism had a significant relationship with psychosocial problems in adolescents [32].

Garaigordob reported that higher self-beliefs, more collaborative behaviors, fewer depression symptoms, and higher self-confidence were among the predictors of happiness [16].

Study limitations and required future research

In this study, adolescents of a different age group were investigated, their developmental assets profile were studied, and the relationship between DAP and wellbeing was examined in an Iranian community for the first time.

Given the exclusive investigation of female adolescents and application of self-reporting questionnaires for data collection, caution must be exercised regarding the results' generalizability and data interpretation. In this study, we focused on female students due to the gender-related differences in health and well-being. Further, girls are likely to experience more symptoms than boy [33,34] and seem to show more symptoms as they get older [34]. On the other hand, in many societies such as Iran, girls and women usually have lower social positions than men. So, they experience inequalities in power relations and are more susceptible to lower health outcomes, including lower wellbeing than men. In this regard, special attention should be paid to this vulnerable group of community on the basis of their different need [35].

Although school-related factors are very important among Eastern students, especially Iranians, they were not investigated thoroughly in this study. DAP lacks factors such as feeling pressured or stressed by schoolwork, classmates' support, and perceived school performance. Thus, their effects on wellbeing needs to be investigated in future studies. In addition, future research should be carried out to compare DAP and wellbeing between female and male adolescents in Iran.

Conclusion

The results showed that the developmental assets' categories predicted well-being dimensions significantly. Therefore, interventions should be designed and implemented to breed

developmental assets in adolescents to develop and strengthen their well-being. In this way, engagement, perseverance, optimism, connectedness, and happiness can be strengthened in adolescents, which prepare them for a better life.

This study showed a comprehensive demonstration of the strengths and weaknesses of the adolescents of the Iranian community. This study provides a good resource of information for professionals and policy makers to plan future interventions based on the Iranian adolescents' needs. There is a need for further exploration of the root causes of these weaknesses and strengths.

Conflict of interest: None declared

References

1. Leffert N, Benson PL, Scales PC, Sharma AR, Drake DR, Blyth DA. Developmental Assets: Measurement and Prediction of Risk Behaviors Among Adolescents. *Applied Developmental Science* 1998, 2(4):209-30.
2. Fulkerson JA, Story M, Mellin A, Leffert N, Neumark-Sztainer D, French SA. Family dinner meal frequency and adolescent development: relationships with developmental assets and high-risk behaviors. *The Journal of adolescent health : official publication of the Society for Adolescent Medicine* 2006, 39(3):337-45.
3. Benson PL, Scales PC, Syvertsen AK. The contribution of the developmental assets framework to positive youth development theory and practice. *Adv Child Dev Behav* 2011, 41:197-230.
4. Greene KM, Eitle D, Eitle TM. Developmental Assets and Risky Sexual Behaviors among American Indian Youth. *J Early Adolesc* 2018, 38(1):50-73.
5. Daniel EA. Development Assets: A Synthesis of the Scientific Research on Adolescent Development, Peter C. Scales and Nancy Leffert. *Leaven* 2002, 10(1):article 11.
6. Forgeard M, Jayawickreme E, Kern ML, Seligman MEP. Doing the right thing : Measuring wellbeing for public policy. *International Journal of Wellbeing* 2011, 1(1):79-106.
7. Kern ML, Benson L, Steinberg EA, Steinberg L. The EPOCH Measure of Adolescent Well-Being. *Psychol Assess* 2016, 28(5):586-97.

8. Shtasel-Gottlieb Z, Palakshappa D, Yang F, Goodman E. The relationship between developmental assets and food security in adolescents from a low-income community. *J Adolesc Health* 2015, 56(2):215-22.
9. Bleck J, DeBate R. Long-Term Association Between Developmental Assets and Health Behaviors: An Exploratory Study. *Health Educ Behav* 2016, 43(5):543-51.
10. Smokowski PR, Guo S, Rose R, Evans CB, Cotter KL, Bacallao M. Multilevel risk factors and developmental assets for internalizing symptoms and self-esteem in disadvantaged adolescents: modeling longitudinal trajectories from the Rural Adaptation Project. *Dev Psychopathol* 2014, 26(4 Pt 2):1495-513.
11. Fraser-Thomas J, Côté J, MacDonald DJ. Community Size in Youth Sport Settings: Examining Developmental Assets and Sport Withdrawal 2010, (2).
12. Valois RF, Zullig KJ, Huebner ES, Drane JW. Youth Developmental Assets and Perceived Life Satisfaction: Is There a Relationship? *Applied Research in Quality of Life* 2009, 4(4):315.
13. Institute S. Developmental Assets Profile User Manual. 615 First Avenue NE, Suite 125 Minneapolis, MN 55413: Search Institute; 2005. Available from: www.search-institute.org
14. Moeini B, Barati M, Farhadian M, Ara MH. The Association between Social Support and Happiness among Elderly in Iran. *Korean J Fam Med* 2018, 39(4):260-5.
15. Ashida S, Heaney CA. Differential associations of social support and social connectedness with structural features of social networks and the health status of older adults. *J Aging Health* 2008, 20(7):872-93.
16. Garaigordobil M. Predictor variables of happiness and its connection with risk and protective factors for health. *Front Psychol* 2015, 6(1176).
17. Kappes A, Faber NS, Kahane G, Savulescu J, Crockett MJ. Concern for Others Leads to Vicarious Optimism. *Psychological Science* 2018, 29(3):379-89.
18. Zeldin S, EricKrauss S, KimJessica T, Abdullah C. Pathways to Youth Empowerment and Community Connectedness: A Study of Youth-Adult Partnership in Malaysian After-School, Co-Curricular Programs. *J Youth Adolescence* 2016, 45(8):1638.
19. Guo X, Lv B, Zhou H, Liu C, Liu J, Jiang K, et al. Gender Differences in How Family Income and Parental Education Relate to Reading Achievement in China: The Mediating Role of Parental Expectation and Parental Involvement. *Front Psychol* 2018, 9(783).

20. Brumley LD, Jaffee SR, Brumley BP. Pathways from Childhood Adversity to Problem Behaviors in Young Adulthood: The Mediating Role of Adolescents' Future Expectations. *J Youth Adolesc* 2017, 46(1):1-14.
21. Topaktas B, Dundar C, Peksen Y. A Cross-Sectional Analysis of the Relationship among Adolescents' Perceived Social Support, Psychological State and Future Expectations among Turkish Students. *Isr J Psychiatry Relat Sci* 2017, 54(2):25-30.
22. Rezaee S. Investigating Ghorbanalies personality according to theory of Mazlow. *Journal of Folklore Studies* 2014, 2(3):35-51.
23. Kehn DJ. Predictors of Elderly Happiness. *Activities, Adaptation & Aging* 1995, 19(3):11-30.
24. Gilchrist P, Wheaton B. Lifestyle sport, public policy and youth engagement: examining the emergence of parkour. *International Journal of Sport Policy and Politics* 2011, 3(1):109-31.
25. Bacca J, Baldiris S, Fabregat R, Kinshuk. Insights Into the Factors Influencing Student Motivation in Augmented Reality Learning Experiences in Vocational Education and Training. *Front Psychol* 2018, 9(1486).
26. Allen D. Desire to finish college: An Empirical Link Between Motivation and Persistence. *Research in Higher Education* 1999, 40(4):461-85.
27. Geboy CH. *Life Planning Education A Youth Development Program*. Washington, DC: Advocates for youth; 1995. Available from: www.advocateforyouth.org
28. Shantz A, Saksida T, Alfes K. Dedicating Time to Volunteering Values, Engagement, and Commitment to Beneficiaries. *Applied Psychology* 2014, 63(4):671-97.
29. Losa-Iglesias ME, Lopez Lopez D, Rodriguez Vazquez R, Becerro de Bengoa-Vallejo R. Relationships between social skills and self-esteem in nurses: a questionnaire study. *Contemp Nurse* 2017, 53(6):681-90.
30. Hong BSS, Shull PJ, Haefner LA. Impact of Perceptions of Faculty on Student Outcomes of Self-Efficacy, Locus of Control, Persistence, and Commitment. *Journal of College Student Retention: Research, Theory & Practice* 2011, 13(3):289-309.
31. Schunk DH. Self-Efficacy and Academic Motivation. *Educational Psychologist* 1991, 26(3-4):207-31.

32. Ho MY, Cheung FM, Cheung SF. The role of meaning in life and optimism in promoting well-being. *Personality and Individual Differences* 2010, 48(5):658-63.
33. Wiens V, Kyngäs H, Pölkki T. The meaning of seasonal changes, nature, and animals for adolescent girls' wellbeing in northern Finland: A qualitative descriptive study. *International journal of qualitative studies on health and well-being*. 2016;11:10.3402/qhw.v11.30160.
34. Wiens V, Kyngas H, Polkki T. A descriptive qualitative study of adolescent girls' well-being in Northern Finland. *Int J Circumpolar Health* 2014, 73(24792).
35. Davidson PM, McGrath SJ, Meleis AI, Stern P, Digiacomo M, Dharmendra T, et al. The health of women and girls determines the health and well-being of our modern world: A white paper from the International Council on Women's Health Issues. *Health care for women international* 2011, 32(10):870-86.

Seyed Saeed Mazloomi, Rabea Agh Atabay, PhD student, School of public health, Shahid Sadoughi University of Medical Sciences, Mehdi Rahimi, Department of psychology and education, Yazd University, Hosein Fallahzadeh, Department of Epidemiology and Biostatistics, Shahid Sadoughi University of Medical Sciences, Aliakbar Vaezi, department of nursing, school of nursing & midwifery, research center for nursing & midwifery care in family health, Shahid Sadoughi University of Medical Science, Yazd, Iran.