Predicting Hope Levels of High School Students: The Role of Academic Self-Efficacy and Problem Solving

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Abstract

The current study presented how well academic self-efficacy, problem solving, gender, and age predict dispositional and state hope levels of high school students in Turkey. The participants were consisted of 392 high school students. Of the participants, 230 (58.7%) were girls and 162 (41.3%) were boys. Questionnaire measures of dispositional and state hope, academic self-efficacy, and problem solving were administered to the participants. Two multiple linear regression analyses were performed to examine to what extent the independent variables predict dispositional and state hope levels of participants. The results indicated that the predictors significantly accounted for 22% of the variance of dispositional hope, 25% of the variance of state hope. In both multiple linear regression models, academic self-efficacy and problem solving were significant predictors of students' dispositional and state hope scores. Higher hope scores were significantly associated with higher academic self-efficacy beliefs and better problem solving skills. The findings were discussed in the light of the literature with some implications for school counselors and educators.

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Introduction

In the last two decades, with the increased application of positive psychology, researchers and mental health professionals have paid more attention to human strengths (Duckworth, Steen, & Seligman, 2005; Seligman & Csikszentmihalyi, 2000). The focus on pathology in psychological practices has shifted on the positive features of human being (e.g. happiness, mindfulness, optimism, resiliency, self-efficacy, well-being). One of them is *hope* introduced into literature by Snyder et al. (1991). Snyder (2002) described it as "the perceived capability to derive pathways to desired goals, and motivate oneself via agency thinking to use those pathways" (p. 249). It is a cognitive process consisting of two major components namely pathways and agency. *Pathways thinking* entails "the perceived capacity to produce one or more workable paths to meet goals", whereas *agency thinking* refers to "the perceived capacity to use one's pathways to reach desired goals" (Snyder, 2002, pp. 251). Both of components are interrelated, reciprocal, and essential to define the hope. Therefore, neither alone is enough to explain the concept of hope. They are evaluated together (Magaletta & Oliver, 1999; Snyder, 2002). The hope theory puts much more emphasis on cognitive process but it doesn't mean that emotions are ignored. Conversely, emotions are seen as a consequence of cognitive evaluation of goal-related activities (Snyder, Cheavens, & Michael, 1999; Snyder et al., 1991).

In this study, academic self-efficacy and problem solving are considered as predictive variables. Academic self-efficacy refers to the belief in one's ability to perform academic performance at the desired level (Zimmerman, Bandura, & Martinez-pons, 1992). According to Bandura (1997), individuals with high academic self-efficacy beliefs have confidence in planning, organizing and conducting their academic works. In the relevant literature, it has been found that individuals with high academic self-efficacy beliefs are more successful in academic works (Feldman & Kubota, 2015; Høigaard, Kovač, Øverby, & Haugen, 2015). Problem solving is a complex and dynamic process in which the individual regulates cognitive, emotional, and behavioral responses (Heppner & Krauskopf, 1987). Problem solving also refers to all activities that are successful or unsuccessful, conscious or unconscious at the point of resolution of or avoidance from a problem. In this sense, the problem solving process is not just the process of cognitive processing of information (Heppner & Krauskopf, 1987). Although academic self-efficacy and problem solving are conceptually perceived as close concepts to the hope, they differ from it in some aspects (Magaletta & Oliver, 1999; Snyder, 2002; Snyder et al., 1999). The academic self-efficacy is a specific aspect of general self-efficacy. The construct of self-efficacy has some similarities with hope regarding that both of them are based on motivational and goal-directed theories. Contrary to the self-efficacy, the hope theory places more emphasis on goals (continuing, cross-situational, and situational), emotions, and both outcome (equal to pathways thinking) and efficacy expectancies (equal to agency thinking) (Snyder, 2002; Snyder et al., 1999). However, Bandura (1977) underlines the importance of focusing on situational self-efficacy thoughts. The problem solving is another related construct with hope. As a similarity, both of them focus on possible pathways to meet goals. The pathways component of hope is similar to problem solving. In contrast to the problem solving, the hope theory emphasizes the importance of agency or motivation to activate pathways thinking (Snyder, 2002; Snyder et al., 1999).

The hopeful thinking has a crucial role in the field of mental health regarding primary and secondary prevention (Snyder, Feldman, Taylor, Schroeder, & Adams III, 2000). Prior to the problems or after they emerged, the hopeful thinking leads individuals to become increasingly a searcher of knowledge and preventive strategies for their well being. With this leading, a sense of successful goal pursuits and confidence in being able to cope with some possible future adversities constitute a protective mechanism for a high-hope person (Snyder et al., 2000). Snyder et al. (2000) described hope as "the core of prevention" (p. 256). They associated the components of hope theory with the steps of an effective prevention starting with establishing a clear goal, setting workable routes, and a motivation for initiating those plans to meet preventive goals. The hopeful thinking takes an important place not only in the field of mental health, but also in the field of education (Snyder et al., 1991; Snyder, Lopez, Shorey, Rand, & Feldman, 2003). Snyder et al. (2002) underline the importance of using hope theory in

the field of education as a motivational model. The theory also suggests that high hope students could easily produce multiple pathways to reach their academic goals. In that sense, high hope students could be considered as determined, good at problem solving and generating alternate plans, and motivated in implementing plans to be successful in their academic tasks (Snyder et al., 2002).

There is a vast of research on adolescent hope in the literature. A number of researchers reviewed and meta-analyzed the hope studies carried out on adolescent population. Yarcheski and Mahon (2014) conducted a meta-analytic study on the predictors of hope in adolescents aged between 10 and 23 years. They examined the hope studies published from 1990 to 2012, and found that positive affect, life satisfaction, optimism, self-esteem, and social support were the salient predictors of hope. They also identified the predictors of hope that had medium effect size (depression), small effect sizes (negative affect, stress, academic achievement, and violence), and trivial effect size (gender). Esteves, Scoloveno, Mahat, Yarcheski, and Scoloveno (2013) conducted an integrative review on the hope research in adolescent aged between 10 and 23 years. They investigated the studies published from 1990 to 2010. They categorized the variables studied in relation to hope into categories such as antecedent, coincident, and consequent variables. The antecedent variables studied mostly in relation to hope were reported as age and gender; the coincident variables were social support, self-esteem, optimism, future time perspective, self-efficacy, religiousness, stress, hopelessness, depression, and anxiety; and the consequent variables were life satisfaction, health practices, well-being, purpose, academic achievement, internalizing/externalizing behaviors, substance abuse, and positive/negative affects (Esteves et al., 2013).

Although the importance of hope in adolescent has been recognized in the Western countries, it appears that it is relatively a new research topic in the Turkish literature that studied mostly in the past 15 years. Researchers in Turkey initially translated and adapted Snyder and his colleagues' hope scales (Snyder et al., 1991, 1996, 1997) into Turkish (Akman & Korkut, 1993; Atik & Kemer, 2009; Denizli, 2004; Tarhan & Bacanlı, 2015). With the availability of the Turkish hope scales, a number of researchers have conducted studies on adolescent populations exploring the associations between hope and several variables such as test anxiety (Denizli, 2004), university entrance examination scores (Kemer, 2006), bullying (Atik, 2009), cyber bullying (Peker & Akbaba, 2016), academic procrastination (Uzun Özer, 2009), perceived family social support (Kemer & Atik, 2012; Peker & Akbaba, 2016), subjective well-being (Şahin, Aydın, Sarı, Kaya, & Pala, 2012), career decision making self-efficacy (Sarı & Şahin, 2013) and social and emotional learning skills (Kabakçı & Totan, 2013). There are also studies examining the definition of the concept of hope (Tarhan & Bacanlı, 2016) and the relationship between hopeful thinking and the other ways of thinking (critical, relevant and creative) (Tarhan, Bacanlı, Dombaycı, & Demir, 2011), and the impact of the peace education program on the hope levels of high school students (Sağkal & Türnüklü, 2017). Some hope studies were conducted on the samples of university students. In these studies, the relations of hope with psychological vulnerability, resilience and subjective well-being (Satici, 2016), parental acceptance/involvement, self-esteem and academic achievement (Aydın, Sarı, & Şahin, 2014) academic self-efficacy (Atik, Çayırdağ, Demirli, Kayacan, & Çapa Aydın, 2008), and positive and negative affects (Uzun Özer & Tezer, 2008) were examined. There are also hope studies on adult samples. For instance, Bilge, Arslan, and Doğan (2001) investigated the relationship between the levels of hope and the problem solving skills, anger and self-esteem levels of women who applied to shelters. Ardahan, Genç, and Uludağ (2015) investigated the effects of regular physical activities on the hope levels of women with breast cancer. Recently, in the editorial of Demirli Yıldız (2016), a book study has been carried out in which studies on hope in Turkey and abroad were reviewed, and the concept of hope was discussed in many ways.

Although many variables have been studied in relation to adolescent hope in the literature, there is a gap for the relations of academic self-efficacy and problem solving with adolescent hope. The meta-analytic and integrative review studies (Esteves et al., 2013; Yarcheski & Mahon, 2014) tried to identify the most powerful predictors of adolescent hope in order to promote evidence-based practices and preventions in mental health. But, to understand which variables are the most powerful predictors of hope in adolescent, it is necessary to analyze the effects of other variables (e.g. academic self-efficacy and problem solving) in relation to hope. In addition, the literature of adolescent hope mostly relied on the knowledge gathered from the Western cultural contexts. Therefore, there is a need of research contributing existing literature from a different cultural perspective. In contrast to the individualistic values of Western cultures, the collectivist values were more salient in Turkish culture. Mocan-Aydın (2000) stated "Turkish people still seem to be close to the collectivism end while at the same time striving for individualism" (p. 282). Therefore, to fill these gaps, the present study aimed to examine the role of academic self-efficacy, problem solving, gender, and age in predicting state and dispositional hope levels of Turkish high school students. This study addressed the following research questions:

1. To what extent academic self-efficacy, problem solving, gender, and age predict dispositional hope levels of high school students?

2. To what extent academic self-efficacy, problem solving, gender, and age predict state hope levels of high school students?

Method

Participants

The participants of this study consisted of 392 students who enrolled in four different Anatolian high schools. They were recruited from three cities of Turkey (Bursa, İzmir, and Ankara) through employing a convenient sampling method. Of the participants, 230 (58.7%) were girls and 162 (41.3%) were boys. Participants were from 9th grade ($n = 71$, 18.1%), 10th grade ($n = 107$, 27.3%), and 11th grade ($n = 141$, 36.0%), and 12th ($n = 73$, 18.6%). The ages of the participants ranged between 15 and 21 ($M = 16.80$, $SD = 1.11$).

Measures

Personal Information Form. Participants provided information on their gender, grade level, and age on a personal information form.

Dispositional Hope. The Dispositional Hope Scale (DHS; Snyder et al., 1991) was used to assess students' dispositional hope levels. The DHS consists of 12 items and is responded on an 8-point scale (1 = *definitely false* to 8 = *definitely true*). It is composed of two components, namely pathways (e.g. "I can think of many ways to get out of a jam") and agency (e.g. "I energetically pursue my goals"). It also includes four filler items (e.g. "I feel tired most of the time"). The scores obtained from the scale range between 8 and 64. Higher scores indicate higher dispositional hope. The internal consistencies and test-retest reliabilities of the original version of the DHS were examined on various samples. The Cronbach's alpha coefficients ranged from .74 to .84 for the scores of overall scale, from .63 to .80 for the scores of pathways sub-dimension, and from .71 to .76 for the scores of agency sub-dimension. The test-retest correlations ranged from .73 to .85 (over 3 to 10 weeks) ($ps < .001$). The scale had also extensive convergent and discriminant validation (Snyder et al., 1991). The DHS was translated and adapted into Turkish by Akman and Korkut (1993). The Turkish version of the DHS is responded on a 4-point scale (1 = *strongly disagree* to 4 = *strongly agree*). Different from the original factor structure, the Turkish DHS yielded one factor solution. The Cronbach's alpha coefficient was found .65 for overall scale. The test-retest correlation was .66 ($p < .001$) over a four-week interval. But, Kemer (2006) and Kemer and Atik (2012) reexamined factor structure of the Turkish DHS on high school samples. In contrast to previous studies (Akman & Korkut, 1993; Denizli, 2004), they obtained two-factor solutions as in the original scale (Kemer, 2006; Kemer & Atik, 2012). In the study conducted by Kemer and Atik (2012), a two-factor structure was examined through confirmatory factor analysis and adequate fit indices were obtained

$[\chi^2(19) = 41.20, \chi^2/df = 2.17$, RMSEA = .04, SRMR = .04, GFI = .97, AGFI = .95, IFI = .98, NFI = .97, CFI =.98]. In the study of Kemer (2006), construct validity of the scale was examined with exploratory factor analysis, and a two-factor structure was found. The factor loadings ranged from .61 to .78 for the dimension of pathways, from .47 to .79 for the dimension of agency. The Cronbach's alpha coefficients were .72 the dimension of pathways and .66 for the dimension of agency (Kemer, 2006). In the current study, the factor structure of the Turkish version of the DHS was examined through confirmatory factor analysis and the fit indices of the two-factor model were found to be good $[\chi^2 = 31.45, \chi^2/df = 1.66$, RMSEA = .04, SRMR = .05, TLI = .99, CFI = .99]. The Cronbach's alpha coefficients were .81 for the scores of overall scale, .74 for the scores of pathways sub-dimension, and .70 for the scores of agency sub-dimension. In this study, only the total scores of the scale were used in the analyses.

State Hope. The State Hope Scale (SHS; Snyder et al., 1996) was used to evaluate students' state hope, which is related to specific and present goal-related situations. It is a six-item and an 8-point scale (1 = *definitely false* to 8 = *definitely true*). The SHS consists of two components namely pathways (e.g. "I can think of many ways to reach my current goals") and agency (e.g. "At the present time, I am energetically pursuing my goals"). The total scores range between 6 and 48. Higher scores indicate higher state hope. The internal consistencies and test-retest reliabilities of the SHS were examined on various samples. The Cronbach's alpha coefficients ranged from .82 to .95 (median alpha of .93) for the scores of overall scale; from .83 to .95 (median alpha .91) for the dimension of agency; and from .74 to .93 (a median alpha of .91) for the dimension of pathways. The test-retest correlations ranged from .48 to .93 (over 2 days to 4 weeks) (*ps* < .001). The SHS had also extensive convergent and discriminant validation (Snyder et al., 1996). Denizli (2004) translated and adapted the SHS into Turkish, and with the permission, created a 4-point scale (1 = *strongly disagree* to 4 = *strongly agree*). The Turkish version of the SHS yielded two-factor solution which consistent with the original factor structure. The Cronbach's alpha coefficients were .48 for the overall scale scores, .58 for the pathways sub-dimension scores, and .66 for the agency sub-dimension scores. In the current investigation, the factor structure of the Turkish version of the DHS was examined through confirmatory factor analysis and the fit indices of the two-factor model were found to be satisfying $[\chi^2 = 38.51, \chi^2/df = 4.81$, RMSEA = .10, SRMR = .05, TLI = .93, CFI = .96]. Since the internal consistency of the Turkish version of the SHS wasn't satisfactory, the Cronbach's alpha coefficients were reexamined and they were found as .79 for the overall scale scores, .74 for the scores of pathways sub-dimension, and .65 for the scores of agency sub-dimension. In this study, only total scores of the scale were used in the analyses.

Academic Self-Efficacy. The Academic Self-Efficacy Scale (ASES; Jerusalem & Schwarzer, 1981) was used to measure students' beliefs in their academic capabilities to execute a task in a successful way. The ASES is a seven-item (e.g. "I know very well what I need to do to get the very high scores") and unidimensional measure. It is responded on a 4-point scale (1 = *strongly disagree* to 4 = *strongly agree*). The scores obtained from the scale range between 7 and 28. Higher scores reflect higher perceived academic self-efficacy beliefs. The Cronbach's alpha coefficient for the overall scale scores was found as .87. It had also concurrent validation with other measures (e.g. self-esteem) (Jerusalem & Schwarzer, 1981). Yılmaz, Gürçay, and Ekici (2007) translated and adapted the ASES into Turkish. The Turkish version of the ASES yielded one-factor solution that is consistent with the original factor structure. The Cronbach's alpha coefficient was calculated as .79 for the overall scale scores. Both studies (Jerusalem & Schwarzer, 1981; Yılmaz, et al., 2007) were carried out on college samples. Therefore, Erkan (2008) examined the validity and reliability of the Turkish version of the ASES on a high school sample. She found the same factor structure as in the original study. Since the current study was conducted on high school sample, the factor structure of the Turkish version of ASES was reexamined through confirmatory factor analysis. The fit indices of the one-factor model were found to be satisfying $[\chi^2 = 75.66, \chi^2/df = 5.40$, RMSEA = .10, SRMR = .07, TLI = .87, CFI = .91]. The Cronbach's alpha coefficient was .70 for the scores of overall scale.

Problem Solving. The Problem Solving Inventory (PSI; Heppner & Petersen, 1982) was used to assess students' perception of their problem-solving beliefs and behaviors. The PSI consists of 35 items (e.g. "I am usually able to think up creative and effective alternatives to solve a problem"), including 3 filler items, with a 6-point scale (1 = *strongly agree* to 6 = *strongly disagree*). The PSI is composed of three sub-dimensions: problem solving confidence (11 items), approach-avoidance style (16 items), and personal control (5 items). The PSI total score is calculated by the summation of these three sub-dimensions. The total scores range between 32 and 192. Lower scores on the PSI reflect higher levels of problem solving behavior. The Cronbach's alpha coefficients were found to be .90 for the overall scale and between .72 and .85 for the sub-dimensions. The test–retest correlations over a two-week period were .89 for the scores of overall scale and between .83 and .88 for the sub-dimensions. Şahin, Şahin, and Heppner (1993) translated and adapted the PSI into Turkish. Different from the original factor structure, the Turkish version of the PSI yielded a six-factor solution. The Cronbach's alpha coefficients were .88 for the overall scale and between .59 and .78 for the sub-dimensions. In the current study, the factor structure of the Turkish version of the PSI was examined through confirmatory factor analysis and the fit indices of the six-factor model were found to be good [χ^2 = 821.35, χ^2/df = 1.96, RMSEA = .06, SRMR = .10, TLI = .94, CFI = .94]. The Cronbach's alpha coefficients were .82 for the total scores of overall scale and between .59 and .74 for the sub-dimensions of the scale. In this study, only the total scores of the scale were used in the analyses.

Procedure

The data collection set (DHS, SHS, ASES, PSI, and a brief personal information form) was administered to the volunteer students in their classrooms. The administration lasted about 30-35 minutes. During the data collection process, some ethical issues (e.g. informed consent and confidentiality) were considered. The aim of the research and the importance of participation were explained to the participants by the researchers. The volunteer participation was ensured and it was underlined that they can discontinue filling out the scales at any time without any consequence. Any personal information (name or student number) on the forms wasn't asked. It was explained that all the answers will be kept confidential and they will be used only for research purposes.

Analysis of Data

Before analyzing the data, data screening procedures were applied to assess the applicability of multiple linear regression analyses for the present data. The underlying assumptions of multiple regression analyses (outlier tests, normality, homoscedasticity, linearity, and multicollinearity) were checked. After checking all assumptions and meeting the requirements, two multiple linear regression analyses were performed to examine how well academic self-efficacy, problem solving, gender, and age predict dispositional and state hope levels of students. Gender was evaluated as dichotomous variable. All statistical analyses were carried out with utilizing PASW Statistics (v. 18).

Results

The mean scores and standard deviations were presented in Table 1 along with the correlation coefficients between the criterion variables (dispositional hope and state hope) and predictors (academic self-efficacy, problem solving, gender, and age). As seen in the table, there were significant correlations: students who had higher dispositional hope scores reported higher academic self-efficacy scores (r = .34, p < .01) and lower problem solving scores (r = -.35, p < .01); students who had higher state hope scores reported higher academic self-efficacy scores (r = .41, p < .01) and lower problem solving scores (r = -.32, p < .01). Dispositional hope scores were related to the students' state hope scores (r = .67, p < .01).

Table 1. Means, Standard Deviations, and Intercorrelations for Criterion Variables and Predictors

Variables	M	SD	Bivariate Correlations				
			1	2	3	4	5
Criterion Variables							
1. Dispositional Hope	28.38	4.74					
2. State Hope	17.85	3.73	.67**				
Predictor Variables							
3. Academic Self-Efficacy	18.67	4.14	.34**	.41*			
4. Problem Solving	100.50	17.63	-.35**	-.32 **	-.10		
5. Gender[a]			-.04	-.01	.08	.13*	
6. Age	16.80	1.11	.00	-.07	-.04*	-.08	-.09

Note: n = 392, *p < .05, **p < .01; [a] 1 = Girl, 2 = Boy

To examine how well academic self-efficacy, problem solving, gender, and age predict dispositional and state hope levels of students, two multiple linear regression analyses were conducted. Results indicated that multiple linear regression coefficients were significant for the first model in which dispositional hope evaluated as outcome variable [R = .45, R^2 = 22, $F(4, 387)$ = 26.88, p < .001] (*see* Table 2) and for the second model in which state hope was an outcome variable [R = .50, R^2 = .25, $F(4, 387)$ = 33.00, p < .001] (*see* Table 3).

In the first model, the multiple correlation coefficient between the linear combination of four predictors and dispositional hope was .45. These four predictors explained 22% of the variation in dispositional hope. Semipartial coefficients, defined as the proportion of variance uniquely explained by the predictor variables, for academic self-efficacy, problem solving, gender, and age were .10, .11, .00, and .00 respectively. The academic self-efficacy and problem solving contributed to the explained variance in dispositional hope significantly. One unit increase in the scores of these variables resulted in .35 units increase and -.09 units decrease in the dispositional hope scores respectively, while holding other predictors constant. According to the regression coefficients, there was a positive relationship between academic self-efficacy and dispositional hope and a negative relationship between problem solving and dispositional hope (Lower scores on the PSI reflect higher levels of problem solving behavior). Problem solving was more predictive than the other predictors (*see* Table 2).

Table 2. Multiple Linear Regression Analysis Predicting Dispositional Hope

Model 1	B	SE	β	sr^2	p
1. Academic Self-Efficacy	.35	.05	.31	.10	.000*
2. Problem Solving	-.09	.01	-.32	.11	.000*
3. Gender[a]	-.22	.44	-.02	.00	.614
4. Age	-.08	.19	-.02	.00	.675

Model statistics: R = .45, R^2 = 22, $F(4, 387)$ = 26.88, p < .001
Note: n = 392, *p < .001; [a] 1 = Girl, 2 = Boy

In the second model, the multiple correlation coefficient between the linear combination of four predictors and state hope was .50. These four predictors explained 25% of the variation in state hope. Semipartial coefficients for academic self-efficacy, problem solving, gender, and age were .16, .10, .00, and .01 respectively. The academic self-efficacy and problem solving contributed to the explained variance in state hope significantly. One unit increase in the scores of these variables resulted in .35 units increase and -.06 units decrease in the state hope scores respectively, while holding other predictors constant. According to the regression coefficients, there was a positive relationship between academic self-efficacy and state hope and a negative relationship between problem solving and state hope (Lower scores on the PSI reflect higher levels of problem solving behavior). Academic self-efficacy was more predictive than the other predictors (*see* Table 3).

Table 3. Multiple Linear Regression Analysis Predicting State Hope

Model 2	B	SE	β	sr^2	p
1. Academic Self-Efficacy	.35	.04	.38	.16	.000[*]
2. Problem Solving	-.06	.01	-.29	.10	.000[*]
3. Gender[a]	.08	.34	.01	.00	.283
4. Age	-.27	.15	-.08	.01	.743

Model statistics: R = .50, R^2 = .25, F(4, 387) = 33.00, p < .001

Note: n = 392, [*]p < .001; [a] 1 = Girl 2 = Boy

Discussion, Conclusion and Suggestions

The current investigation sought to extend the existing literature on adolescent hope by exploring the role of academic self-efficacy, problem solving, age, and gender in predicting hope levels of Turkish high school students. The findings indicated that academic self-efficacy and problem solving were significant predictors of dispositional hope and state hope. According to the findings, as the dispositional and state hope levels were increased, the levels of academic self-efficacy and problem solving were increased. The results of the study were consistent with previous investigations conducted in Western cultural contexts (Magaletta & Oliver, 1999; Snyder, 2002; Snyder et al., 1991). The overall pattern of results showed that higher hope levels (as dispositional or state) were related to higher academic self-efficacy beliefs and better problem solving skills in Turkish cultural context. The former result was in accordance with theoretical explanation (Snyder, 2002). The academic self-efficacy seems to in line with the agency component of hopeful thinking. Both of the constructs are associated in terms of having a cognitive process, being related to individual's goals and future, and lastly being powerful determinants of behaviors (Magaletta & Oliver, 1999). The latter result pointed out the link between the pathways thinking and problem solving. Snyder (2002) indicated that the high-hope individuals are good at producing paths for pursuing a specific goal. Also, if the plans are not work or attainable, high-hope persons are flexible in producing alternate paths. However, low-hope individuals as compared to high-hope ones are more indecisive, uncertain, and less flexible about the paths for reaching their aims. Additional to the theoretical explanation, Cannon et al. (1999) found that greater hopelessness was related with poor problem solving abilities. Additionally, the reciprocal relationships between the predictors and outcome variables should be considered. This is, higher academic self-efficacy beliefs and better problem solving skills contributed positively to the enhancement of hope levels or reversely higher hope scores contributed positively to the enhancement of academic self-efficacy belief and problem solving skills.

Regarding the relationship between demographic variables (gender and age) and hope, no significant gender differences were found in dispositional and state hope, which was consistent with previous research findings obtained from the United States of America samples (Feldman & Snyder, 2005; Snyder et al., 1991; Snyder et al., 1996), inconsistent with the results of Kemer and Atik's study (2012) conducted on a Turkish sample. Kemer and Atik (2012) grounded this differentiation based on child-rearing practices and social norms in Turkey and it was found that boys have higher levels of hope than girls. This mixed result for gender in predicting adolescent hope was supported by the meta-analytic study of Yarcheski and Mahon (2014) indicating that gender was found statistically significant in 7 of the 13 studies. In addition, Esteves et al. (2013) underlined the mixed results for gender differences in hope. Nevertheless, the lack of gender differences in this study could be explained with various reasons such as sample selection strategy, characteristics of participants, cultural and societal influences etc. This issue needs much more investigation in further studies to reach a conclusion. In terms of the role of age in hope, similar to Snyder et al.'s findings (1991, 1997), no age differences was found, which seems to indicate that hope levels do not change based on age differences. The review study of Esteves et al. (2013) indicating that age wasn't related to hope in the samples of healthy adolescents supported this finding.

It is though that the findings of this study will shed light to the counseling process and interventions, and future studies. Our findings could provide some implications for school counselors and educators. First of all, the intervention strategies will change depends on the problem. If a student suffers from low hope, individual/group intervention strategies which focus on developing goals, motivating that those goals can be achieved, and teaching specific strategies to reach those goals will be more effective (Shorey, Snyder, Yang, & Lewin, 2003). Regarding our results, school counselors could also help their low hope clients through exploring personal strengths and environmental resources, building up their self-esteems and teaching problem solving skills. Apart from the risk groups who suffer from low hope in schools, whole school prevention strategies involving other students who are not at risk should be implemented. To encourage and reinforce hopeful thinking among students, social or guidance activities and peer support mechanisms could be applied. Snyder et al. (2000) emphasizes the importance of gaining hope thinking at early ages to maintain it across a lifetime. For this reason, more time needs to be allocated for installation of hope beginning at early ages. Society, parents, school administration, and especially teachers are crucial for the installation of hopeful thinking. Teachers are in daily contact with students and spend much time in their education. On this issue, Snyder et al. (2000) suggest that adults must spend more time on creating school environment which nurturing hopeful thinking. Teachers have a vital role in encouraging students to reach their academic goals and teaching them hopeful thinking through modeling and reinforcement of behaviors (Snyder et al., 2002). Moreover, the investment in reinforcing students' problem solving skills, academic self-efficacy belief, and hopeful thinking will create a synergy and at the end they will positively contribute to the well being of students.

There were several limitations of the present study. First, the generalizability of the research findings was limited to those students who have similar characteristics to the research participants. Second, the data collected from self-reported questionnaires that influenced by the understanding and honesty of the participants. Last, this is a cross-sectional study, which hinders drawing causal inferences.

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