Examination of the Relationship between Self-Efficacy Levels of High School Students and Problem-solving Skills and Perceived Social Support

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Abstract

This study examined the relationship between high school students' self-efficacy levels, problem-solving skills, and perceived social support. A total of 199 high school students, 152 women, and 47 men, participated in the study. Data were collected with the Self-Efficacy Beliefs Assessment Scale, the Problem Solving Skills Inventory, and the Multidimensional Scale of Perceived Social Support. While correlation analysis was performed to determine the relationship between variables in the study, regression analysis was performed to determine whether social support and problem-solving skills predicted self-efficacy levels. In this context, first of all, the data were examined in terms of regression assumptions and it was seen that the data were suitable for regression analysis. Besides, whether the level of self-efficacy differed remarkably according to gender was examined with the independent sample t-test. As a result of the research; according to the correlation analysis, it was found that there is a negative relationship between self-efficacy and a hasty approach with one of the problem-solving skills, and a positive relationship with other problem-solving skills. On the other hand, as a result of the analysis, there was a positive relationship between the support of friends and self-efficacy, which is one of the sub-dimensions of perceived social support. Still, there was no significant relationship between family and an important person's social support and self-efficacy. As a consequence of the regression analysis, it was discerned that the perceived social support types of friend social support and problem-solving skills of the hasty and evaluative approach significantly predicted the self-efficacy level of high school students. Yet, other problem-solving skills and social support types did not. Furthermore, as a result of the independent sample t-test, it was perceived that the self-efficacy level did not differ profoundly according to gender and the average self-efficacy levels of the girls were lower than the average of the self-efficacy levels of the boys.

Keywords: Self-efficacy, problem-solving skills, comprehended social support

Introduction

Adolescence designates the transition between childhood and adulthood. It includes many physiological, psychological, social, and cognitive changes by its nature. It is known that adolescent individuals grow up very quickly, experience maturation phases, and can be exposed to academic, personal, and social problems at the same time, along with changes and developments. (Arıkan, et al., 2013)

Adolescent individuals have various sharing with their peers, colleagues, and moreover, romantic partners. It is also necessary for the people in question to develop a sense of control during social sharing. In these responsibilities, they are also expected to cope with various difficulties and situations, which are

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presented in multiple contexts such as school, work and family, where interpersonal interactions take place. All deficiencies experienced in problem solving skills pave the way for violent tendencies (Korkut, 2002; Türküm, 2011), behavioral problems, drug use for adolescents (Uz Baş & Topçu Kabasakal, 2010) and suicidal behaviors (Speckens & Hawton, 2005).

One of the most important factors affecting people's problem-solving abilities is social support resources. Deficiencies and inconsistencies in social support can also affect problem-solving abilities. As a result of previous studies, it was determined that the social support perceived by individuals in different research groups increased their problem solving skill scores.

Social support has an important place in the prevention of physical and mental health, particularly during crisis periods (Saltzman & Holahan, 2002). Adolescence is considered the most difficult period of the life cycle. In that case; especially in this period, social support is thought to be much more important. Social supports are accepted as a health variable that is closely related to the nursing profession. Due to the identification of social support mechanisms, it is very important to be supported and guided when necessary. (Yardimci & Basbakkal, 2009). It is thought that individuals exhibit different behaviors when they encounter situations that cause problems in daily life. In order to overcome similar problems, some people spend less energy and reach a positive result, while others spend more energy and cannot reach the result (Gökbüzoğlu, 2008). While many adolescents can get through this period without problems as adults, adolescents with low self-efficacy beliefs may have gone through a more maladaptive and troublesome period with their negative reactions and behaviors against difficulties. In support of this, it is observed in studies that adolescents with low self-efficacy tend to develop negative behaviors more (Kocaoğlu, 2013; Usluca, 2019). When a literature review on problem-solving skills is made, Korkut (2002) states that problem-solving skills are to develop a new method rather than the rules applied to correct a problem. Altun (2000) explains it as being able to make decisions in undecided situations.

Feyzioğlu (2008) concluded in his study that individuals with high problem-solving skills adapt more easily to their environment. In this context, it can be contemplated that it would be beneficial for all individuals to learn to solve problems in terms of social development and adaptation. While Barker (2003) defines social support as relationships that cater to the needs of people living in the community (Cited in Ege, 2018), Karadağ (2007) describes it as a 'surmise' that social support is a general belief indicating that the individual feels essential, valued and satisfied in their existing relationships.

Sarason et al. (1990) define perceived social support as a 'feeling of acceptance' beyond being a cognition (Cited in Turgut, 2015). According to Arslan (2009), perceived social support is the belief that helping behaviors will emerge when needed. Furthermore, appreciating the successful behaviors of the individual in the development of self-efficacy belief and supporting it on this basis perform a crucial role in the transition to adulthood (Usluca, 2019). In this context, it can be thought that individuals feeling the support of their close environment and whose positive behaviors are reinforced will have a high self-efficacy belief. Therefore, in this study, the relationship between social support and self-efficacy was examined by experts. When we look at the problem solving approach, it emerges as a cognitive process in which knowledge, skills and individual experiences are directed to identify problems, find solutions and resolve conflicts effectively. (Wang & Chiew, 2010). Udeani and Adeyemo (2011) revealed that the discovery of curiosity about how to solve any problem is a cognitive dimension that plays a vital role in problem solving processes.

Problem solving skills are required in order to enable the personnel employed in the workplace to cope with the bullying and innovations they experience. All of these challenges also require them to be professional content masters and skilled problem solvers. (Ozrecberoglu & Caganaga, 2018).

Method

This research was carried out by the relational screening method, which is one of the descriptive approaches.

Study Group

Within the scope of the purpose of the research, the study group consists of 199 students, 152 women, and 47 men, who attend Science High Schools, Anatolian High Schools, and Vocational High Schools in the 2020-2021 academic year.

Scales

Self-Efficacy Beliefs Assessment Scale (SES).

It was prepared by Misirli Tasdemir (2003) to determine the self-efficacy beliefs of the participants. The scale consists of 4 items. It is a 7-point Likert-type scale ranging from I strongly agree (1) to I strongly disagree (7). High scores obtained from the scale indicate high self-efficacy beliefs. The reliability coefficient of the scale was found to be .71. In order to look at the distinctiveness of the items in the scale, the discrimination scores were calculated by looking at the item total analysis, and then the Cronbach alpha internal consistency coefficient was calculated for the reliability of the scale. In the exploratory factor analysis, the acceptance level for factor loading values was determined as 0.32 in the literature.

Problem Solving Skills Inventory (PSI).

This inventory developed by Petersen and Heppner (1982) adapted into Turkish by Şahin et al. (1993), is used to evaluate how individuals approach problems and how they perceive themselves in terms of problem-solving skills. There are 35 items on the 6-point Likert-type scale. It was adapted into Turkish by Taylan (1990) and measures the individual's perception of problem-solving skills. The 35-item inventory, which can be applied to adolescents and adults, is a Likert-type scale scored between 1 and 6. The Cronbach Alpha internal consistency coefficient obtained for the whole scale by the researchers who developed the inventory was found to be 0.90. When calculating the score, it can be uttered that the problem-solving skill is high when the score is between 32 and 80, and this skill is low when the score is between 81 and 192. As a result of the factor analysis, the scale 'Hasty approach' (Items 13,14,15,17,21,25,26,30,32), 'Thinking approach' (Items 18,20,31,33,35), 'Avoidant approach' (Items 1,2,3,4), 'Evaluative approach' (Items 6,7,8), 'Self-confident approach' (Items 5,23,24,27,28,34) and It has been observed that it consists of 6 factors, namely 'planned approach' (Items 10,12,16,19) (Mısırlı Taşdemir, 2003). Moreover, the reliability coefficient of the scale was found to be .88 in the same study.

Multidimensional Scale of Perceived Social Support (MSPSS).

Developed by Zimet et al. (1988); This inventory, adapted into Turkish by Eker and Arkar (1995), aims to find out the source of social support. The scale consists of 12 items and 3 sub-dimensions, and each dimension includes 4 items. It is a 7-point Likert-type scale ranging from absolutely no (1) to absolutely

yes (7). The total score is acquired by summing the scores of all the items on the scale (Arslantürk et al., 2020). An increase in the total score obtained from the scale may indicate an increase in social support as well. In the study conducted by Eker et al. (2001), the reliability coefficient of the scale was found to be .89

Data Analysis

Statistics Package Program for Social Sciences (SPSS Statistics 22) program was used to analyze the data obtained within the scope of the research. In the study, the relationship between the variables was examined with correlation analysis. Considering the results of the correlation analysis, regression analysis was also conducted to determine whether social support types and problem-solving skills predicted self-efficacy. Eventually, a t-test was implemented to specify whether the self-efficacy level differed significantly according to gender.

Findings

The results of the correlation analyses performed to detect the relationship between the variables of the study are given in Table 1.

Table 1

Correlation Analysis and Descriptive Statistics Results

	1									
Self-efficacy	1									
Hasty Approach	-.151*	1								
Thinking Approach	.167*	.218**	1							
Avoidant approach	.181*	.342**	.437**	1						
Evaluative Approach	.278**	.032	.559**	.267**	1					
Confident Approach	.291**	.109	.634**	.418**	.462**	1				
Planned Approach	.274**	-.053	.662**	.347**	.492**	.701**	1			
Social Support From Family	.120	-.050	.126	.123	.073	.160*	.192**	1		
Social Support From a Friend	.157*	-.064	.094	.074	.096	.003	.054	.345**	1	
Social Support From an Exclusive Person	.117	-.094	.015	.084	.070	.113	.112	.203**	.230**	1
$\bar{x}$	20.00	33.28	21.73	17.30	13.40	25.76	17.16	20.13	21.39	14.19
SS	3.20	5.27	4.82	3.98	3.26	.66	3.81	6.90	6.52	8.85

* $p< 0.05$, ** $p< 0.01$

When Table 1 is examined, it is obviously seen that there is a negative relationship between self-efficacy belief and a hasty approach. (r= -.151). Along with that the self-efficacy significantly related to thinking approach (r= .167), avoidant approach (r= .181), evaluative approach (r= .278), self-confident approach (r= .291), planned approach (r= .274), and social support from a friend (r= .157), while the self-efficacy has no significantly relationship with social support from family (r= .120) and social support from an exclusive person (r= .117). No relationship was found.

In line with the information obtained from the study, regression analysis was executed on whether the participants' problem-solving skills and perceived social support significantly predicted their self-efficacy levels. Before the regression analysis, the suitability of the data for the regression analysis was examined and the results obtained were given in Table 2.

Table 2

Regression Assumptions

Variables	N	Lowest	Highest	Skewness	Frequency	VIF	CI
Self-efficacy	99	11.00	28.00	-.151	.124		1.000
Hasty Approach	99	16.00	46.00	-.329	.259	1.270	11.096
Thinking Approach	99	8.00	30.00	-.467	-.252	2.469	14.285
Avoidant Approach	99	6.00	24.00	-.543	-.146	1.420	15.878
Evaluative Approach	99	3.00	18.00	-.758	.328	1.532	19.905
Self-Confident Approach	99	9.00	36.00	-.504	.060	2.291	21.916
Planned Approach	99	4.00	24.00	-.426	-.123	2.587	28.932
Social Support From a Friend	99	4.00	28.00	-.957	.019	1.000	6.724

Table 3

Results of Regression Analysis

Predictor Variable	Predicted Variables	*B*	*SH*	*β*	*t*	*p*	R^2
	(Constant)	17.434	1.748		9.972	.000	
	Hasty Approach	-.120	.045	-.197	-2.647	.01	
	Thinking Approach	-.089	.069	-.134	-1.294	.19	
Self-efficacy	Avoidant Approach	.119	.063	.148	1.885	.06	.164
	Evaluative Approach	.191	.080	.195	2.388	.02	
	Self-Confident Approach	.113	.056	.201	2.011	.05	
	Planned Approach	.054	.089	.065	.609	.54	

When Table 3 is examined, it is seen that the hasty approach (β= -.197, p= .01) dramatically predicts the level of self-efficacy. Besides, it was seen that the evaluative approach variable (β= .195, p= .02) predicted the level of self-efficacy statistically at a significant level. In addition, when Table 3 is examined, it is observed that other problem-solving skills do not predict self-efficacy.

In the study, taking into account the results of the correlation analysis, it was examined whether the self-efficacy level of high school students was predicted by the sub-dimensions of social support (family, friends, and a crucial person). In the regression analysis conducted, as a result of the correlation analysis, it was examined whether only friend social support predicted self-efficacy in high school students since the types of social support received from family and an exclusive person were not related to self-efficacy. The results of the regression analysis are presented in Table 4.

Table 4

Results of Regression Analysis

Predicted Variable	Predictor Variable	*B*	*SH*	*β*	*t*	*p*	R^2
Self-efficacy	(Constant)	18.354	.772		23.778	.000	.025
	Social Support From a Friend	.077	.035	.157	2.228	.02	

When Table 4 is examined, it is noticed that friend social support (β= .157, p= .02) immensely predicts the level of self-efficacy.

Indications on Whether Self-Efficacy Level Differs by Gender

In the study, a t-test was applied to determine whether the self-efficacy level differed outstandingly according to gender, and the findings obtained after the analysis was given in Table 5.

Table 5

Verity on Whether Self-Efficacy Levels Differ by Gender

	Gender	N	x̄	Levene's test			Sd	*p*	95% Reliance Gap	
				F	*p*	*t*			Low	High
Authenticity	Girl	152	19.93	.026	.872	-.521	197	.603	-1.33387	.77676
	Boy	47	20.21							

When Table 5 is examined, it has been seen that self-efficacy in high school students statistically does not differ notably according to gender (p= .60). However; the average self-efficacy level of girls is lower than the average boys' self-efficacy level (male $\bar{X}$= 20.21, female $\bar{X}$= 19.93).

Discussion

This study was carried out in order to clarify the relationships between high school students' perceived social supports, their problem-solving abilities and their beliefs about self-efficacy. In the study, it was noted that the hasty approach and evaluative approach from the problem-solving methods significantly predicted the self-efficacy level of high school students, but other problem-solving skills did not. Within the scope of our study, it was observed that there was an adverse relationship between students' self-efficacy beliefs and a hasty approach.

In this context, in the study conducted by Karabulut and Kuru (2009), as a similar result; In an analysis study conducted with physical education teacher candidates, it was determined that they exhibited a more hasty approach to problems. There is a significant and positive relationship between the frequency of perceived social support and problem solving abilities. In cooperation with guidance and psychological counseling services, social support resources can be activated by increasing the social support cases of adolescents to an extent that can be evaluated and when necessary; thus helping adolescents cope with these problems. The incoming social support of adolescents is particularly important during adolescence; for this reason, social activities that will increase peer relations should be developed. Educational programs are provided for families and teachers within the scope of physical, social, and psychological changes that occur during adolescence and support for adolescents. There is a significant positive relationship between students' self-efficacy belief and thinking approach, avoidant approach, evaluative approach, self-confident approach, planned approach, and social support from a friend.

In addition, it was observed that there was no statistically significant relationship between students' self-efficacy beliefs and the social support they received from their families and the social support they received from a private individual. In our study, it was seen that friend social support significantly predicted self-efficacy level.

It has been determined that problem-solving skills rise with the increase in social support received from family and friends, and the problem-solving skills of students with high self-regard also increase. In our study, it was found that the self-efficacy level of high school students statistically did not differ profoundly according to gender, but the average self-efficacy level of girls was lower than the average self-efficacy level of boys. These results of the study differ from the research in the literature.

Since some studies take place in the literature, it was seen that there was a notable difference in the self-efficacy levels of the students according to gender (Bandura & Schunk, 1981; Jones & Wheatley, 1990; Cantrell et al., 2003; Morgil et al., 2004; Karagöz, 2005; Babaoğlan & Korkut, 2010; Britner & Pajares, 2006; Ekici, 2006). Some studies on the gender variable have demonstrated that female students have higher levels of self-efficacy (Evans & Tribble, 1986; Romi & Leyser, 2006; Cheung, 2008) while some studies; it has shown that male students have more advanced levels of self-efficacy (Cantrell et al., 2003). Broadly, if suggestions can be developed that the problem-solving approaches used as a result of the research increase the self-efficacy levels or vice versa and the self-efficacy levels increase the use of several problem-solving approaches; Steps can be taken to provide instructional programs such as courses, seminars, and activities that improve self-efficacy levels with problem-solving approaches to students. From this point of view, deficiencies can be identified by determining the relationship between the self-efficacy levels of high school students and the level of using problem-solving approaches and analyzing the variables that affect them. With the efforts to eliminate them; It is expected that crucial contributions will be made to raising qualified individuals who believe in themselves and can solve the problems they face in the best way.

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