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Research Article

The mediating role of time attitude in the relationship between self-esteem and resilience in high school students

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The aim of this research was to investigate the mediating role of time attitudes in the relationship between self-esteem and resilience in high school students. High school students' self-esteem, time attitude, and resilience have been researched comparatively. The research was carried out with a quantitative research design and survey method. Participants, who were selected using a convenience sampling method, were high school students. The 1,932 participants consisted of students in the following grade distribution: 793 ninth grade (248 male, 545 female); 365 tenth grade (78 male, 257 female); 350 eleventh grade (90 male, 260 female); and 434 twelfth grade (130 male, 324 female). Participants were selected from secondary education institutions in Sakarya and Kocaeli during COVID-19 from January to May 2021. Data were collected using tools such as the *Two Factored Self-Esteem Scale, Adolescent Time Attitude Scale,* and *Ego Resilience Scale*. The data was analyzed with correlation analysis and regression-based mediation analysis to investigate the relationship between self-esteem, time attitude and resilience. The SPSS 22 package program was used to analyze the data. After analyzing the data, it has been concluded that the time attitude in adolescents indeed has a mediating role in the relationship between self-esteem and resilience. The results of the research will make important contributions to the related literature.

Keywords: Resilience; Self-esteem; Time attitude; Mediation; Adolescence

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1. Introduction

Events that negatively affect social life and daily life have various effects on people's bio-psychosocial well-being. The COVID-19 pandemic (World Health Organization [WHO], 2020) can be considered a negative event that had and continues to have, devastating effects worldwide. COVID-19 has been declared a pandemic (WHO, 2020) due to its destructive impact on a variety of aspects such as healthcare, social life, education, and human psychology.

The call to *stay home* in the context of precautions taken against the COVID-19 pandemic — asking people not to leave their houses — has been challenging for adolescents since it is known that negative physical and psychological effects accrue when children and adolescents are

removed from their school environments and they have fewer opportunities to socialize and interact with their peers. Fear of getting sick, being restricted, being isolated from peers, and having limited personal space at home negatively affect the mental health of children and adolescents (Brooks et al., 2020). On the other hand (considered within the scope of the pandemic), experiencing those feelings of anxiety and worry provides motivation for survival, and those are functional emotions in terms of leading an individual to take precautions (Hatun et al., 2020). Indeed, some theoretical perspectives have supported these ideas by means of scientific investigation.

1.1. Underpinning Theory

Generally speaking, "time" is a crucial concept for all humans, yet the perception of it differs among individuals — both positively and negatively. Alansari et al. (2013) explained that the "time attitudes" concept consists of cognitions about different time periods — past, present, or future — that are typical of a particular valence (i.e., positive or negative) and belong to the group of personality variables such as self-efficacy that are related to developmental outcomes. In this paper, we examined the relationship between self-esteem, time attitude, and resilience in adolescents living in the COVID-19 atmosphere. Although the term "time" has been addressed in the literature in different forms, Zimbardo and Boyd (1999) used the term "time attitude" with other psychological variables. Zimbardo et al. (1997) highlighted that a balanced time perspective including the past, present, and future serves a vital role in some psychological processes, such as behavior and cognition. Indeed, people's perceptions of time can alter their psychological resiliency in several situations.

In addition, while resilience has a negative relationship with time attitude regarding the perception of negative past time (Ge et al., 2020), it has a positive relationship with the time attitude toward the perception of future time (O'Neill et al., 2020) and resilience variables (Zimbardo et al., 1997). In this sense, the concept of perception has a crucial role in its relationship with other variables. Beck's cognitive triad theory, which addresses beliefs about self, future, and environment, can explain the perception term with dysfunctional beliefs (Beck, 1993). If a person has a negative belief about these three concepts, they may develop negative symptoms related to self, environment, and future. In this context, beliefs about future time can be associated with the time attitude toward the perception of future time. In most cases, researchers have focused on attitudes toward the future based on the assumption that expectations for a positive future will lead to increased efforts in the present, whereas expectations for a negative future will lead to decreased efforts in the present (Alansari et al., 2013). Consequently, one's perception of time attitude can be related to beliefs about future time. From this perspective, "hope" is related to the attitude toward time. Fine (1986) found a relationship between time achievement and the future in that there is a difference in the levels of hope demonstrated by students who are graduates versus those who drop out of school. Therefore, it can interfere with that academic achievement associated with the perception of time.

Beck's theory states that an individual can develop depressive symptoms if there are some negativities in these three cognitive areas. Therefore, when compared with Beck's theory, the perception of future time has a relationship with an individual's mental health. Additionally, the term "resilience" can be related to the perception of future time in Beck's theory. However, research findings have a similar inference to Beck's theory in some ways. Ultimately, resilient people exhibit a positive attitude about future time. Taking the findings into consideration, it can be inferred that adolescents with a positive attitude toward time tend to have a higher quality of life because of their positive expectations of the future. In addition to Beck's and other researchers' theories, the hopelessness theory of depression (Abramson et al., 1989) provides a theoretical framework for explaining depression through the "hopelessness" construct and the existence of low self-esteem in adolescents. In this context, hopelessness in adolescents can be addressed with self-esteem, resilience, and time-attitude variables. Indeed, authorities in the fields of psychology

and other social sciences have confirmed these constructs. For example, Wani (2017) found a significant positive correlation between three associated variables: optimism, happiness, and self-esteem. In the same research, self-esteem was strongly related to hopelessness and depression. According to these theories, time attitude can be related to self-esteem and resilience in some capacity.

1.2. Resilience

Humans have a strong defensive mechanism that helps them resist and survive negative situations in their lives. Originally, the term "resilience" was defined in physics and mathematical sciences as the capacity of a material or a system to return to equilibrium after a displacement (Norris et al., 2007). In the field of psychology, the notion of resilience is variously defined as moving away from stress (Smith et al., 2010); an individual's ability to adapt to changing situations (Bonanno, 2008); and the ability to overcome adverse circumstances and adapt to new situations (Doğan, 2015). Supporting all these definitions, Fletcher and Sarkar (2013) discussed the term "resilience" in terms of two basic concepts: distressing process and positive adaptation. Consequently, it can be concluded that individuals who show a positive adaptation in the face of troubling events are more optimistic (Smith et al., 2010) and more resilient.

Some research has demonstrated an association between resilience and well-being (Gunty, 2020), body image (Aboodya et al., 2020), and level of income (Shigemoto, 2020). Interestingly, Aboodya et al. (2020) found a moderately negative correlation between body image and resilience. Therefore, it can be inferred that individuals who do not have body image issues may be more psychologically resilient. That is, both variables are related to each other in the research. In addition, according to a study conducted during the COVID-19 pandemic, individuals with average resilience exercise more, have more social support, sleep better, and tend to worship more than those with lower levels of resilience (Kilgor et al., 2020). This is also a reason to select these variables for the current study, which are associated with each other in the research. Moreover, research indicates that the vast majority of individuals who experience loss and violent or life-threatening events do not exhibit chronic symptom profiles, and many, if not most, show the type of healthy functioning that suggests a resilience trajectory (Bonanno, 2008). Thus, it can be concluded that resilient people can manage the negative circumstances they face in their lives.

Another concept, self-esteem, has been discussed in a study related to resilience. Yörük (2019) put forward that the resilience of students can be affected by their self-esteem. The notion of self-esteem is a complex, organized, and dynamic system of beliefs, attitudes, and opinions that each person has about the truth of their existence. Self-esteem at the same time focuses on emotions of personal worthiness and satisfaction with one's self (Kaya & Saçkes, 2015). Self-esteem can be evaluated as a positive or a negative approach directed to the essence of the individual, while "ego" involves a concept about which other people can express their opinions. This is also the reason for the selection of self-esteem and resilience as variables in the current study.

1.3. Relationship between Self-esteem, Time Attitude, and Resilience

Self-esteem and resilience have been associated with additional psychological concepts. Individuals with high levels of self-esteem and resilience are less affected by behavioral and emotional problems (Arslan, 2016), depression, anxiety, somatic symptoms (Ran et al., 2020), and loneliness (Güloğlu & Karaırmak, 2010). Self-esteem is one of the most important concepts theoretically researched and related to other psychological variables such as loneliness and time attitudes for young people during the developmental period. According to research by Ruchkin et al. (2004), low self-esteem, negative expectations about the future, and loneliness have been involved in explanations of depression, suicidal behavior, substance abuse, sociopathology, delinquent behaviors, and other concerns. Research by Vinas et al. (2017) suggested that hopelessness and self-esteem are significantly correlated with each other and that, taken together, both serve as moderators of suicidal behavior (Fanaj et al., 2015).

Another variable that is related to self-esteem — loneliness — has a negative relationship with self-esteem and resilience, yet a moderately significant association has been found between them (Güloğlu & Karaırmak, 2010). Furthermore, there is a relationship between individuals who have a low level of self-esteem and individuals who feel lonely (Al Khatib, 2012). In this context, lonely people can be encouraged to socialize in order to increase their levels of self-esteem. Moreover, self-esteem has a relationship with leisure activities such as engaging in sports. Research by Carew-Reid et al. (1994) showed that physical/leisure activities help the ego by providing positive role models in developing self-esteem, encouraging teamwork and social teaching skills, promoting self-confidence, and responding to the sense of belonging. Improving some characteristic abilities such as competence, confidence, character, connection, and caring and compassion from the positive youth development approach known as the 5C model makes crucial contributions to individuals, families, and society by developing positive behaviors and decreasing levels of risk behaviors (Aykara & Albayrak, 2016). From all these approaches, it can be concluded that self-esteem in youth is related to this type of beneficial leisure activity.

1.4. Mediating Role of Time Attitude and Hypotheses

Researchers have investigated the concept of time attitude using different variables. Alansari et al. (2013) drew attention to this concept that much of the educational research in this area has been conducted in the United States and has focused on variables related to the future, including hope (Worrell & Hale, 2001), optimism (Matthew, 2011), goal orientation (Pintrich, 2000), perceived life chances (Worrell et al., 1999), possible selves (Leondari et al., 2009), and future orientation (Seginer, 2008). The current research was conducted in light of three different variables: resilience, self-esteem, and time attitude. First, three variables were explained separately, and then the variables were associated with each other in a positive or negative way. The main focus of the research was to investigate the mediating role of the time-attitude variable on the resilience and self-esteem variables. The hypothesis of the research is that time attitude has an impact on self-esteem and resilience. In other words, an adolescent's resilience and self-esteem can be affected by whether time perception is positive or negative according to the past, present, and future. This research highlights adolescents' perceptions of time in light of self-esteem and resilience, especially during the COVID-19 environment.

In this context, determining which variables are vital to the development and strengthening of resilience — and important for the mental health of adolescents and others — is crucial in order for studies to be conducted with the aim of guiding clinical prevention and intervention. In this scientific research, variables of self-esteem and time attitude, which are affinitive notions with resilience, were investigated in a mediation model to determine whether the concept of time attitude had a mediating role in the relationship between self-esteem and resilience.

Despite the demonstrated relationship between self-esteem and resilience (Yörük, 2019) as well as other psychological notions such as well-being (Gunty, 2020), body image (Aboodya et al., 2020), and level of income (Shigemoto, 2020), the mediating role of time attitude has not sufficiently been considered between resilience and self-esteem. The present study has revealed that time attitude is associated with both resilience and self-esteem. This finding can be supported by other studies in the literature. In order to illustrate this argument; it can be said that time attitude has a relationship with resilience (Zimbardo et al., 1997) and self-esteem (Camadan & Nur Kıraç, 2020). In this study, which considered the COVID-19 setting, the adolescents' time attitude had a mediating role on self-esteem and resilience. Consequently, we may conclude that adolescents' time attitudes and perspectives are associated with their self-esteem and resilience in the COVID-19 setting.

Adolescence is a critical developmental stage in the life of the individual in terms of perception and coping with life's difficulties. Because the COVID-19 process has restricted adolescents to closed areas such as home, time attitude is naturally affected by this situation in the adolescent

population. Therefore, time attitude may have a mediating effect on the relationship between resilience and self-esteem.

1.5. Proposed Research Model

People with positive mental health have a certain level of resistance against all kinds of problems in their lives. The WHO (2020) has explained the notion of "healthiness" as not merely the absence of illness, but the complete well-being of a human in physical, spiritual, and social aspects. Time-attitude notions can be related to these aspects of well-being. While the awareness levels of happy individuals are high, their attitudes toward the future can vary (Drake et al., 2008). Mello and Worrel (2006) emphasized that focusing entirely on the future could lead to the neglect of the past and the present, thus creating suffering in various aspects. The time paradox offers new ways of understanding the past, the present, and the future to improve an individual's relationship with time and how they can enrich their life (Zimbardo & Boyd, 2008). Essentially, people do not perceive time in the same way. Time perception can be impacted by both developmental stages and individual differences.

In particular, the face-to-face communication of adolescents who attend high school and who typically highly value friendships and peer environments was interrupted by the measures taken to prevent the spread of the pandemic. To overcome the negative process in a bio-psychosocially healthy way and to continue their regular development, adolescents forced to spend most of their time in their home environments may be affected by variables such as resilience, self-esteem, and time attitude. An investigation of the literature shows that resilience correlates with important variables for mental health such as time attitude (Zimbardo et al., 1997) and self-esteem (Camadan & Nur Kıraç, 2020). People who have a low level of self-esteem also demonstrate a fragile structure in terms of mental health and perception toward future time, especially high school adolescents. Jackman and MacPhee (2015) found a similar result in their research on self-esteem and future orientation and later adolescent risk behaviors. According to these studies, adolescents' risk behaviors are negatively impacted by low self-esteem and negative future orientation. Although there are studies examining the relationships between these variables, there is no concrete research in which these variables are tested in a model or in terms of their mediating effects on one another.

In the current research, we examined three major questions. The first was whether a relationship exists between time attitude, self-esteem, and resilience. Second, we examined whether self-esteem predicts resilience. Third, we investigated the mediating role of time attitude on the relationship between self-esteem and resilience. All three variables were addressed both in terms of their association and their support from relevant theories.

2. Method

In this study, a quantitative research design and survey method were used. This model is generally used in studies aiming to determine the existence of a co-change between two or more variables and/or the degree of this change (Büyüköztürk et al., 2014).

2.1. Participants

The target population was chosen as students studying at high schools located in the provinces of Sakarya and Kocaeli located in northern Turkey since the researchers worked in these cities. It was aimed to contribute to the validity of the research on adolescents by including those located in different regions as much as possible within the scope of the research. The convenience sampling method was used. This sampling method provides the researcher the advantage of ready access to the target population, saving time and cost (Balcı, 2013). The 1,932 adolescent participants consisted of students in the following grade distributions: 793 ninth grade (248 male, 545 female); 365 tenth grade (78 male, 257 female); 350 eleventh grade (90 male, 260 female); and 434 twelfth grade (130 male, 324 female). The students were sampled from secondary education institutions in the provinces of Sakarya and Kocaeli during the 2020–2021 academic year. The students' ages ranged between 14 and 18 years old (M= 15.65, SD= 1.32). In addition, 1.1% (21) of the students

studied at Science and Technology High School; 2.7% (52) at Social Sciences High School; 40.2% (777) at Native Anatolian High School; 37.0% (714) at Vocational and Technical High School; and 19.0% (368) at Anatolian Imam Hatip High School. Representing a mixture of middle- to upper-middle-class families, the group of participants was ethnically homogeneous and consisted entirely of Turkish students.

2.2. Data Collection Tools

2.2.1. Resilience scale

The Resilience Scale was developed by Block and Kremen (1996) to measure resilience; it was adapted to Turkish culture by Karaırmak (2007). The scale, for which the total score is recommended to be used instead of the subscale scores, is a 4-point Likert-type and consists of 14 items. High scores on the scale indicate a high level of resilience. A three-factor structure is proposed that explains 47% of the variance: personal strengths for recovery, positive evaluations toward self, and openness to innovations. Confirmatory factor analysis also supported the three sub-dimensions in the explanatory factor analysis (RMSEA= .048; SRMR= .064; GFI= .98; AGFI= .97; CFI= .94). The internal consistency coefficient of the scale was tested using Cronbach's alpha and test–retest methods. The Cronbach's alpha value obtained from the scale items was .80, and the test–retest internal reliability coefficient of three weeks was reported as .76 (Karaırmak, 2007). In this study, Cronbach's alpha value was measured as .80.

2.2.2. Self-esteem scale

The Self-Liking/Self-Competence Scale was developed by Tafarodi and Swan (2001) and adapted to Turkish culture by Doğan (2011). In the study item analysis, internal consistency, test–retest, confirmatory factor analysis, and criterion-related validity methods were used to examine the psychometric properties of the scale. The two-factor structure in the original form of the scale was confirmed by the confirmatory factor analysis results (AGFI= .91; GFI= .94; NFI= .95; RFI= .94; CFI= .97; RMR= .06; IFI= .97; RMSEA= .08). The Cronbach's alpha internal consistency coefficient was .83 for the self-liking sub-dimension and .74 for the self-competence sub-dimension; the test–retest reliability coefficient was determined as .72 for both factors. The 5-point Likert-type scale consists of 16 items. In this study, Cronbach's alpha values were measured as .88 for self-liking and .82 for self-competence.

2.2.3. Adolescent time attitude scale

Developed by Worrell et al. (2011), this scale was adapted to Turkish culture by Çelik et al. (2017). The five-point Likert-type scale consists of 30 items. Confirmatory factor analysis was performed to determine the structural validity of the scale. The internal consistency method was used for the reliability analysis. The confirmatory factor analysis revealed a good fit to the data (χ^2 = 724.42; DF= 390; RMSEA= .045; GFI= .90; CFI= .91; IFI= .91; NNFI= .90; and SRMR= .04). The internal consistency coefficients of the six subscales were .67 for past positive, .72 for past negative, .81 for present positive, .72 for present negative, .77 for future positive, and .63 for future negative. The result of the item analysis showed that corrected item-total correlations ranged from .29 to .67 and were statistically significant at the $p < .001$ level. In this study, Cronbach's alpha values were measured as .87 for Past negative, .80 for past positive, .87 for present negative, .90 for present positive, .66 for future negative, and .66 for future positive.

2.3. Data Collection Process

The data were collected by the researchers by sharing the survey link with the students on online form. Information such as instructions on how to use the instruments and the purpose and content of the research were included in the online forms, and the participants were informed that the data would be stored and used only for scientific purposes. The participants were informed that there was no risk or cost to participate in the research, that their names would not be included in the

survey, and that their participation in the study was voluntary. The researchers' contact information was also provided, and participants were told that they could contact the researchers with any questions or to provide feedback about filling out the questionnaire or participating in this study. Finally, a checkbox was opened for voluntary participation and, if ticked, access to the survey was provided.

2.4. Data Analysis

The SPSS 22 package program was used for statistical analysis. The data set was reviewed in terms of extreme values, and 43 answer forms with extreme values were excluded from the data set. A total of 1,889 of the 1,932 participants reached the last stage and were evaluated. After the analysis of extreme values, it was reviewed whether the distribution was suitable for parametric tests. The distributions were re-examined using descriptive methods in which the values of skewness, kurtosis, mean, and standard deviation were handled together with the histogram graph (Abbott, 2011). The skewness values of the variables were in the range of $-.04$ to .75, the kurtosis values were between $-.03$ and $-.64$, and the values between -1 and +1 showed that the data was at an acceptable level in terms of normality (Şencan, 2005). The correlation values between resilience and time attitudes varied between .55 and $-.29$, and all the relationships were significant ($p < .05$). The relationships between resilience, self-liking ($r = .51$, $p < .05$), and self-competence ($r = .55$, $p < .05$), which are sub-dimensions of self-esteem, were also found to be significant. Finally, the correlation values between the time attitudes and the sub-dimensions of self-esteem varied between .33 and .64, and all of the relationships were significant ($p < .05$). In line with this finding, it can be said that Hypothesis 1 was confirmed. The obtained correlation values showed that a mediation model can be established with existing variables (Baron & Kenny, 1986). Findings regarding assumptions of normality are shown in Table 1 and Figure 1.

Table 1

*Descriptive statistics and correlations between resilience with self-esteem and time attitudes*

Variable	1	2	3	4	5	6	7	8	9
1. Resilience	–								
2. Self-liking	.51**	–							
3. Self-competence	.55**	.64**	–						
4. Past positive	.41**	.49**	.33**	–					
5. Past negative	−.29**	−.51**	−.34**	−.70**	–				
6. Present positive	.46**	.63**	.50**	.56**	−.47**	–			
7. Present negative	−.38**	−.64**	−.48**	−.52**	.57**	−.84**	–		
8. Future positive	.52**	.44**	.39**	.35**	−.21**	.50**	−.41**	–	
9. Future negative	−.42**	−.47**	−.43**	−.28**	.32**	−.41**	.46**	−.64**	–
Mean	39.28	29.37	25.41	17.69	13.02	17.79	12.95	19.28	11.71
Standard Deviation	6.47	6.84	5.57	4.27	5.33	4.61	4.90	4.64	3.92
Skewness	−.04	−.56	−.03	−.47	.42	−.43	.27	−.75	.34
Kurtosis	−.03	−.08	.17	−.10	−.63	−.23	−.59	.11	−.14

*Note. *$p < .05$, **$p < .01$

After the assumptions of normality, the data set was reviewed in terms of the multicollinearity problem, and regression analysis assumptions were examined. Findings show that the tolerance values of all variables were greater than .10, and VIF values were lower than 10 (Seçer, 2013). Accordingly, it was concluded that the data set is normally distributed and there is no multiple connection problem in the data set.

Regression analysis based on the bootstrap method was conducted in order to test the effect of self-esteem on resilience and whether time attitudes have a mediating role on that effect. In this additional software, which uses the 5000 resample method in regression analysis, path coefficients, standard errors, t and p values, bootstrap confidence intervals of all variables can be calculated

Figure 1
Standard distribution graph created for standardized dependent variable
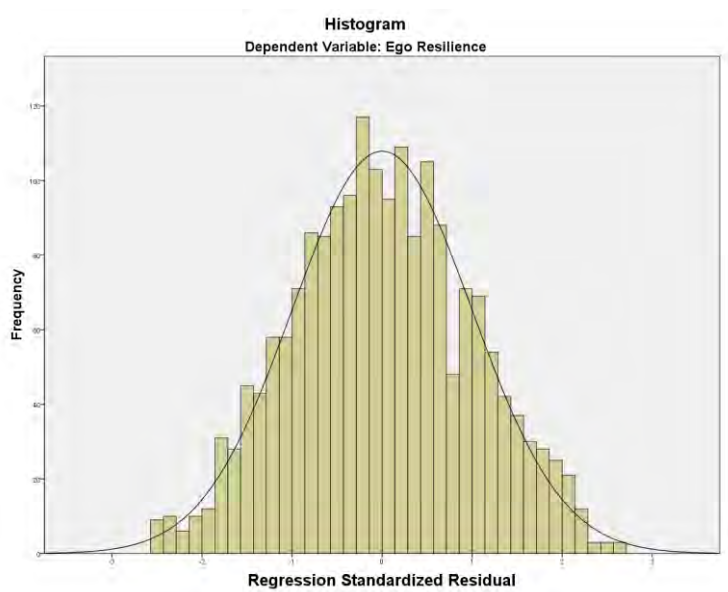
(Hayes, 2013). Mediation is considered to be significant if there are no zeros between the bootstrap lower (BootLLCI) and upper (BootULCI) values at a 95% confidence interval of the mediator variables. In other words, both values are below or above zero (Hayes, 2013; Zhao et al., 2010). The fully standardized effect size of the mediation effect (K^2) is taken into consideration by Preacher and Kelley's (2011) suggestion of "low effect if close to .01, medium effect if close to .09 and high effect if close to .25." Multivariate mediation analyses were performed using Model 4 in the Process macro software. In this study, self-esteem (self-liking and self-competence) was the independent variable, time attitude was the mediator variable, and resilience was the dependent variable. Table 2 contains information about the intermediary models tested.

Self-liking and self-competence were tested with two different models. One of the reasons for this is that these two variables are sub-dimensions of self-esteem, and the correlation between them is high (r =.64). Another reason for using two models in the research is that the mediation analyses are carried out with the Process macro developed by Hayes (2013). This additional software uses simple mediation models. However, multiple mediator models should be used to test two sub-dimensions of the same variable in a single model. For this reason, it was deemed appropriate to test two sub-dimensions with two different models in the study.

3. Findings

Whether self-esteem predicts resilience through time attitudes in high school students was examined with the Process macro developed by Hayes (2013).

3.1. Findings for Model 1

Table 3 shows the results of the regression analysis regarding the Model 1.

Table 3
Regression coefficients, standard errors and significance tests for the regression

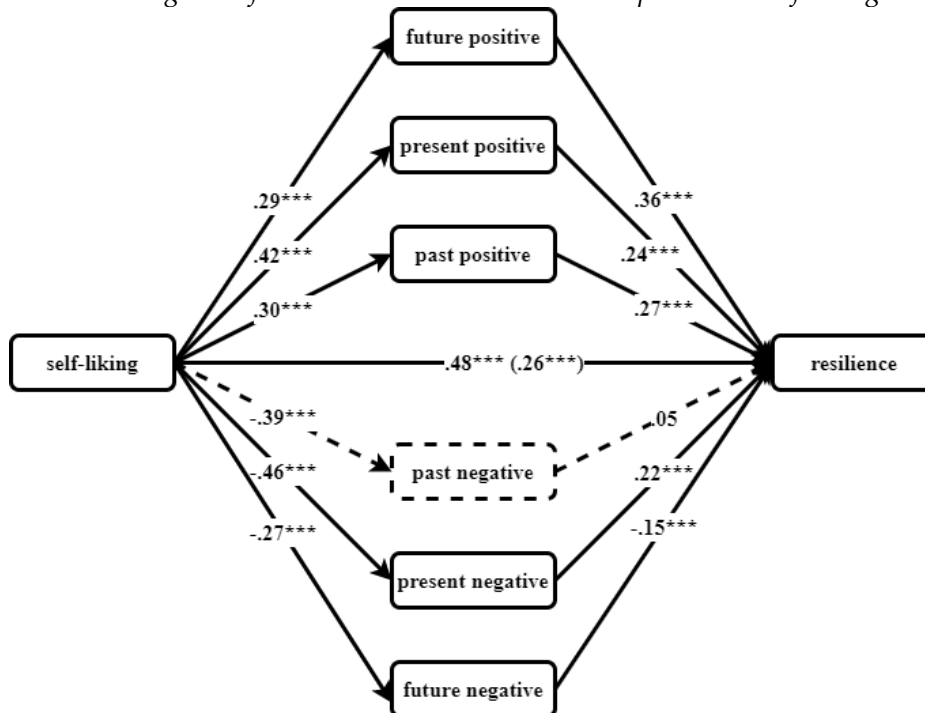| Predictor	Coeff.	SE	p	F	R^2
Constant	25.09	.56	< .001		
Self-liking	.48	.01	< .001	666.47	.26

As seen in Table 3, regression analysis demonstrated that self-liking significantly predicted resilience (Coeff.= .48; *p*< .001). In line with this finding, it can be said that Hypothesis 2 was confirmed. Intermediary Model 1 is shown in Table 4 and Figure 2.

Table 4
The mediating role of time attitudes in the relationship between self-liking and resilience

Model 1	Past Positive (M1)			Past Negative (M2)			Present Positive (M3)			Present Negative (M4)			Future Positive (M5)			Future Negative (M6)			Resilience (Y)		
	β	SE	t	β	SE	t	β	SE	t	β	SE	t	β	SE	t	β	SE	t	β	SE	t
Self-Liking (X)	a .30	.01	24.64	-.39	.01	-25.90	.42	.01	35.74	-.46	.01	-36.41	.29	.01	21.38	-.27	.01	-23.17	c' .26	.02	11.13
M1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	b_1 .27	.04	6.52
M2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	b_2 .05	.03	1.60
M3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	b_3 .24	.05	4.55
M4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	b_4 .22	.04	4.51
M5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	b_5 .36	.03	10.20
M6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	b_6 -.15	.04	-3.65
Constant	i_1 8.63	.37	22.88	24.75	.46	53.23	5.21	.36	14.43	26.47	.38	69.42	10.47	.42	24.77	19.64	.35	55.92	i_2 13.29	1.72	7.68
	R^2= .24, $F_{(1,1887)}$= 607.23, $p<.01$			R^2= .26, $F_{(1,1887)}$= 114.78, $p<.01$			R^2= .40, $F_{(1,887)}$ = 1278.04, $p<.01$			R^2= .41, $F_{(1,1887)}$= 1326.33, $p<.01$			R^2= .19, $F_{(1,1887)}$= 457.18, $p<.01$			R^2= .22, $F_{(1,1887)}$= 536.99, $p<.01$			R^2= .40, $F_{(7,1881)}$= 179.33, $p<.01$		

Bootstrap Results for Indirect Effects		β	Boot SE	BootLLCI	BootULCI
Total Indirect Effects		.21	.02	.17	.25
Indirect Effect	Past Positive	.08	.01	.05	.11
Indirect Effect	Past Negative	-.02	.01	-.05	.00
Indirect Effect	Present Positive	.10	.02	.05	.14
Indirect Effect	Present Negative	-.10	.02	-.14	-.05
Indirect Effect	Future Positive	.11	.01	.08	.13
Indirect Effect	Future Negative	.04	.01	.01	.06

Table 4 includes the results of the regression analysis showing the effect of time attitudes (past positive-M1, past negative-M2, present positive-M3, present negative-M4, future positive-M5, and future negative-M6), which is the mediator variable between self-liking (X) and resilience (Y). Self-liking positively predicted resilience (β= .26; t= 11.13; p< .05) as well as past positive (β= .30; t= 24.64; p< .05), present positive (β= .42; t= 35.74; p< .05), and future positive (β= .29; t= 21.38; p< .05) time attitudes. Also, past negative (β= −.39; t= −25.90; p< .05), present negative (β= −.46; t= −36.41; p< .05), and future negative (β= −.27; t= −23.17; p< .05) time attitudes were negatively predicted by self-liking. On the other hand, past positive (β= .27; t= 6.52; p< .05), present positive (β= .24; t= 4.55; p< .05), future positive (β= .36; t= 10.20; p< .05), and present negative (β= .22; t= 4.51; p< .05) time attitudes positively predicted resilience. In addition, resilience was negatively predicted by future negative (β= −.15; t= −3.65; p< .05) time attitudes. Finally, past negative time attitudes did not predict resilience (β= .05; t= 1.60; p> .05).

When the indirect effects of mediator variables at a 95% confidence interval were examined, Boot values were calculated as $BootLLCI_{M1}$= .05; $BootULCI_{M1}$= .11; $BootLLCI_{M3}$= .05; $BootULCI_{M3}$= .14; $BootLLCI_{M4}$= −.14; $BootULCI_{M4}$= −.05; $BootLLCI_{M5}$= .08; $BootULCI_{M5}$= .13; $BootLLCI_{M6}$= .01; and $BootULCI_{M6}$= .06. Since there was no zero between bootstrap lower (BootLLCI) and upper (BootULCI) values at a 95% confidence interval, time attitudes (except for past negative) have a significant mediating role in this model. When the fully standardized effect size values of the mediation effect are examined, K^2_{M1}= .08; K^2_{M3}= .10; K^2_{M4}= −.10; and K^2_{M5}= .11 have a medium value of mediating effect. It was determined that K^2_{M6}= .04 had a low mediating effect. In line with this finding, it can be said that Hypothesis 3 was confirmed. The diagram of Model 1 is shown in Figure 2.

Figure 2
The mediating role of time attitudes in the relationship between self-liking and resilience (Model 1)

Note. *p< .05, **p< .01, ***p< .001

3.2. Findings for Model 2

Table 5 shows the results of the regression analysis regarding the Model 2.

Table 5
Regression Coefficients, Standard Errors and Significance Tests for the Regression

Predictor	Coeff.	SE	p	F	R^2
Constant	22.95	.58	< .001		
Self-competence	.64	.02	< .001	832.41	.30

As seen in Table 5, regression analysis demonstrated that self-competence significantly predicted resilience (Coeff.= .64; $p<$ .001). In line with this finding, it can be said that Hypothesis 2 was confirmed. Intermediary Model 2 is shown in Table 6 and Figure 3.

Table 6 includes the results of the regression analysis showing the effect of time attitudes (past positive-M1, past negative-M2, present positive-M3, present negative-M4, future positive-M5, and future negative-M6), which is the mediator variable between self-competence (X) and resilience (Y). In addition, self-competence positively predicted resilience ($\beta=$ .42; $t=$ 17.34; $p<$ .05) and past positive ($\beta=$ .26; $t=$ 15.32; $p<$ .05), present positive ($\beta=$ .42; $t=$ 25.60; $p<$ .05), and future positive ($\beta=$ .33; $t=$ 18.38; $p<$ .05) time attitudes. Also, past negative ($\beta=$ −.33; $t=$ −16.07; $p<$ .05), present negative ($\beta=$ −.42; $t=$ −24.05; $p<$ .05), and future negative ($\beta=$ −.30; $t=$ −20.66; $p<$ .05) time attitudes were negatively predicted by self-competence. On the other hand, past positive ($\beta=$ .30; $t=$ 7.60; $p<$ .05), present positive ($\beta=$ .19; $t=$ 3.79; $p<$ .05), future positive ($\beta=$ .35; $t=$ 10.33; $p<$ .05), and present negative ($\beta=$ .17; $t=$ 3.79; $p<$ .05) time attitudes positively predicted resilience. It is also seen, it was seen that resilience negatively by future negative ($\beta=$ −.10; $t=$ −2.63; $p<$ .05) time attitude. Finally, past negative time attitudes did not predict resilience ($\beta=$ .04; $t=$ 1.22; $p>$ .05).

When the indirect effects of mediator variables at a 95% confidence interval were examined, Boot values were calculated as $BootLLCI_{M1}=$ .05; $BootULCI_{M1}=$ .10; $BootLLCI_{M3}=$ .04; $BootULCI_{M3}=$ .12; $BootLLCI_{M4}=$ −.11; $BootULCI_{M4}=$ −.03; $BootLLCI_{M5}=$ .09; $BootULCI_{M5}=$ .14; $BootLLCI_{M6}=$ .00; and $BootULCI_{M6}=$ .05. Since there was no zero between bootstrap lower (BootLLCI) and upper (BootULCI) values at a 95% confidence interval, time attitudes, except for past negative, had a significant mediating role in this model. When the fully standardized effect size values of the mediation effect were examined, $K^2_{M1}=$ .08, $K^2_{M3}=$ .08, $K^2_{M4}=$ −.07, and $K^2_{M5}=$ .11 had a medium value of mediating effect. It was determined that $K^2_{M6}=$ .03 had a low mediating effect. In line with this finding, it can be said that Hypothesis 3 was confirmed. The diagram of Model 2 is shown in Figure 3.

4. Discussion

This study investigated whether there is a relationship between time attitude, self-esteem, and resilience; whether self-esteem predicts resilience; and whether time attitude has a mediating role in the relationship between self-esteem and resilience. This research is a relational study and does not provide information on a cause-and-effect relationship. It has been observed that time structure is related to motivation, self-efficacy, and self-concept in the field of education (Mello, 2008; Nurmi, 1991; Seginer, 2008), and most researchers tend to their future attitudes. In these studies, researchers concluded that having a positive future expectation is related to people's efforts to work in the present. Zimbardo and Boyd (1999) put forward the concept of profile patterns on time attitudes and emphasized the future focus on success, positive past perception on the sense of identity, and present hedonistic focus on the joy of daily life. And they stated that the harmonious working of past, present, and future time perceptions can be effective in realizing people's potential. In this respect, this research is thought to constitute comprehensive research on time attitudes in high school students.

Studies have found a relationship between hope and resilience (Martinek & Hellison, 1997; Smith et al., 2010). Likewise, a relationship has been found between hope and time attitude (Fine, 1986; Vahapoğlu, 2013), and time attitude and hope have been found as important variables for resilience. Similarly, in this study, which supports the theory and previous studies there was a

Table 6
The mediating role of time attitudes in the relationship between self-competence and resilience

Model 2	Past Positive (M1)			Past Negative (M2)			Present Positive (M3)			Present Negative (M4)			Future Positive (M5)			Future Negative (M6)			Resilience (Y)		
	β	SE	t	β	SE	t	β	SE	t	β	SE	t	β	SE	t	β	SE	t	β	SE	t
Self-Competence (X)	a_1 .26	.01	15.62	-.33	.02	-16.07	.42	.01	25.60	-.42	.01	-24.05	.33	.01	18.38	-.30	.01	-20.66	c' .42	.02	17.34
M1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	b_1 .30	.04	7.60
M2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	b_2 .04	.03	1.22
M3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	b_3 .19	.05	3.79
M4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	b_4 .17	.04	3.79
M5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	b_5 .35	.03	10.33
M6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	b_6 -.10	.04	-2.63
Constant	i_1 111.09	.43	25.62	21.47	.53	39.90	7.11	.42	16.64	23.79	.46	51.56	10.81	.45	23.62	19.41	.38	50.92	i_2 11.23	1.62	6.93
	R^2= .11, $F_{(1,1887)}$= 16.21, $p<.01$			R^2= .12, $F_{(1,1887)}$= 258.50, $p<.01$			R^2= .25, $F_{(1,887)}$= 655.36, $p<.01$			R^2= .23, $F_{(1,1887)}$= 578.71, $p<.01$			R^2= .15, $F_{(1,1887)}$= 357.99, $p<.01$			R^2= .18, $F_{(1,1887)}$= 427.00, $p<.01$			R^2= .44, $F_{(7,1881)}$= 218.86, $p<.01$		

Bootstrap Results for Indirect Effects

		β	Boot SE	BootLLCI	BootULCI
Total Indirect Effects		.22	.02	.18	.25
Indirect Effect	.08	.01	.05	.10	.11
Indirect Effect	-.01	.01	-.03	.00	.00
Indirect Effect	.08	.02	.04	.12	.14
Indirect Effect	-.07	.02	-.11	-.03	-.05
Indirect Effect	.11	.01	.09	.14	.13
Indirect Effect	.03	.01	.00	.05	.06

Figure 3
The mediating role of time attitudes in the relationship between self-competence and resilience (Model 2)
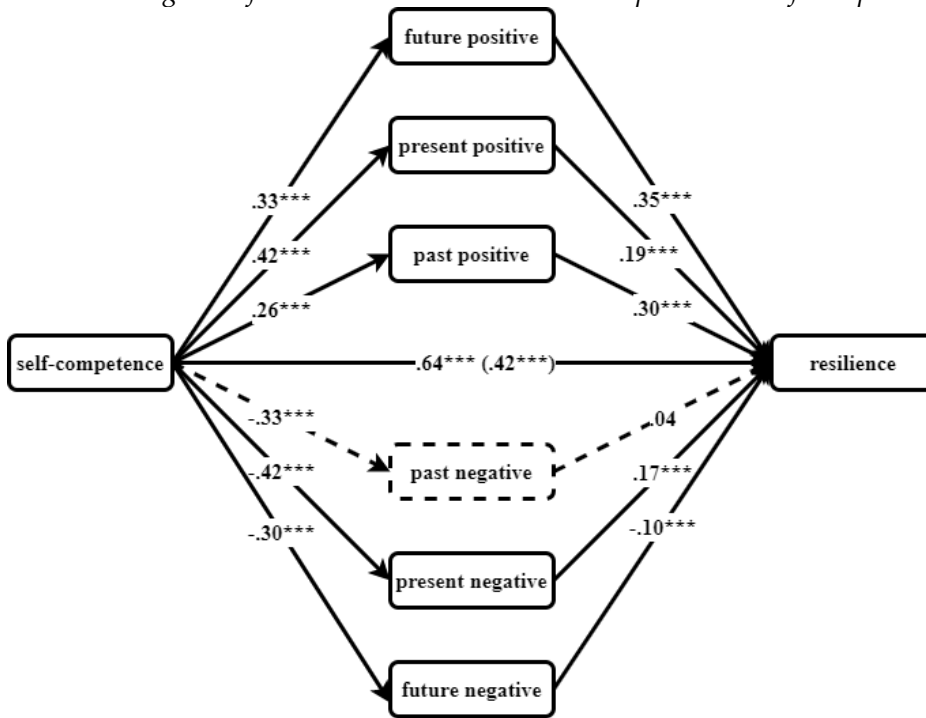
*Note. *p< .05, **p< .01, ***p< .001*

a relationship between time attitude and resilience, and time attitude had a mediating effect on self-esteem and resilience. Individuals with a positive time attitude may have a higher level of hope and a success orientation. Therefore, this conclusion was reached in this study.

The findings show that the role of time attitude is significant in the relationship between the resilience of high school students and their self-esteem. Similar findings to the results of this research can be found in the literature regarding the concepts of resilience and self-esteem (Akça, 2012; Dumont & Provost, 1999; Eryılmaz, 2012; Finn & Rock, 1997; Moran & Eckenrode, 1992) and time attitude and resilience (Knight, 2019). Additional studies have examined the relationship between self-concept and time attitude (Cottle & Klineberg, 1974; Keough et al., 1999; Nurmi, 1989). Examining the literature on the relationship between resilience and time attitude, it is noted that few studies have investigated the direct relationship between these two concepts. Some studies related to the subject have focused on time attitude and subjective well-being (Drake et al., 2008; Eryılmaz, 2011), optimism (Matthew, 2011), quality of life (Moore, 2005), goal orientation (Pintrich, 2000), perceived life chances (Worrell et al., 1999), and mental health (Daukantaite, 2015). It is reported that the relationships between subjective happiness, life satisfaction, and life purpose are more frequent. As a result of these studies, it can be said that there is a relationship between time attitude and an individual's mental health (Daukantaite, 2015).

Time attitude is a flexible concept that includes past negativity and future perspective and is also considered a stable personality disposition (Kairys & Liniauskaite, 2015). Education and development researchers have emphasized that time attitude is an important issue during adolescence (Husman & Lens, 1999; Phalet et al., 2004). Resilient individuals tend to have a flexible perspective in overcoming difficulties and to have hope for the present and the future (Smith et al., 2010).

This study is consistent with the research mentioned, and the reason why time attitude has a mediating role between resilience and self-esteem may be that time attitude explains many of the variances of self-esteem on resilience. In this context, it can be stated that time attitude is a stronger and more effective variable than self-esteem in terms of resilience because when the positive

dimensions of time attitude are considered, the individual with a positive time attitude is consistently focused on their goal, postponing pleasurable immediate experiences (Zimbardo & Boyd, 1999), their problem-solving skills are improved (Boniwell & Zimbardo, 2004), and they are able to exhibit self-control in stressful situations (Wills et al., 2001). Therefore, it can be concluded that it predicts resilience, which refers to the ability to recover from, and cope with, difficult experiences.

Resilience has an important role in adolescence, which is a critical stage for both physical and psychological development. Adolescents who have a high level of resilience suffer less frequently from mental disorders such as anxiety, depression, and suicide, and they cope better with difficult experiences (Pritzker & Minter, 2014). The concept of self-esteem was put forward by Rosenberg (1979) as a person's positive or negative attitude toward themselves. High self-esteem is known to be associated with resilience. It has a protective function that includes a positive attitude in self-evaluation and the ability to maintain a healthy and harmonious development process under varying environmental conditions (Cicchetti & Banny, 2014; Mandleco & Peery, 2000). Self-esteem, which serves a protective function in overcoming difficulties as ego resilience increases in a person, can enable a person to show a strong and resistant stance with a sense of self-love, self-worth, and self-competence. The individual's self in the face of difficulties high esteem, coping with this risk factor will have a positive impact on the process of and it can be said that it will play an important role in its maintenance. On the other hand, time attitude, which is a cognitive and psychological concept, includes the individual's feelings, thoughts, and evaluations about the past, the present, and the future (Andretta, 2010; Worrell et al., 2011). Individuals who have a positive future perspective have characteristics such as managing their attitudes toward behaviors in the past, taking the positive and negative consequences of their behaviors into account, having a low level of excitement-seeking, engaging rarely in risk behavior, showing high academic achievement, and having high socioeconomic status (Stolarski et al., 2011). It can be seen in the literature that individuals who have positive perspectives toward the past, the present, and the future have high levels of happiness (Strack et al., 1985) and high subjective well-being (Mello & Worrell, 2006). Positive perspectives toward the present and the future have been found to be positively associated with academic achievement (Andretta, 2010), emotional intelligence (Stolarski et al., 2011), and procrastination (Ferrari & Diaz-Morales, 2007). In keeping with these features, it is associated with resilience and self-esteem since having a positive present and future time perspective can increase one's recovery power (Hunter, 2001), grant them the ability to overcome adverse living conditions, and allow them to benefit from healthy coping skills when faced with stressful situations (Windle, 2002). It can be concluded that it has a mediating role in the relationship between resilience and self-esteem.

Another result of the study is that a negative past, one of the dimensions of adolescents' time attitude, does not predict resilience. Individuals who tend to evaluate the past negatively are closed to change, insistent on maintaining the current situation even if it is not beneficial, and tend to focus more on negative thoughts (Boniwell & Zimbardo, 2004). Furthermore, with the identity crises of adolescent high school students, childlike attitudes and behaviors are replaced by adult ones and the increase in future productivity gains importance (Coleman, 1988). In this context, high-school-age youth are focusing on their future interests, determining their professional fields, and managing a critical stage of social, professional, personal, and existential structuring of their future lives. It is known that high school students who are preparing to embark on life tend to have positive future expectations (Chardie et al., 2008; Şimşek, 2012), and all of these expectations are factors that vary according to values, family, environment, and culture (Uluçay et al., 2014). Therefore, negative attitudes toward the past may not predict resilience as it is the period in which adolescent individuals, who are in the transition to adulthood, focus on the future design, albeit as a necessity.

5. Conclusion

In this study, it was determined that time attitude had a mediating role in the relationship between resilience and self-esteem. As a result, it is emphasized that time attitude is an important determinant in understanding the psychological and social worlds of adolescents. Beck's theory of perception provides a basis for revealing beliefs about the past, present, and future attitudes of the person. Considering the findings obtained in this study, it is inferred that adolescents who have a positive attitude toward time may have high self-esteem, while adolescents who have a negative attitude toward time may have low self-esteem. In these research findings, which are parallel to Beck's cognitive triad theory, if the individuals have a negative belief, they exhibit negative attitudes toward themselves, both now and in the future. From this point of view, the perception of time plays an important role in the increase in self-esteem of adolescents as their resilience increases. But it should be emphasized that, since the path model of this research was correlational, causality cannot be inferred from the relationship between research variables.

When the results of the study are evaluated as a whole, it can be said that in the relationship between resilience and self-esteem, time attitude is an important variable that reduces the effect of self-esteem on resilience. In other words, time attitude functions as an intermediate mechanism that feeds and strengthens the adolescent's resilience. The relevant literature demonstrates that time attitude (orientation toward the past, present, or future) affects attention, decision, and perception (Lens, 1986; Zimbardo et al., 1997), and is an important determinant in understanding individuals' psychological and social worlds (Holman & Zimbardo, 2008; Lens, 1986). Similarly, studies have shown that individuals with high self-esteem have characteristics such as self-confidence, optimism, a tendency to focus on their strengths, and perseverance through difficulties (Uyanık Balat & Akman, 2004).

However, research has shown that adolescents focus on individual dynamics in order to be able to perceive their situation in a realistic way, to react to situations that need to be changed, and to control their future by considering the outcomes and consequences of their behavior and creating a functional space. According to these results, the adolescent's tendency to evaluate the present and the future positively in their time attitude may increase their resilience because that tendency serves a protective function in mental health and can be effective in a recovery role in crisis situations. Therefore, to increase adolescents' resilience so they may cope with difficulties and increase their personal resources, it would be more meaningful to think constructively of the past in order to increase their joy, enthusiasm for the present, optimism, and hope for the future.

6. Limitations and Future Studies

Although important results were obtained concerning the time attitudes of high school students, there are some limitations. First, data were collected with the survey method, which is one of the self-report-based measurement tools. This makes it difficult to establish causal links in the results. The other limitation is that data were collected without regard to ethnic and cultural differences. Despite these limitations, the results of the study provide indispensable information for estimating the effect of time attitude on self-esteem.

When the research results are evaluated in the context of relevant literature, they provide valuable information for high school students, parents, teachers, and the Ministry of Education. In this study, it was revealed that the time-attitude variable, which is an important variable for the personal development of high school students, is related to the variables of resilience and self-esteem. This knowledge can be used as a source for future studies, guidance, and psychological counseling for adolescents. In order to determine the variables related to self-esteem, which is important for high school students who are in the structuring process of their lives in terms of professional, social, and emotional aspects, variables other than those explored in this study can be addressed in future studies.

Repeating the study among different age groups and comparing the results between age groups may contribute to increasing the generalizability and validity of the results. For this reason,

research can be tested and results can be compared by using different research methods such as mixed-method, qualitative method, or experimental designs. These differences can be explored in future research.

In this developmental stage, which is an important transitional stage in the preparation of adolescents for adult life, the young person is going through difficult developmental changes, being prepared for the future as an individual and a professional, and must learn to overcome the conflicts that inevitably arise. Considering the importance of time attitude for high school students, necessary training can be given to teachers and administrators by experts in order to help students develop a positive time attitude. In addition, the Ministry of Education, through Guidance and Psychological Counseling, can identify high school students with negative perceptions of the past, present, and future, and organize individual and collective training.

There is a need for regulations to be made and policies to be developed in this area through studies on the well-being of future adults, who constitute an important part of the population. In order for the social future to be strong and healthy, the Positive Youth Development approach has been proposed; this program aims to help young people to continue their lives in a functional way in adulthood by focusing on their positive features, strengths, and character strengths and supporting the development of these features (Lerner et al., 2009). This approach focuses on the creation of qualities that will support the development of individuals and societies (McDavid et al., 2019). In this perspective, youth is not a "problem to be solved"; it is accepted as a "potential value to be developed" (Damon, 2004). In this context, with the coordination of the ministry in schools and provinces, youth development centers can be expanded and adolescents can benefit free of charge.

Politicians can make legal arrangements to reduce unemployment and facilitate the employment of young people in particular fields in order to develop a positive future perception among adolescents. Legal arrangements can be made to improve the perception of justice regarding the employment process. In addition, adolescents need to receive qualified services in health institutions in order to create a positive perception of the present and future.

Future policies and regulations can be guided by studies such as this one that investigate the well-being of future adults. The evaluation of the results from this research in studies aimed at protecting the mental health of adolescents, creating appropriate psychological assistance services, and implementing counseling programs aiming to increase self-esteem would be beneficial.

Ethical Approval. All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards. This article does not contain any studies with animals performed by any of the authors.

Informed Consent. Informed consent was obtained from all individual participants included in the study.

Data Availability. The datasets generated during and/or analyzed during the current study are available from the corresponding author on reasonable request.

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