



School Engagement and Well-Being in Adolescents: Mediating Roles of Hope and Social Competence

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Abstract

The objective of this study was to evaluate the association between school engagement, well-being, hope, and social competence. Participants consisted of 322 secondary school students in Turkey [172 females (53.4%) and 150 males (46.6%)]. The participants' ages ranged from 11 to 15. Data were collected via School Engagement Scale, Mental Health Continuum-Short Form, Children's Hope Scale, and Perceived Social Competence Scale. The relations between variables were examined by structural equation modelling and bootstrapping procedure. The structural equation modelling indicated that hope and social competence fully mediate the association between school engagement and well-being. The results of the bootstrapping analysis confirmed the significance of indirect effects. The result of the study has provided an understanding of the psychosocial factors that may contribute to school engagement and well-being. It is considered that the results of this study will contribute to the literature on positive psychology and educational psychology. Result, implications and limitations were discussed.

Keywords School engagement · Well-being · Hope · Social competence · Educational psychology · Positive psychology

1 Introduction

Adolescence is an important developmental period during which identity formation occurs, relations with parents and peers change, physical growth and sexual maturation take place, and adolescents get ready for adulthood (Steinberg and Morris 2001). It is a period of development that involves a transition from childhood to adulthood. Sense of belonging has a crucial function for the functional development of adolescents (Allen

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and Kern 2017). For most teenagers, school constitutes the most important part of their lives. In addition to learning fundamental life skills, adolescents may also encounter many life crises, such as problematic behaviors, violence, substance use, and school dropout (APA 2002). Therefore, adolescence may be defined as a period of storm and stress.

Not every teenager faces major problems through adolescence, but storm and stress are more likely to occur than at any other ages. Furthermore, how this period will end depends on the individual, social and cultural environment (Arnett 1999). Having positive individual and social characteristics has positive outcomes, including prevention from mental illnesses, reducing many risky behaviors, improving academic achievement and school attendance. Adolescents' school engagement plays a crucial role, as it offers many opportunities for the positive development of adolescents. One of the positive consequences of school engagement may be well-being. Therefore, it is crucial to evaluate the variables playing a mediating role in the link between school engagement and well-being.

1.1 School Engagement

School engagement is considered as one of the most significant variables in educational studies, as it improves academic achievement, reduces stress and dissatisfaction, and prevents school dropouts (Archambault et al. 2009; Finn 1989; Fredricks et al. 2004; Fredricks et al. 2016; Wang Fredricks Hofkens & Linn 2019). When adolescents feel that other people at school care for them, this fosters adolescents' sense of belonging in schools. There is a positive relationship between school engagement and positive classroom management, involvement in extracurricular activities, tolerant discipline policies, and the smallness of school. Students with a higher level of school engagement have a lower rates of substance abuse, tendency to violence and sexuality at an early age (McNeely et al. 2002). School engagement plays a preventive role in students' mental health and risky behaviors (Allen and Kern 2017; Bond et al. 2007).

There are many studies which demonstrate behavioral, emotional, and cognitive features of school engagement (Connell and Wellborn 1991; Finn 1989; Fredricks et al. 2004, 2016; Jimerson et al. 2003; Wang et al. 2019). Behavioral engagement refers to observable characteristics such as involvement in academic, social and extracurricular activities, and plays a crucial role together with improvement in academic achievement to reduce school dropout. Emotional engagement express to the positive and negative attitudes towards teachers, classmates and school and increases the engagement to the school and will to achieve academic achievement. Cognitive engagement indicates the perception and belief of students regarding teachers and other students and provides the attention and desire required to understand complex ideas and learn the challenging skills (Connell and Wellborn 1991; Finn 1989; Fredricks et al. 2004; Jimerson et al. 2003; Wang et al. 2017).

Self-determination theory explains the school engagement of adolescents on the basis of the satisfaction of their basic needs. According to self-determination theory, autonomy, competence, and relatedness need to be taken into consideration in order to understand human motivation and well-being.

Autonomy is the capability to make one's own decisions; competence is feeling adequate to cope with one's environment, and relatedness is forming satisfactory social

relations. The satisfaction level of these requirements determines human motivation, personality development, performance and well-being (Deci and Ryan 2008; Ryan and Deci 2000). Connell and Wellborn (1991) developed the self-system process model by adapting basic psychological needs to the school environment. This model explains how the social context of the school affects the needs of an individual and school engagement. The implementation of studies that will enable students to act autonomously in school, feel competent in the tasks they perform and establish good relationships with their peers and teachers will increase their school engagements. When the ecological and social environment of the school provides opportunities to compensate students' needs of autonomy, competence and relatedness, students' school engagement increases, which, in turn, improves students' well-being. Moreover, increased school engagement enhances psychological well-being (Allen and Kern 2017; Waters et al. 2009).

School engagement is closely related to a student's social context and basic needs. The social relations, autonomy support, competence to perform the tasks at school, ability to act autonomously in relation to self-regulatory skills, and establishment of good relations with others are the determinants of the cognitive, emotional, and behavioral sides of school engagement. School engagement also produces several benefits, including academic achievement and graduation, social awareness and ability to establish good relations with others, emotional awareness, emotion regulation and conflict resolution skills (Appleton et al. 2008). Furthermore, studies have revealed that high level of student engagement is related with reduced level of risky behaviors, such as smoking, substance use, depression, suicidal thoughts, aggression and early sexual experience and lead to healthy behaviors such as exercising, safe sex and wearing helmets when cycling more often (Allen et al. 2018; Carter et al. 2007).

1.2 Well Being

The broaden-and-build theory of positive emotions argues that positive emotions produce many resources for an individual to live a better life. Positive emotions support many positive qualities, such as creativity, cognitive skills, attention, awareness, problem solving, coping with stress, productivity, and efficiency. It is emphasized that positive emotions increase an individual's physical and psychological well-being (Fredrickson 2013). It was also observed that happy people develop positive attitudes towards themselves and others and have higher levels of socialization, positive social behavior, effective conflict resolution ability, and altruism. Well-being has several benefits, such as having more friends, strong social support and rich social interactions that will increase social engagement. In addition, studies are showing that happy people tend to be more helpful and altruistic (Lyubomirsky et al. 2005). School engagement are positively correlated with positive emotions at school (Reschly et al. 2008). It was found that emotional well-being is a positive predictor of school engagement and that it has a mediating role in the well-being between modes of conduct and school engagement (Frydenberg et al. 2009).

The model used to evaluate well-being of adolescents in this study describes the well-being with positive attributes. Mental health generally refers to the lack of mental illness. However, the absence of a psychological problem is an essential criterion for mental health, but it is not adequate. This is because the lack of a psychological

problem does not necessarily mean that the individual has vigorous mental health (Jahoda 1958; Keyes 2005 2013; Westerhof and Keyes 2010). Mental health is not only the absence of psychological problems, but also a concept with three basic components: emotional well-being, which expresses the presence of positive feelings in daily life, psychological well-being, which expresses positive functioning in personal life, and social well-being, which expresses positive functioning in community life (Lamers et al. 2010; Westerhof and Keyes 2010).

The concept of mental health continuum, which expresses the characteristics of well-being, includes emotional, social and psychological well-being. Emotional well-being is a frequent feeling of positive emotions, such as happiness, during daily life (Keyes et al. 2008). Social well-being explains the functionality in terms of social participation, social integration, social cohesion, social development and social acceptance (Keyes 1998). Psychological well-being explains the psychological function in terms of self-acceptance, purpose in life, autonomy, personal growth, environmental mastery, positive relationships with others (Ryff 1989; Ryff and Keyes 1995). The concept of flourishing that expresses the existence of mental health is defined as the presence of positive emotions, psychological and social functioning. Languishing referring to the absence of mental health occurs in the opposite case, in the absence of positive emotions and functions (Keyes et al. 2008; Keyes 2013a). It is also emphasized that development and protection of positive mental health starting from adolescence reduces the risk of mental illness (Keyes 2013b).

A recent meta-analysis study showed that teacher support and positive personal attributes are the most powerful predictors of school engagement (Allen et al. 2018). There are studies demonstrating that positive personal attributes, such as self-efficacy, hope and positive affect of students support school engagement. Develop positive personal attributes of adolescents plays a crucial role in supporting their school engagement and their academic achievement (Allen et al. 2018). Many studies have shown that school engagement has a positive impact on youth well-being. (Anderman 2002; Ciarrochi et al. 2015; Gillison et al. 2008; You et al. 2008). In this context, school engagement may be considered as a predictor of well-being. Also, positive personality traits such as hope and social competence may increase adolescents' well-being.

1.3 The Mediating Roles of Hope and Social Competence

Hope is a concept that combines cognitive and motivational characteristics, including the belief that one can use functional pathways to achieve goals and the agency that one can use the pathways one has chosen to achieve the desired goals. One's thoughts about the future also influence his/her current way of thinking. Positive internal talks about the future are shown among the characteristics of hopeful people (Snyder 2002; Snyder Rand Shorey & Sigmon 2002). It is suggested that both dimensions should be evaluated together to understand hope in children. The concept of hope is closely related to perceived control and perceived competence. Competence refers to a child's belief in his/her own capacity to reach specific and general goals (Snyder et al. 1997).

People with a high level of hope are motivated to achieve their goals, while people with a low level of hope are lazy to reach their goals. If a person wants to increase his/her positive emotions, he/she should remember the memories of past achievements. Remembering failures, on the other hand, will cause negative feelings (Snyder 2002).

Hope has a positive relation with positive emotions and has a negative relation with negative emotions (Snyder et al. 1991). Hope has a lot of preventive and improving functions. Hope improves performance, self-esteem, psychological health and physical health. Hope is a concept not only related to individual well-being but also to social well-being (Snyder et al. 2000).

The concept of hope is related to the theory of self-efficacy. According to Bandura (1994, 1997), self-efficacy is an individual's belief in his/her capacity to successfully carry out actions that affect his or her life. Self-efficacy belief influences how one feels, thinks, and is motivated. Personal achievements, social relations and role models are highly significant for the development of self-efficacy. It is emphasized that positive emotions will increase self-efficacy. Social competence refers to the individuals' competency in forming successful social relations. If satisfactory and supportive social relations are not developed, vulnerability to depression increases.

Social competence is defined as prosocial behaviors enabling the initialization and maintenance of social interactions that involve getting along with and helping others (Anderson-Butcher et al. 2008; Anderson-Butcher et al. 2016). Social competence involves the abilities to look at events from others' point of view and coping with social challenges by giving appropriate responses. The perception of social competence is based on the positive social interactions of the people and provides the anticipation of positive social interactions in the future (Semrud-Clikeman 2007). Social competence is related to social skills such as making friends, empathy, helpfulness and social awareness (Groh et al. 2014). Baumeister and Leary (1995) state that the motivation underlying human behavior is the belongingness, and that people often tend to establish long-term positive relations.

The PERMA model designed by Martin Seligman defines well-being as positive emotions, engagement, positive relations, meaning and accomplishments (Seligman, 2011). The PERMA model was adapted to adolescents by Kern et al. (2016) and has become more appropriate for development. School engagement and hope was found to be positively associated with well-being, which includes engagement, perseverance, optimism, connectedness, and happiness (Kern et al. 2016).

Social competence includes individual's and others' perceptions of competence in social interaction towards the individual. While the perception of the individual towards himself/herself is related to the satisfaction of his/her needs and achievement of his/her personal goals, the perception of others is related to the interpersonal relatedness. Interpersonal relatedness is provided by establishing healthy relationships with friends, acquiring an appropriate role within the social group, and meeting the society's expectations (Rose-Krasnor 1997). In this context, the relation between social competence and hope can be understood. While social competence is related to social goals, hope is related to individual goals. Hope that expresses personal competence is for meeting the need for autonomy and competence, while the social competence is for meeting the need for relatedness.

Fredrickson (2013) emphasizes that positive emotions have many positive effects, such as cognitive skills, careful problem solving and productivity. Lyubomirsky et al. (2005) note that happy people are successful both in their personal and social lives and that they have prosocial behaviors. Feeling self-efficacy and having good relations with others are important for school engagement (Connell and Wellborn 1991; Waters et al. 2009). Hope and social competence may play a considerable role in the relation between school engagement and well-being.

1.4 Current Study

Adolescents who are more school engaged show better mental health outcomes. School engagement can be important when trying to improve prosocial behavior and well-being (Oldfield et al. 2016). There was a positive correlation with social competence, optimism, connectedness, happiness and school engagement (Šeboková et al. 2018). Although previous studies have examined the relationship between school engagement and well-being (Allen et al. 2018; Appleton et al. 2008; Archambault et al. 2009), there are not enough studies to determine the mediation factors for the relationship between school engagement and well-being. The study evaluates the relation between school engagement, well-being, hope and social competence. To date, no research has investigated the relationship between school engagement, well-being, hope and social competence. In light of previous studies, it may be suggested that hope and social competence may play mediating roles in the relation between school engagement and well-being. In other words, an increase in school engagement may increase hope and social competence, this can also promote well-being. The theoretical model is shown in Fig. 1. Mathematical models of theoretical model between variables are presented: $\text{Well-being} = \beta_{22}\text{hope} + \beta_{21}\text{social competence} + \zeta_1$; $\text{Hope} = \gamma_{21}\text{school engagement} + \zeta_3$; $\text{Social competence} = \gamma_{11}\text{school engagement} + \zeta_2$. A literature review has put forth that no studies have been conducted examining this relation in Turkish adolescents.

2 Method

2.1 Participants

The participants consisted of 322 [172 females (53.4%) and 150 males (46.6%)] secondary school students in Turkey. Their ages ranged from 11 to 15 ($M = 13.01$, $SD = 0.92$). Participants were attending sixth, seventh, and eighth classes in secondary school (95 (29.5%), 101 (31.4%), and 126 (39.1%), respectively). The participants were determined by convenience sampling method. Data were collected via School Engagement Scale, Mental Health Continuum-Short Form, Children's Hope Scale, and Perceived Social Competence Scale. The data were collected in a manner consistent with ethical standards for use of human subjects in research. The necessary permission

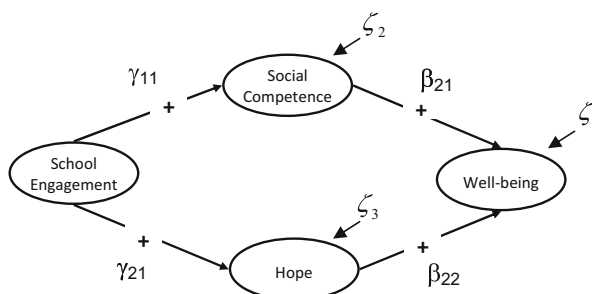


Fig. 1 Theoretical Model

was obtained from the ethics committee of a university for the research. Before collecting the data, the school administrator was asked whether the research could be done or not. After that, informed consent was obtained from the participants' parents. Later, informed consent was obtained from their children as well. The measures were applied to volunteer students in classroom groups in paper and pencil based format in the classroom.

2.2 Measures

School Engagement Scale: The scale was developed by Fredericks et al. (2005) and adapted to Turkish by Akın, Demirci, Sarıçam, Usta, Yalnız and Yıldız (2013). The scale consists of 19 items and three subscales. Each item was rated on a 5-point Likert scale (1 = Never, 5 = Always). Yield total scores from 19 to 95 where higher scores indicate more school engagement. Results of confirmatory factor analysis indicated that the three-dimensional model was well fit. The Cronbach alpha internal consistency coefficients of the scale were calculated .62 for behavioral engagement, .82 for emotional engagement, .81 for cognitive engagement, and .80 for the overall scale. The 3-week test-retest reliability coefficients of the scale were calculated .63, .68, .67 for subscales, and .78 for the overall scale (Akın et al. 2013). In this study, the internal consistency coefficients of the scale were calculated .86.

The Mental Health Continuum-Short Form: The scale was developed by Keyes et al. (2008) and adapted to Turkish by Demirci and Akın (2015). The scale consists of 14 items and three subscales. Each item was rated on a 6-point Likert scale (0 = Never, 5 = Every day). Yield total scores from 0 to 70 where higher scores indicate more flourishing. Results of confirmatory factor analysis indicated that the three-dimensional model was well fit. The Cronbach alpha internal consistency coefficients of the scale were calculated .84 for emotional well-being, .78 for social well-being, .85 for psychological well-being, and .90 for the overall well-being (Demirci and Akın 2015). In this study, the internal consistency coefficients of the scale were calculated .90.

Children's Hope Scale: The scale was developed by Snyder et al. (1997) and adapted to Turkish by Atik and Kemer (2009). The scale consists of 6 items and two subscales (agency and pathway). Each item was rated on a 6-point Likert scale (1 = Never, 6 = Always). Yield total scores from 6 to 36 where higher scores indicate more hope. Results of confirmatory factor analysis indicated that the two-dimensional model was well fit. The Cronbach alpha internal consistency coefficient of the scale was calculated .74. The 4-week test-retest reliability coefficient of the scale was calculated .57 (Atik and Kemer 2009). In this study, the internal consistency coefficients of the scale were calculated .82.

Perceived Social Competence Scale: The scale was developed by Anderson-Butcher et al. (2008) and adapted to Turkish by Sarıçam, Akın, Akın, and Çardak, (2013). The scale consists of 6 items. Each item was rated on a 5-point Likert scale (1 = Never, 5 = Always). Yield total scores from 5 to 30 where higher scores indicate more social competence. Results of confirmatory factor analysis indicated that the two-dimensional model was well fit. The Cronbach alpha internal consistency coefficient of the scale was calculated .80. The 3-week test-retest reliability coefficient of the scale was calculated .57 (Sarıçam et al. 2013). In this study, the internal consistency coefficients of the scale were calculated .79.

2.3 Data Analysis

The model testing correlational design was used in this research. The relationship between school engagements, well-being, hope, and social competence have been tested by structural equation modelling. Firstly, we examined the psychometric properties of the Turkish version of Mental Health Continuum-Short Form in adolescents. Because the previous adaptation study (Demirci and Akın 2015) was conducted in the sample of Turkish university students. In this phase, factor structure, Cronbach alpha internal consistency coefficients and the item-total correlations were examined. We then used item parceling for social competence to decrease the number of observed variables and to control for measurement errors (Little et al. 2002; Nasser-Abu Alhija and Wisenbaker 2006). Three item parcels for social competence were formed as a result. Next, descriptive statistics (variable's means, standard deviations, skewness, and kurtosis score) were calculated. After that, the correlation analysis was executed. Then, two-step structural equation modelling was used to determine the relationships school engagements, well-being, hope and social competence. The first step, the measurement model was performed. The second step, when the measurement model is shown acceptable fit, the structural model has been examined.

Numerous fit indexes are used for the aim of presenting the adequacy of the model tested in structural equation modelling. According to the Kline (2015) recommendation, χ^2/df ratio, SRMR, RMSEA, CFI, and TLI was calculated in order to present the adequacy of the structural models. In previous studies suggested that, acceptable fit value for RMSEA and SRMR was .08 (Brown and Cudeck 1993; Byrne and Campbell 1999), for the CFI, NFI and NNFI was .90 (Bentler 1980; Bentler and Bonet 1980; Schermelleh-Engel and Moosbrugger 2003), for the χ^2/df ratio was smaller than 3 (Schermelleh-Engel and Moosbrugger 2003). In addition, AIC and ECVI values were compared for the aim of a better model fit among the alternative models. The smallest AIC and ECVI values express a better fit (Brown 2015; Kline 2015).

To detect multicollinearity among variables, Variable Inflation Factor (VIF) and tolerance was calculated. Values of VIF were found less than 3 and values of tolerance were found greater than .10 (Kline 2015). Also, skewness and kurtosis values were calculated for normal distribution. All variables skewness and kurtosis values were found between -1.08 and $+1.09$ (Tabachnick & Fidell 2013). Descriptive statistics are shown in Table 2. The bootstrapping method was conducted with 10,000 bias-corrected bootstraps to re-support the indirect role of mediator variables. When the results showed that zero is not contained in the 95% confidence intervals, the mediating effects of the variables statistically significant (Preacher and Hayes 2008). In mediation analyses, gender and grade was used as control variable. Data were analysed by SPSS and AMOS.

3 Results

3.1 Study 1: The Psychometric Properties of the Mental Health Continuum-Short Form in Adolescents

A previous study, Demirci and Akın (2015) was to translate the Mental Health Continuum-Short Form (MHC-SF) into Turkish and to examine its psychometric

properties in university students. In this study, the psychometric properties of the MHC-SF were examined in the Turkish adolescent sample.

3.1.1 Reliability and Item Analysis

The corrected item-total correlations of the scale ranged from .56 and .65, for emotional well-being subscale ranged from .51 and .61, for social well-being subscale ranged from .57 and .65, for psychological well-being subscale, and for the overall scale ranged from .58 and .64. The internal consistency coefficients of the scale were calculated .77 for emotional well-being, .78 for social well-being, .83 for psychological well-being, and .90 for the overall well-being. Corrected item total correlations indicate that the relationship between the scores obtained from each item in the scale and the total score of the scale. The positive and high values indicate that each item in a measurement tool exemplifies similar behaviors. The item-total correlations and descriptive statistics are shown in Table 1.

3.1.2 Construct Validity

In this study, as construct validity, confirmatory factor analysis was examined the original scale's three dimensional factor structure. Results of confirmatory factor analysis demonstrated that the 14 items loaded on three factors ($\chi^2_{(74, N=322)} = 163.008$, $\chi^2 / df = 2.203$, $p < .001$; CFI = .95; TLI = .94; SRMR = .044; RMSEA = .061 (90% CI = .049, .074). Factor loadings ranged from .59 to .82. The path diagram and factor loading of The MHC-SF are shown in Fig. 2.

Table 1 Item-total correlations and descriptive statistics of the MHC-SF

Subscales	Item	$\bar{X}$	SD	r_{it}	r_{its}
emotional well-being	mhc1	3.74	1.23	0.48	0.56
	mhc2	3.58	1.42	0.59	0.59
	mhc3	3.73	1.30	0.64	0.65
social well-being	mhc4	3.32	1.48	0.53	0.51
	mhc5	3.96	1.34	0.57	0.51
	mhc6	3.41	1.54	0.61	0.61
	mhc7	3.35	1.53	0.57	0.59
	mhc8	3.37	1.48	0.59	0.55
psychological well-being	mhc9	3.90	1.33	0.62	0.61
	mhc10	3.81	1.25	0.59	0.57
	mhc11	3.71	1.43	0.63	0.58
	mhc12	3.64	1.46	0.55	0.60
	mhc13	3.77	1.38	0.62	0.64
	mhc14	4.01	1.37	0.61	0.65

Note. N = 322, r_{it} = Item-total correlations for MHC-SF overall score, r_{its} = Item-total correlations for MHC-SF subscales score

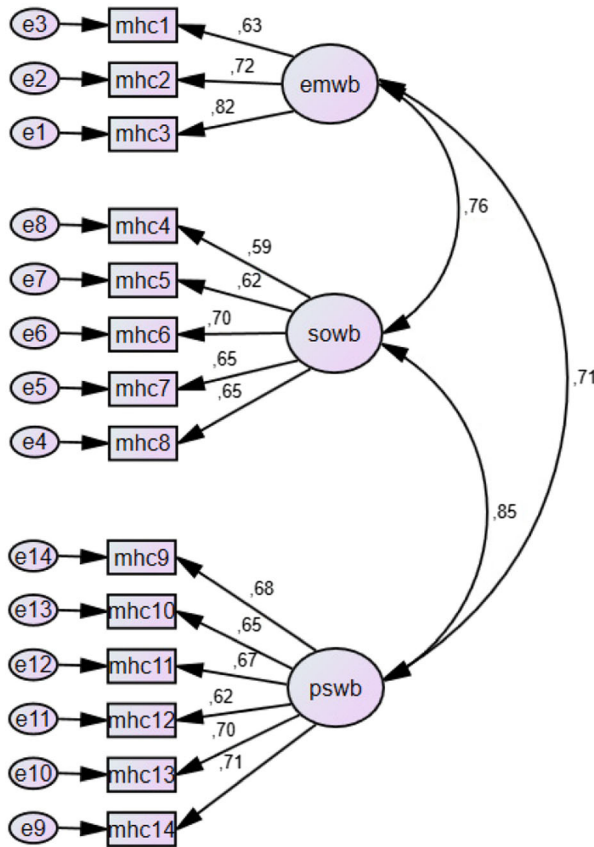


Fig. 2 Confirmatory factor analysis model of the MHC-SF

3.2 Study 2: The Relationship between Well-Being, School Engagement, Hope and Social Competence

3.2.1 Correlation Analysis and Descriptive Statistics of Variables

Bivariate correlations analysis results and descriptive statistics are shown in Table 2. The skewness indices for all variables ranged from $-.24$ to -1.08 and the kurtosis indices for all variables ranged from $-.49$ to $.109$. These values are acceptable for normal distribution. Correlation analysis are shown that all variables have significant positive relationship with each other (ranged from $r = .49$ to $r = .77$, $p < 0.01$). Interrelations of the variables were provided with a basis for structural equation modelling.

3.2.2 Gender Differences for School Engagement, Hope, Social Competence, and Well-Being

Independent samples *t* tests were performed to determine whether there was a gender difference between the variables. Significant gender differences were found for school engagement and social competence. Females reported statistically significantly higher

Table 2 Correlation analysis and descriptive statistics of variables

Scales	1	2	3	4	5	6	7	8	9	10	11	12
1. School Engagement Scale	—											
2. Behavioral engagement	.71**	—										
3. Emotional engagement	.82**	.48**	—									
4. Cognitive engagement	.88**	.42**	.55**	—								
5. MHC-SF	.57**	.35**	.54**	.49**	—							
6. Emotional well-being	.48**	.33**	.50**	.35**	.77**	—						
7. Social well-being	.49**	.26**	.46**	.44**	.89**	.58**	—					
8. Psychological well-being	.52**	.32**	.46**	.46**	.91**	.58**	.69**	—				
9. Children's Hope Scale	.58**	.35**	.49**	.53**	.72**	.55**	.62**	.66**	—			
10. Agency	.55**	.36**	.47**	.49**	.66**	.59**	.58**	.59**	.91**	—		
11. Pathway	.50**	.29**	.42**	.47**	.64**	.45**	.56**	.61**	.91**	.65**	—	
12. Social Competence Scale	.56**	.38**	.49**	.48**	.57**	.45**	.50**	.52**	.49**	.46**	.44**	—
Mean	73.00	21.13	24.85	27.03	51.31	11.05	17.40	22.85	28.77	14.37	14.40	25.74
Std. Deviation	11.40	3.34	4.30	6.25	12.82	3.27	5.37	6.06	5.94	3.24	3.31	3.98
Skewness	-0.47	-0.87	-0.92	-0.24	-0.77	-0.86	-0.72	-0.99	-0.86	-0.91	-0.84	-1.08
Kurtosis	-0.22	0.23	0.61	-0.49	0.15	0.00	-0.07	0.71	0.34	0.23	0.13	1.09
Cronbach α	.86	.60	.78	.78	.90	.77	.78	.83	.82	.69	.73	.79

Note. N = 322, ** $p < 0.01$

levels of school engagement ($t = 4.871$ $p < 0.001$, $d = .55$), and social competence ($t = 2.882$, $p < 0.01$, $d = .32$). Effect sizes were found small for social competence and moderate for school engagement. Independent samples t tests results are shown in Table 3.

3.2.3 Measurement Model

The measurement model is evaluated in the first step, before testing hypotheses about the structural model. Four latent variables are: well-being, school engagement, hope, and social competence). 10 observed variables are: emotional well-being, social well-being, psychological well-being, behavioral engagement, emotional engagement, cognitive engagement, agency, pathway, social competence parcel 1, and social competence parcel 2. Observed variables were chosen according to factor structures of the

Table 3 Gender differences for school engagement, hope, social competence, and well-being

Scales	Female (<i>N</i> = 172)		Male (<i>N</i> = 150)		<i>t</i>	<i>p</i>	Cohen's <i>d</i>
	Mean	SD	Mean	SD			
1. School Engagement Scale	75.80	± 10.64	69.80	± 11.43	4.871	0.000	0.55
2. Behavioral engagement	21.99	± 3.09	20.13	± 3.35	5.186	0.000	0.58
3. Emotional engagement	25.54	± 4.17	24.05	± 4.33	3.149	0.002	0.35
4. Cognitive engagement	28.26	± 5.95	25.62	± 6.30	3.865	0.000	0.43
5. MHC-SF	51.82	± 13.27	50.71	± 12.31	0.776	0.438	0.09
6. Emotional well-being	11.10	± 3.32	11.00	± 3.23	0.270	0.787	0.03
7. Social well-being	17.30	± 5.39	17.52	± 5.35	−0.362	0.718	−0.04
8. Psychological well-being	23.43	± 6.37	22.20	± 5.64	1.824	0.069	0.20
9. Children's Hope Scale	29.01	± 6.10	28.49	± 5.77	0.780	0.436	0.09
10. Agency	14.39	± 3.25	14.34	± 3.23	0.126	0.900	0.01
11. Pathway	14.62	± 3.40	14.15	± 3.20	1.280	0.201	0.14

scales. The measurement model showed acceptable fit: $\chi^2_{(26, N=322)} = 55.730$, $\chi^2 / df = 1.922$, $p > .05$; CFI = .98; TLI = .97; SRMR = .030; RMSEA = .054 (90% CI = .032–.075). Standardized factor loadings ranged from .59 to .84, and all observed variables loaded significantly their corresponding latent variables. These results indicate that the structural model can be established. The measurement model is shown in Fig. 3.

3.2.4 Structural Model

Three possible structural models have been examined due to the most appropriate model for structural relations and comparison the alternative models. According to the theoretical framework, we tested the roles of social competence and hope as full mediator between school engagement and well-being (Model I). This model is shown acceptable fit: $\chi^2_{(47, N=322)} = 109.719$, $\chi^2 / df = 2.334$, $p = .000$; CFI = .96; TLI = .94; SRMR = .046; RMSEA = .064 (90% CI = .049–.080); AIC = 171.719; ECVI = .535. All links between variables were found statistically significant. Then, we tested the roles of social competence and hope as partially mediator, the direct path from school engagement to well-being was added (Model II). This model is shown acceptable fit: $\chi^2_{(46, N=322)} = 109.670$, $\chi^2 / df = 2.384$, $p = .001$; CFI = .96; TLI = .94; SRMR = .046; RMSEA = .066 (90% CI = .050–.082); AIC = 173.670; ECVI = .541. However, the link from school engagement to well-being was found not statistically significant ($\beta = -.03$, $p = .827$). Then for comparison, we tested the role of school engagement a full mediator between social competence/hope and well-being. All links between variables were found statistically significant. However, this model is shown insufficient fit: $\chi^2_{(45, N=322)} = 153.272$, $\chi^2 / df = 3.406$, $p < .001$; CFI = .93; TLI = .90; SRMR = .052; RMSEA = .087 (90% CI = .072–.102); AIC = 219.272; ECVI = .683. Three established structural models goodness of fit indices and AIC/ECVI values are shown in Table 4. Model I had the smallest AIC/ECVI value.

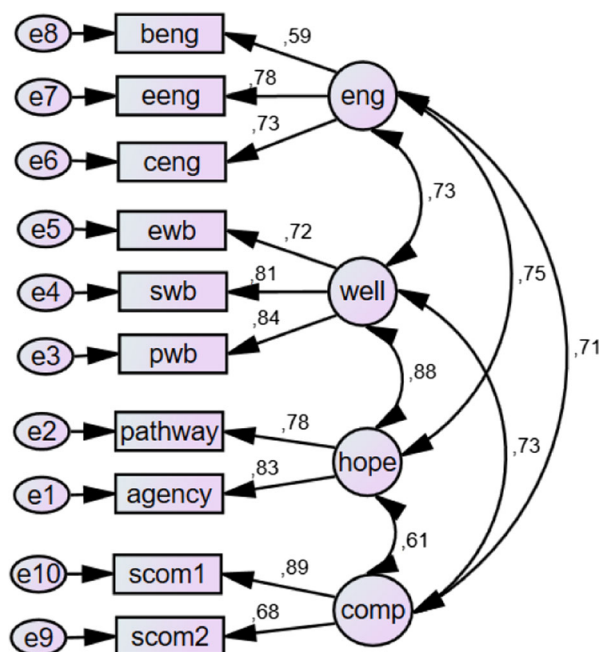


Fig. 3 Measurement model. Note. $N = 322$. eng = School Engagement, well = Well-being, comp = Social Competence, beng = behavioral engagement, eeng = emotional engagement, ceng = cognitive engagement, ewb = emotional well-being, swb = social well-being, pwb = psychological well-being, scom1 = social competence parcel 1, scom2 = social competence parcel 2

The structural equation modelling indicated that hope and social competence are fully mediated the association between school engagement and well-being. The bootstrapping method was conducted with 10,000 bias-corrected bootstraps to re-support the mediating roles of social competence and hope. Results showed that zero is not included in the 95% confidence intervals. The results of the bootstrapping analysis confirmed significance of indirect effects.

According to the Model I, school engagement was positively predicted hope ($\beta = .76$, $p < .001$, 95% CI = .66, .84) and social competence ($\beta = .73$, $p < .001$, 95% CI = .60, .84). In addition, hope ($\beta = .68$, $p < .001$, 95% CI = .52, .81) and social competence ($\beta = .35$, $p = .001$, 95% CI = .020, .50) positively predicted well-being. Furthermore, the indirect effect of well-being on school engagement mediated by hope and social competence (bootstrap estimate = .76, $p < .001$, 95% CI = .68, .84). Standardized path coefficients can be seen in Fig. 4 for Model I.

Table 4 Fit indices about three structural models

Model	χ^2	df	χ^2 / df	CFI	TLI	SRMR	RMSEA (CI)	AIC	ECVI
Model I	109.719	47	2.334	.96	.94	.046	.064 (.049–.080)	171.719	.535
Model II	109.670	46	2.384	.96	.94	.046	.066 (.050–.082)	173.670	.541
Model III	153.272	45	3.406	.93	.90	.052	.087 (.072–.102)	219.272	.683

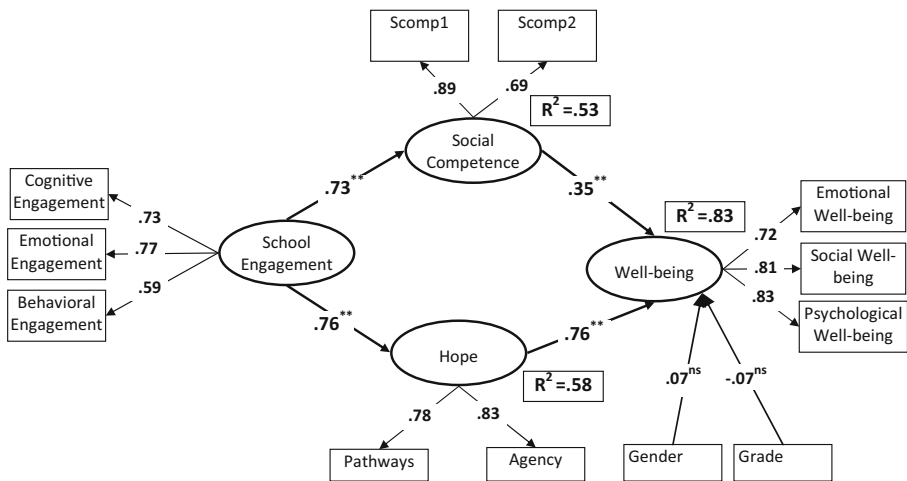


Fig. 4 Standardized path coefficients for the Model I. Note. N = 322. ** $p < 0.01$, ns = non-significant

4 Discussion

The study evaluated the mediating role of hope and social competence in the association between school engagement and well-being. Within the scope of the study, we first examined the psychometric features of the Mental Health Continuum-Short Form. The confirmatory factor analysis results indicated that the goodness of fit index of the Mental Health Continuum-Short Form was acceptable. Cronbach alpha internal consistency coefficient of the scale was found to be acceptable. Kline (2000) stated that the Cronbach alpha internal consistency coefficient over .70 is considered acceptable. On the other hand, according to Aiken and Groth-Marnat (2006), reliability coefficients of .60 are acceptable as adequate in studies that do not aim at individual assessment. The item analysis of the scale was performed by examining the corrected item-total correlations. The corrected item-total correlations are .30 and over indicate that each item exemplifies a similar behavior (Nunnally and Bernstein 1994). Correlations between total scores and subscale scores of the items in the scale were found to be over .30.

According to the results of the correlation analysis, there were significant positive relations among well-being, school engagement, hope and social competence as expected. As a result of the comparison of different structural equation models, according to the selected model I, hope and social competence play mediating roles in the relationship between school engagement and well-being. The best-fitting model with the data supports the full mediation roles of hope and social competence between school engagement and well-being. An increase in school engagement increases hope and social competence, and an increase in hope and social competence also increases well-being. In other words, school engagement is related to well-being through hope and social competence.

When previous studies are examined, there have been studies conducted to support the mediating roles of hope and social competence in the relationship between school engagement and well-being. In the related literature, there are studies investigating the relationship between study variables. Longitudinal studies have supported school belonging is significantly associated with adolescents well-being. Primary school

students with higher levels of school engagement later reported higher school satisfaction and more frequent positive effects in school (Tian et al. 2016). In another study, school engagement showed a big positive correlation with emotional well-being, while there was a moderately negative relationship between school belonging and emotional distress (Arslan 2018). Students with higher levels of school engagement experienced more positive emotions and less negative emotions, which supported to their school achievement (Lam et al. 2015).

A student's cognitive, emotional and behavioral school engagement have several positive results, including academic achievement, emotional and social well-being (Appleton et al. 2008; Archambault et al. 2009). Emotional engagement in teacher-student and peer group relations had predicted experienced well-being in school (Pietarinen et al. 2014). In a longitudinal study which monitored adolescents from the 7th to the 12th grade, it was found that there is a positive relationship between hope and emotional well-being and that hope predicts well being. However, well-being's power of prediction of hope was found to be relatively low. Purpose-oriented nature of hope is necessary for the development and maintenance of well being in adolescents (Ciarrochi et al. 2015). You et al. (2008) found that hope increases the life satisfaction of students through school engagement. As hope increases in children, school engagement and life satisfaction also increase. In another study, school engagement and hope were found to be positively related. School engagement is accepted as a predictor of hope (Van Ryzin et al. 2009). Children with high levels of hope also have high levels of social competence (Snyder et al. 1997). Hope is accepted as a determinant of psychological and social cohesion (Snyder 2002). These researches support the mediating roles of hope between school engagement and well being.

The development of social and emotional competence is necessary both for school engagement and learning and it plays a crucial role in the well-being of students (Barblett and Maloney 2010). Social competence has a mediating role between psychological well-being in the first year and well being in the third year (Holopainen et al. 2012). School engagement significantly predicted social competence during middle school (Simons-Morton and Crump 2003). Students with a good relationship with their peers and teachers were found to be more engaged in their schools. Relatedness can improve psychological and motivational well-being of children in the school (Furrer and Skinner 2003). In another longitudinal study, engagement to the school, family, friends, and society predicts well-being over a 3-year period in adolescents. When the dimensions of social engagement are examined separately, it has been found that the engagement to the family and school has a stronger relationship with well being than engagement to the peers and society. School engagement of adolescents is more important than their engagement to their peers and society. It has also been emphasized that positive relationships and school connectedness can enable better well-being (Jose et al. 2012). Furthermore, prosocial behavior is associated with well-being (Weinstein and Ryan 2010). These researches support the mediating role of social competence between school engagement and well being.

The mediating role of hope and social competence in the relationship between school engagement and well being seems consistent with former research (Parker et al. 2015; Upadaya and Salmela-Aro 2013; Van Ryzin et al. 2009). School engagement has been correlated positively with positive emotions, peer support, and social conduct (Lam et al. 2014). Higher hope has been correlated positively with school

engagement, life satisfaction, mental health (Marques et al. 2015) and social competence (Barnum et al. 1998). In longitudinal studies, hope significantly predicted well-being in adolescence (Ciarrochi et al. 2007; Marques et al. 2013). In primary school students, optimism, school engagement and prosocial behaviors were positively related to each other (Wilkins et al. 2015). Similar results have been reached in Turkey. School engagement showed a positive relationship with life satisfaction of adolescents (Özdemir and Koruklu 2013). On the other hand, school engagement is negatively related to hopelessness and loneliness (Altınsoy and Özyer 2018). Social relations based on tolerance, benevolence and trust are among the crucial predictors of inner peace and happiness (Demirci and Ekşi 2018).

The mediating role of hope and social competence is understandable when the relationship between school engagement and well being is taken into consideration with basic needs. In their study that longitudinally examined the impact of students' autonomy, competence and related needs on their quality of life by adapting self-determination theory to the school environment, Gillison et al. (2008) found that students' quality of life predicted by satisfaction of the needs for autonomy and relatedness. Autonomy, competence and relatedness support which students receive from their peers, teachers and school predicts school engagement. School engagement also predicts academic achievement (Zimmer-Gembeck et al. 2006). Relatedness and competence needs at school and school satisfaction predicted prosocial behavior (Tian et al. 2018). Longitudinal analyses displayed that and behavioral school engagement and subjective well-being were mutually predictive over time (Zhu et al. 2019). In another longitudinal study, students who had high life satisfaction and normal distress group had the highest school engagement, while students classified as low life satisfaction and high distress reported the lowest school engagement (Moffa et al. 2016). The social exchange model (Dodge et al. 1986) explains why social competence mediates the relationship between school engagement and well-being. Social competence requires social interaction in which the adolescents turn their competency into behavior. When adolescents exhibit social behavior, then their peers evaluate the adolescent according to this behavior. This judgment affects peers' behavior towards adolescents (Dodge et al. 1986). Since social competence will affect peers' behavior towards adolescents, it plays a mediating role in increasing well-being.

In school years, especially from the beginning of adolescence, students start to make choices that will affect their future. The concept of hope includes students' determining important goals and finding ways to achieve these goals, and it must be explored in educational psychology. Especially psychological counsellors' understanding influence of hope in the life of students and conducting studies for the development of hope will be beneficial for students' well being, coping with problems and academic achievements (Snyder et al. 2002).

Significant gender differences were found for school engagement and social competence. Previous studies support that females have higher levels of school engagement than males (Furrer and Skinner 2003; Gillen-O'Neel and Fuligni 2013; Hughes et al. 2015). The average of social competence level of females was found to be higher than males (Anderson-Butcher et al. 2016). In this study, gender and grade were used as control variables. The relationships between variables remain significant when gender and grade are controlled. However, as these results were obtained from the t test, a causal relationship between variables based on gender and grade was not considered.

5 Limitations

There are some limitations to this study. The study group consisted of adolescents in secondary school. Research data were collected from 6th, 7th and 8th grade students through convenience sampling method. Participants live in the Black Sea region and the Marmara region of Turkey. In order to improve generalization of the results, future studies may test this relationship through different or more representative samples. In addition, measurement tools based on the individual's giving information about himself/herself were employed. Self-report measurement tools may lead to a social desirability bias affecting the results. Teacher, family, and peer evaluations and observations about the variables in the study can contribute to more objective findings. In addition, only positive functioning was evaluated while evaluating well being in the research. In subsequent studies, well being may be assessed to include its psychopathological features. In the mediation analysis, gender and grade were used as controls. However, there are many variables that can affect both school engagement and well-being. It will be useful to control individual, familial, cultural, social, and economic factors that may affect variables in subsequent studies. This study cannot give causal relationships due to cross-sectional data. Therefore, experimental and longitudinal studies are needed to provide evidence for causal effects between variables.

6 Conclusion

Positive psychology paradigm not only affects many areas of psychology but is also practiced in educational psychology. There are many advantages to focusing on the positive characteristics of students. Fredrickson (2013) argues that positive emotions have many benefits both short- and long-term. Studies suggest that psychological counsellors at schools should carry out studies to develop positive emotions and flourishing (Howell et al. 2013; Terjesen et al. 2004). The concept of positive education emphasizes that studies to improve students' well-being within the school should be conducted. Positive psychology programs may increase students' well-being and school engagement (Seligman et al. 2009). The interventions to be made to ensure the positive impact of school engagement on well being should include studies to develop social engagement skills such as helpfulness (Jose et al. 2012). Many positive activities such as fulfilling basic needs, development of positive character traits such as hope and helpfulness and engagement and connectedness to nature improve the mental health of adolescents (Howell et al. 2013). Adolescents with high levels of well-being have low levels of depression and behavioral problems and high levels of prosocial behaviors and engagement to school (Keyes 2013b). Positive-Psychology interventions can promote adolescents well-being (Shoshani and Steinmetz 2014).

There are studies showing that a high level of school engagement is positively associated with academic achievement and is negatively associated with adverse events such as depressive symptoms and burnout. School engagement supports positive aspects of the well-being of students such as positive emotions and life satisfaction (Upadaya and Salmela-Aro 2013). School engagement enhances adolescents' ability to adapt (Law et al. 2013). Anderman (2002) reported that school engagement is negatively related to depression, social exclusion, and school problems while it is

positively related to positive self-concept and academic achievement. In addition, studies show that school engagement is a strong negative predictor of depression and anxiety symptoms. School engagement is noted as an antecedent of mental health in the adolescence and in the future years (Shochet et al. 2006; Shochet et al. 2011). Many benefits of school engagement remind us of the need to develop school engagement. Based on the results of this study, we can suggest in order to increase well-being in students, studies should be carried out to develop their cognitive, emotional, behavioral school engagement along with activities that will increase students' hope and ensure that they exhibit prosocial behaviors. Psychological counselors at middle schools can make use of these findings when planning individual and group counseling, and psychoeducational programs as well as studies to enhance well-being and positive school cultures. For this purpose, activities such as the writing of hopeful letters by students can be suggested to ensure their positive care for the future. Also, students may be asked to engage in activities to improve social competence such as helping other people. These findings may be noteworthy for schools and policymakers. In order to increase students' well-being, studies can be conducted to increase their school engagement. Understanding the factors most strongly associated with school engagement can give clues as to where changes in the system should take place. The results of current study may contribute to the literature of educational psychology and positive psychology on understanding school engagement and well-being in adolescents.

Compliance with Ethical Standards

Conflict of Interests The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Ethical Statement The authors declare that all the procedures of the study was conducted in compliance with the Helsinki Declaration. Voluntary participation, anonymity and informed consent were ensured for all participants and there were no experimental manipulation involved in the study.

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