



The Effects of Parent-Classmate-Teacher Support on Early Adolescents' School Mental Health: the Mediating Role of Mental Toughness

Yağmur Soylu¹ · Ali Serdar Sağkal² · Yalçın Özdemir²

© California Association of School Psychologists 2020

Abstract

Perceived social support is an important predictor of school mental health outcomes of students. However, more research is needed on the indirect effects in this association. The present study aimed to investigate the direct and indirect effects (via mental toughness) of parent-classmate-teacher support on early adolescents' school mental health. A total of 359 early adolescents ($M_{age} = 12.77$, $SD = 0.91$) from grades 6 to 8 participated in the research. The child and adolescent support scale, mental toughness scale for adolescents, and psychological wellbeing and distress screener were used as measuring instruments. The results suggest the importance of perceived social support from parents and classmates for school well-being, as well as the importance of mediating role of mental toughness. The present results extend our insight into the mechanism underlying the links between perceived social support and school mental health outcomes. Implications and limitations are discussed, and suggestions for future research are provided.

Keywords Mental toughness · Middle school students · School distress · School mental health · School well-being · Social support

Introduction

In the last two decades, positive psychology movement has largely changed the research focus from remedying deficits to improving human strengths. Promoting flourishing and optimal functioning has become utmost target at individual, family, and institution (e.g., school, hospital, and workplace) level across the globe. Although psycho-therapeutic and psycho-educational interventions are provided at the individual and family level, school-based interventions seem to be the best

place to deliver mental health services to the students and stakeholders at the institution level (Dowdy et al. 2015). Previous research revealed that school mental health importantly contributes to student outcomes such as improved academic success, psychological adjustment, and social relationships (Suldo et al. 2014). Therefore, exploring the contextual (e.g., parent, classmate, and teacher support) and individual factors (e.g., personal traits like mental toughness) promoting school psychological well-being and diminishing psychological distress is of importance to researchers, educators, and policy makers. In accordance with this premise, the present study aimed to investigate the direct and indirect effects (via mental toughness) of school-based social support on school well-being and distress in middle school students.

School-Based Social Support and School Mental Health

Grounded in the theoretical and empirical work on the bidimensional mental health model (BMHM; Renshaw and Bolognino 2017), school mental health is assessed in two subdimensions, namely, school well-being and distress. Compared with the traditional conceptualization of unidimensional model, the BMHM concerns not only indicators of

✉ Yağmur Soylu
yagmur-haci@hotmail.com

Ali Serdar Sağkal
aliserdarsagkal@gmail.com

Yalçın Özdemir
yalcin.ozdemir@adu.edu.tr

¹ Faculty of Education, Department of Counseling and Guidance Buca Campus, Dokuz Eylül University, 35380 Buca, İzmir, Turkey

² Faculty of Education, Department of Counseling and Guidance Central Campus, Aydın Adnan Menderes University, 09100 Aydın, Turkey

psychopathology but also indicators of positive psychology (Greenspoon and Saklofske 2001). While psychological distress reflects the degree to which students feel affective distress, psychological well-being dimension assesses perceptions regarding affective and adaptive well-being at the school (Renshaw and Bolognino 2017). The BMHM posits that school psychological well-being and distress are related but distinct constructs, both important in their own ways. Indeed, findings from previous researches also suggest that the BMHM predicts student outcomes over and above unidimensional mental health model (Renshaw et al. 2016). Empirical findings support that while school well-being is associated with improved student outcomes, school distress is linked with poor school functioning and even symptoms of psychopathology (e.g., Bond et al. 2007; Suldo et al. 2011; Wu 2017). For example, in a longitudinal study with 300 middle school students, Suldo et al. (2011) found that students high in school well-being and low in school psychopathology showed increased school attendance, better academic achievement, and math skills over time. In another longitudinal study examining developmental trajectories of depression in early adolescence (Wu 2017), it was reported that school-related factors (negative academic self-concept, poor self-esteem, and poor peer interactions) predicted developmental trajectories of depression. Therefore, based on repeated evidence of school mental health on students' subsequent academic, social, and emotional health, it is proposed that further investigation of the protective factors and mechanisms promoting school mental health is needed.

One of the important contextual factors that has been found to be influential on increasing school well-being and decreasing distress is school-based social support. It is suggested that social support defined as individuals' perceptions about general or specific support which they received from their social network significantly improves well-being and diminishes the risks of maladjustment (Demaray and Malecki 2002; Demaray et al. 2005; Malecki and Demaray 2003). When considering children and adolescents, it is likely that the social support network primarily consists of parents, classmates, and teachers. Indeed, to date, a large number of studies have examined the predictive and differential roles of parent, classmate, and teacher support on school well-being. In general, cross-sectional and longitudinal empirical findings (e.g., Jiang et al. 2013; Liu et al. 2016; Tian et al. 2013; Tian et al. 2015; Tian et al. 2016) demonstrated that school-based social support received from parents, classmates, and/or teachers predicts an important degree of variance in school well-being across cultures and developmental age groups. However, it is also observed that compared with parent and peer support, teacher support plays a salient role and accounts for an important degree of variance in the prediction of school well-being (Jiang et al. 2013). As a result, based on empirical findings, it can be concluded that school-based social support is an

important contextual factor contributing to well-being of students. Nevertheless, there are also some important gaps that should be noted. First of all, as it is discussed above, to date, the vast majority of research has focused on the effects of school-based social support on well-being of school children and adolescents. However, in accordance with theoretical explanations of the bidimensional mental health model (Greenspoon and Saklofske 2001; Renshaw and Bolognino 2017), there are two distinct continuum (school well-being and school distress) that might simultaneously contribute to personal and school outcomes of children and adolescents. Therefore, more research is needed integrating these two components in estimating the predictor role of school-based social support on school mental health outcomes of students. Furthermore, it also seems as a major limitation that the underlying individual mechanisms that account for the associations between school-based social support and school mental health outcomes are rather limited. Although some studies examined the individual factors like scholastic competence, self-esteem, and basic psychological need satisfaction (e.g., Tian et al. 2013; Tian et al. 2015; Tian et al. 2016), there is still a need for additional research unpacking the processes underpinning these associations.

Mental Toughness as a Potential Underlying Mechanism

Mental toughness as a multidimensional construct refers to an enduring psychological resource that helps individuals to buffer the negative effects of stressors and maintain goal-directed pursuits (Clough et al. 2002; McGeown et al. 2018). It is theoretically posited that although mental toughness aligns closely with the concepts like resilience, buoyancy, and perseverance, it is rather an umbrella term which includes a number of positive psychology attributes (McGeown et al. 2016). According to Clough et al.'s (2002) 4C model, mental toughness represents a constellation of non-cognitive attributes, namely, challenge, commitment, control (life and emotions), and confidence (abilities and interpersonal). Commitment refers to the degree to which an individual perseveres and achieves in a task despite obstacles. Challenge represents the attempts of the individual who seek to find opportunities for self-development. Control life and emotions refer to the control that the person has on diverse life situations and his/her emotions, respectively. While confidence in abilities refers to the degree of self-assurance that the person attempts difficult tasks, interpersonal confidence is defined as the degree to which an individual feels assertive in social situations. Although mental toughness has been largely studied in elite sport, it is currently receiving growing scholarly interest in educational contexts as well (Crust et al. 2014; St Clair-Thompson et al. 2015). It is theoretically assumed that mental toughness as a state-like psychological resource helps

students cope with the demands of the school and helps them to achieve their goals (McGeown et al. 2018). Indeed, findings from school settings confirm that mental toughness is positively related to school attendance, academic attainment, productive classroom behavior, and constructive peer relationships in adolescents (St Clair-Thompson et al. 2015). Additionally, research results highlight that students scoring higher in mental toughness are more likely to experience lower levels of depression, anxiety, and stress symptoms (e.g., Gerber et al. 2013; McGeown et al. 2018). Furthermore, data drawn from college students also demonstrate that mental toughness importantly contributes to academic achievement, academic progression (Crust et al. 2014), and psychological well-being (Stamp et al. 2015) in emerging adulthood. Therefore, building on the 4C model of mental toughness (Clough et al. 2002) and empirical findings, it can be posited that mental toughness may be an important self-system factor that helps to promote school mental health of the students.

Environmental factor rather than genetic one is usually recognized as an important antecedent of mental toughness. It is scholarly argued that social support network plays an important role in the development and enhancement of mental toughness attributes (Connaughton et al. 2008; Gucciardi et al. 2009). The qualitative data retrieved from elite performers (Connaughton et al. 2008) and coaches (Gucciardi et al. 2009) indicate that motivational climate, social support received from important others, and domain specific and overall life experiences are highly influential on the development of mental toughness of elite athletes. Therefore, it is possible that social support received from parents, classmates, and teachers helps students to develop attributes of mental toughness in educational contexts as well. Supportive environmental factors could increase students' mental toughness, which in turn may help them to cope with challenges and demands of the school context as well as perform goal-directed behaviors. Thus, scoring higher in mental toughness would be a crucial protective factor for increasing school well-being and decreasing school distress. As a result, given that social support is linked with the degree of mental toughness (e.g., Connaughton et al. 2008; Gucciardi et al. 2009), and assuming that mental toughness increases school well-being and decreases school distress (e.g., Crust et al. 2014; Gerber et al. 2013; McGeown et al. 2018; St Clair-Thompson et al. 2015; Stamp et al. 2015), then, it is plausible to argue that mental toughness would mediate the association between perceived social support and school mental health outcomes.

The Present Study

As school mental health is an important factor in educational settings, the present research aimed to examine the antecedents and mechanisms of school mental health in a sample of Turkish middle school students. Specifically, the research

examined the direct and indirect effects (via mental toughness) of social support received from parents, classmates, and teachers on school mental health outcomes of early adolescent students. Although mediator roles of self-system factors, such as scholastic competence, self-esteem, and need satisfaction, have been investigated so far (Tian et al. 2013; Tian et al. 2015; Tian et al. 2016), to the best of our knowledge, this is the first study investigating the mediator role of mental toughness in the link between social support and school mental health in middle school students. It is hypothesized that mental toughness would mediate the association between social support (parent, classmate, and teacher) and school mental health outcomes (school well-being and distress) in early adolescents. The present findings will help better understand the contextual factors and individual mechanisms promoting school mental health of early adolescents and thereby provide further insights for prevention and intervention programs.

Method

Participants

The participants were recruited from public middle schools in a western city in Turkey. A total of 359 early adolescents (182 girls and 177 boys) from grades 6 to 8 participated in the research. Participants' ages ranged from 11 to 15 ($M = 12.77$, $SD = 0.91$). Of the participants, 37.9% were in the sixth grade, 37.6% were in the seventh grade, and 24.5% were in the eighth grade. In terms of parental education level, 87.2% of the mothers and 78.6% of the fathers had completed a high school or below degree. Based on demographic information, the participants were mostly (86.9%) from low-to-middle income families. The majority (90.5%) of the participants came from intact families.

Measures

Parent-Classmate-Teacher Support In order to assess parent, classmate, and teacher support, the child and adolescent social support scale (CASSS; Malecki and Demaray 2003) was used. Parent, classmate, and teacher support subscales including 12 items each were administered in the present research. Items were responded on a 6-point Likert scale ranging from 1 (*never*) to 6 (*always*), with higher scores indicating a greater level of perceived social support from parents, classmates, and teachers. Previous research suggests that the CASSS is a valid and reliable instrument for the use with Turkish middle school students (Çırık et al. 2011). In the current study, the Cronbach's alpha coefficients were 0.90, 0.93, and 0.93 for parent, classmate, and teacher support subscales, respectively.

Mental Toughness Mental toughness was assessed with the mental toughness scale for adolescents (MTS-A; McGeown et al. 2018). The MTS-A was developed by McGeown et al. (2018) and revised by Turkish scholars (Soylu et al. 2019). The revised unidimensional 6-item Turkish version provided good reliability, construct, and criterion-related validity in middle and high school students. Recent research (e.g., Sağkal 2019; Sağkal and Özdemir 2019) has also provided evidence for the psychometric properties of the MTS-A in Turkish adolescents. An example item is “I am happy to try new and challenging tasks”. Participants responded all the items on a 4-point Likert scale ranging from 1 (*strongly disagree*) to 4 (*strongly agree*), with higher scores indicating higher levels of mental toughness. In the current study, Cronbach’s alpha for the MTS-A was 0.60.

School Mental Health School mental health was assessed with the 10-item psychological wellbeing and distress screener (PWDS; Renshaw and Bolognino 2017). It is a school-based bidimensional mental health screener for students. The PWDS consists of two subdimensions such that one assessing school psychological well-being and the other assessing school psychological distress. School well-being was measured with five items, such as “Thinking about last week, have you got on well at school?” and school distress was measured with five items, such as “Thinking about last week, have you felt sad?”. All the items were rated on a 5-point Likert scale, with higher scores indicating higher levels of psychological well-being and distress at school. Previous research suggests that the PWDS is a valid and reliable instrument for the use with Turkish adolescents (Renshaw and Arslan 2019). In the present study, Cronbach’s alpha coefficients for school well-being and distress were 0.82 and 0.75, respectively.

Procedure

The study was ethically and legally approved by the Aydın Provincial Directorate of National Education. In addition, full consent was obtained from the school administrators and teachers prior to conducting the surveys. Students were also informed of the nature of the research and their assent was taken. Voluntary and anonymous participation of the students were ensured. No incentives were offered for participation. The students completed the surveys in a 40-min class period. All the procedures were carried out in accordance with the American Psychological Association (APA) ethical guidelines.

Data Analysis

The SPSS 24.0 and AMOS 24.0 were used for data analyses. The data analysis was conducted in four steps: preliminary analyses, descriptive statistics, tests of

measurement, and structural models. In the first step, preliminary analyses were conducted and assumptions were tested. As Little’s MCAR test ($\chi^2 = 118.257$, $df = 116$, $p = 0.424$) demonstrated that the data were missing completely at random, two cases with missing values were removed. Three cases with univariate (with z scores exceeding ± 3.29) and three cases with multivariate outliers (Mahalanobis distance significant at $p < 0.001$) were eliminated from the data set, leaving a total of 351 participants for analysis (Tabachnick and Fidell 2007). Absolute values of skewness ranging from -1.458 to 1.437 (below 3) and absolute values of kurtosis ranging from -1.034 to 1.878 (below 10) indicated that the data has a univariate normal distribution (Kline 2011). However, as the multivariate kurtosis critical ratio was greater than 5.00 (multivariate kurtosis CR = 32.90), the data were multivariately non-normal (Byrne 2010). Thus, nonparametric bootstrapping procedure (with 5,000 bootstrap resamples and 95% confidence intervals) was used (Preacher and Hayes 2008). The Durbin-Watson value of 1.887, which is between 1.5 and 2.5, indicated that there is no autocorrelation problem in the data. The VIF values ranging from 1.20 to 1.52 (below 5.00), the tolerance values ranging from 0.66 to 0.84 (above 0.20), and the condition index value of 26.96 (below 30) were indicative of no multicollinearity issue. Since Harman’s single factor test indicated that the single factor explained 26.58% of the variance (below 50%), common method variance was not a problem in the present study (Podsakoff et al. 2003).

Following the preliminary analyses, descriptive statistics, including means, standard deviations, and reliability coefficients as well as the correlations among study variables, were calculated. Furthermore, the measurement model and structural model were assessed, respectively. Bootstrap analyses were performed to test the significance of the direct and indirect effects (via mental toughness) of parent-classmate-teacher support on early adolescents’ school mental health outcomes. The chi-square statistics, the root mean square error of approximation (RMSEA), and the comparative fit index (CFI) were used as fit indices. The RMSEA values below 0.08 and CFI values 0.90 and above were regarded as indicative of acceptable model fit (Marsh 2007).

Results

Descriptive Statistics

Table 1 presents the means, standard deviations, reliabilities, and bivariate correlations for all study variables. The correlations among parent, classmate, teacher support, mental toughness, school well-being, and school distress were all statistically significant at the 0.01 level. As expected, the participants

Table 1 Descriptive statistics and bivariate correlations for all study variables ($N = 351$)

	<i>M</i>	<i>SD</i>	α	1	2	3	4	5
Parent support	60.58	10.04	0.90					
Classmate support	50.71	13.77	0.93	0.37**				
Teacher support	59.23	11.65	0.93	0.43**	0.48**			
Mental toughness	18.01	2.86	0.60	0.38**	0.26**	0.15**		
School well-being	19.71	4.33	0.82	0.44**	0.46**	0.34**	0.42**	
School distress	9.77	4.34	0.75	-0.36**	-0.22**	-0.18**	-0.29**	-0.42**

** $p < 0.01$

who perceived more support from their parents, classmates, and teachers scored higher in mental toughness and school well-being, and lower in school distress. Moreover, students higher in mental toughness reported higher school well-being and lower school distress.

Measurement Model

In the present study, a confirmatory factor analysis was conducted to assess the overall fit of the measurement model with six latent factors (parent support, classmate support, teacher support, mental toughness, school well-being, and school distress) and 25 observed variables. Parent support, classmate support, and teacher support were indicated by three parcels each. Item-to-construct balance approach was used to create parcels for the parent-classmate-teacher support latent variables (Little et al. 2002). Mental toughness was represented by six items of the MTS-A. School well-being and school distress were each represented by five items from the PWDS. Findings provided evidence for the six-factor measurement model and yielded acceptable fit indices: χ^2 (260) = 678.600, $p < 0.001$, $\chi^2/df = 2.61$, CFI = 0.90, and RMSEA = 0.07 CI (0.06, 0.07). Factor loadings ranged from 0.80 to 0.89 for parent support, 0.89 to 0.92 for classmate support, 0.89 to 0.91 for teacher support, 0.18 to 0.71 for mental toughness, 0.57 to 0.82 for school well-being, and 0.39 to 0.80 for school distress, and they were all significantly different from zero at the $p < 0.01$ level (see Table 2).

Structural Model

We evaluated the fit of the structural model in which we tested the hypothesized links between parent support, classmate support, teacher support, mental toughness, school well-being, and school distress. More specifically, the model included the direct effects of parent, classmate, and teacher support on mental toughness and on school mental health and the indirect effects of parent, classmate, and teacher support on school mental health through mental toughness. The model involving the direct and indirect effects showed an acceptable fit to the

data: χ^2 (261) = 691.141, $p < 0.001$, $\chi^2/df = 2.65$, CFI = 0.90, and RMSEA = 0.07 CI (0.06, 0.08).

In the model, exogenous variables (parent support, classmate support, and teacher support) were positively and moderately correlated with each other ($p < 0.001$). The standardized regression weights showed that parental support was directly and positively associated with mental toughness ($\beta = 0.41$, $p < 0.001$), school well-being ($\beta = 0.19$, $p < 0.01$), and negatively linked with school distress ($\beta = -0.35$, $p < 0.001$). Classmate support was directly and positively associated with mental toughness ($\beta = 0.17$, $p < 0.05$) and school well-being ($\beta = 0.25$, $p < 0.001$). However, classmate support was not significantly associated with school distress ($\beta = -0.06$, $p > 0.05$). Teacher support was not significantly associated with mental toughness ($\beta = -0.10$, $p > 0.05$), school well-being ($\beta = 0.07$, $p > 0.05$), and school distress ($\beta = 0.04$, $p > 0.05$). Furthermore, mental toughness was significantly and positively associated with school well-being ($\beta = 0.42$, $p < 0.001$), but not linked to school distress ($\beta = -0.15$, $p > 0.05$). Parent-classmate-teacher support and mental toughness together explained 49% of the variance in school psychological well-being and 20% of the variance in school psychological distress.

The bootstrapping method (5000 resamples and 95% bias-corrected confidence intervals) was used to test significance of the indirect effects in the structural model (see Fig. 1.). The results indicated that the indirect effect of parental support on school well-being through mental toughness ($\beta = 0.17$, 95% CI (0.087, 0.314), $p < 0.001$) and the indirect effect of classmate support on school well-being through mental toughness were significant ($\beta = 0.07$, 95% CI (0.001, 0.18), $p < 0.05$). These findings demonstrate that greater parent and classmate support is linked to higher levels of mental toughness, which in turn is associated with higher levels of school well-being. However, the indirect effect of teacher support on school well-being ($\beta = -0.04$, 95% CI (-0.141, 0.035), $p > 0.05$) and the indirect effects of teacher ($\beta = 0.02$, 95% CI (-0.008, 0.100), $p > 0.05$), parent ($\beta = -0.06$, 95% CI (-0.206, 0.013), $p > 0.05$), and classmate support ($\beta = -0.03$, 95% CI (-0.121, 0.004), $p > 0.05$) on school distress were non-significant.

Table 2 Measurement model: unstandardized and standardized parameter estimates

	Unstandardized parameter estimates			Standardized parameter estimates
	Estimate	S.E.	C.R.	
Parcel 1 ← parent support	1.000			0.89***
Parcel 2 ← parent support	0.900	0.048	18.571	0.80***
Parcel 3 ← parent support	1.190	0.056	21.311	0.89***
Parcel 1 ← classmate support	1.000			0.90***
Parcel 2 ← classmate support	0.971	0.039	24.782	0.89***
Parcel 3 ← classmate support	0.988	0.038	25.956	0.92***
Parcel 1 ← teacher support	1.000			0.91***
Parcel 2 ← teacher support	0.914	0.036	25.055	0.89***
Parcel 3 ← teacher support	0.853	0.033	25.904	0.90***
MTS-A1 ← mental toughness	1.000			0.50***
MTS-A2 ← mental toughness	0.434	0.153	2.831	0.18**
MTS-A3 ← mental toughness	0.729	0.146	4.995	0.35***
MTS-A4 ← mental toughness	1.328	0.178	7.448	0.71***
MTS-A5 ← mental toughness	0.766	0.130	5.911	0.45***
MTS-A6 ← mental toughness	1.079	0.153	7.044	0.61***
PWDS1 ← school well-being	1.000			0.68***
PWDS2 ← school well-being	0.999	0.092	10.915	0.67***
PWDS3 ← school well-being	1.155	0.097	11.961	0.75***
PWDS4 ← school well-being	1.247	0.098	12.748	0.82***
PWDS5 ← school well-being	0.830	0.088	9.475	0.57***
PWDS6 ← school distress	1.000			0.42***
PWDS7 ← school distress	1.008	0.192	5.252	0.39***
PWDS8 ← school distress	1.641	0.244	6.719	0.64***
PWDS9 ← school distress	2.279	0.319	7.136	0.80***
PWDS10 ← school distress	1.897	0.269	7.041	0.75***

MTS-A mental toughness scale for adolescents, PWDS psychological wellbeing and distress screener

** $p < 0.01$, *** $p < 0.001$

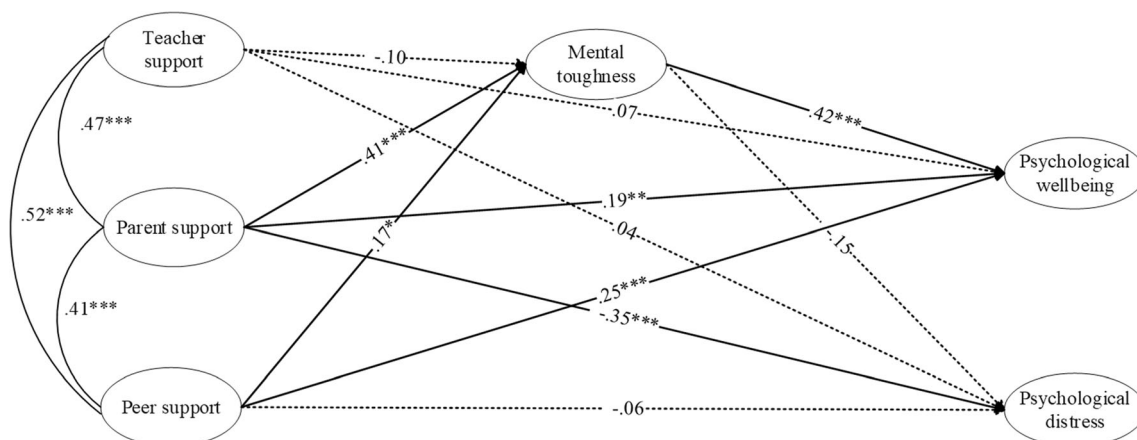


Fig. 1 The structural model ($N = 351$). Standardized regression weights are illustrated. In the model, significant paths are represented by solid line and non-significant paths are indicated by dashed line. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Discussion

In the present study, we examined a structural path model assessing relations between parent-classmate-teacher support, mental toughness, school well-being, and distress among a sample of Turkish middle school students. Findings indicate that only the direct paths from parent support to mental toughness and school mental health (school well-being and distress) and paths from classmate support to mental toughness and school well-being were significant. Furthermore, mental toughness mediated the association between parent support and school well-being as well as the association between classmate support and well-being at school. However, there were no direct and indirect effects of teacher support on school well-being and distress of middle school students. As the direct paths from parent support and classmate support to school well-being were both significant in magnitude, the indirect links seem to be partly mediated by mental toughness.

First of all, the direct effects of parent support on school well-being and distress demonstrate that early adolescents getting higher levels of parental support are likely to experience higher levels of school well-being and lower levels of school distress. The present findings are consistent with previous research indicating significant associations between parent support and school mental health outcomes (e.g., Jiang et al. 2013; Tian et al. 2013). According to Demaray et al. (2005), supportive behaviors from social network enhance the perceptions of being cared for, self-esteem, self-worth, and eventually improve personal functioning and decrease the risks of adverse outcomes. Scholars also argue that parents as primary providers of emotional, instrumental, informational, and appraisal support help adolescents perceive feelings of trust and love, satisfy basic needs, and get knowledge and feedback regarding personal and academic growth (Malecki and Demaray 2003). Thus, based on all these empirical findings and theoretical explanations, it would be expected that perceiving parents as supportive is associated with increased well-being and decreased distress in the school. In addition, in the interpretation of the present findings, it should be noted that although the importance of peer support seems to increase steadily throughout adolescence, evidence from longitudinal studies suggest that parental support is still a strong predictor of school well-being during middle school years (Jiang et al. 2013). Moreover, in the present study, we found that mental toughness mediates the association between parent support and school well-being. This finding suggests that middle school students perceived more parental support tend to possess higher levels of mental toughness, which in turn predicts higher well-being in school. The present finding is consistent with previous research which emphasizes the mediator role of self-system factors like self-esteem (Tian et al. 2013) and scholastic competence (Tian et al. 2015). Numerous studies have shown that students with higher mental toughness are

likely to report better school outcomes (Crust et al. 2014; St Clair-Thompson et al. 2015), peer relationships (St Clair-Thompson et al. 2015), and psychological well-being (Stamp et al. 2015). Finally, we have found that mental toughness was negatively associated with school distress, but the magnitude of this association did not reach statistical significance. Therefore, mental toughness did not mediate the relationship between parent support and school psychological distress. The present finding was not consistent with previous research indicating significant links between mental toughness and symptoms of depression, anxiety, and stress (e.g., Gerber et al. 2013; McGeown et al. 2018). In the present research, a significant link may have been missed due to sample size. Future research might investigate the robustness of this finding before coming to any firm conclusions.

Another important finding of the current study highlights that classmate support is directly and indirectly (through mental toughness) associated with school well-being. This finding suggests that early adolescents receiving greater classmate support are more likely to develop a higher level of mental toughness, which in turn is linked with greater levels of school well-being. The present finding is consistent with previous research results, which demonstrated that peer support is linked with higher levels of school well-being in elementary (Liu et al. 2016), middle (Jiang et al. 2013; Liu et al. 2016; Tian et al. 2015), and high school students (Liu et al. 2016; Tian et al. 2015). In addition, significant indirect effect detected in the present study was also consistent with previous findings highlighting the role of individual factors (e.g., scholastic competence, social acceptance, psychological need satisfaction) in the link between classmate support and school well-being (e.g., Tian et al. 2015; Tian et al. 2016). Compared with childhood, peer relationships become gradually salient in adolescence. Adolescents begin to spend more time with their peers, their interactions and relations grow, and largely meet their psychological needs in peer relationship contexts (e.g., Brown and Larson 2009; Levy-Tossman et al. 2007; Tian et al. 2016). Additionally, supportive peer context would help early adolescent students to cope with the demands of the school and make more positive judgments about the overall quality of school experiences (Connaughton et al. 2008; Gucciardi et al. 2009; McGeown et al. 2018). Therefore, supportive peer relationships that activate the perceptions of being cared for, valued, respected, validated, and supported may importantly contribute to personal and school well-being of early adolescent students.

Nevertheless, we did not find direct and indirect effects of teacher support on school mental health outcomes of middle school students. The present findings were inconsistent with the results of previous studies that reported a significant link between teacher support and students' school well-being (e.g., Jiang et al. 2013; Liu et al. 2016; Tian et al. 2013; Tian et al. 2015; Tian et al. 2016). Such a difference in findings of the

present study may be attributed to some of the characteristics in Turkey. It seems that the role of teacher support on school mental health outcomes of students differs across cultures and educational contexts. In Turkish education system, every year nearly one million students attend competitive high school entrance exam and approximately 130,000 (nearly 13%) of them would get a chance of accessing top-quality high schools. The top-quality high schools (academic-oriented high schools aimed at preparing students for undergraduate education) are seen as an important pathway of getting into good college and good job in Turkish community. Therefore, based on high demands from the society, teachers pay more attention to covering the national curriculum and increasing academic achievement rather than emotional, behavioral, and social adjustment of students. Instead of supporting the psychological needs of students, middle school teachers are likely to increase the degree of competition among students and use psychological and behavioral control over students in Turkey. Indeed, empirical findings from a Turkish meta-analysis study (Yalçın 2015) indicated that the role of teacher support on student well-being is modest compared with the effects of parent and peer social support. The other possible interpretation of the present findings might be also that in comparison with elementary school children, early adolescents are likely to begin to rely more on their classmates rather than teachers (Liu et al. 2016).

Although the present findings provide important contributions in understanding the pathways of early adolescent students' school mental health outcomes, there are some noteworthy limitations as well. First of all, the study was cross-sectional in design, and thus it is not possible to draw causal conclusions regarding the links between contextual factors (parent, classmate, and teacher support), individual mechanism (mental toughness), and school mental health outcomes (school well-being and distress). Secondly, using self-report data in the study would lead to social desirability bias. Therefore, future research may address this limitation by collecting the data from multiple informants (e.g., teachers, parents, and peers). Thirdly, recruiting sample from only one school district of western Turkey would perhaps limit the generalizability of the findings to diverse populations. Finally, as the links between social support (parent and peer support) and school well-being were partly mediated by mental toughness, there would be other potential individual mechanisms that may mediate these associations.

Despite these limitations, the present study has several important implications and conclusions for counselors, educators, and policymakers. The present findings improve the understanding of the contextual and individual factors on school well-being of early adolescent students. Particularly, we found that parental support as well as classmate support is linked with school well-being through the mechanism of attributes of mental toughness. The significant role of parental support

on increasing school well-being and decreasing school distress indicates that parental support is still a significant protector for school mental health. Therefore, counselors may pay more attention to conduct intervention and prevention studies improving supportive parent-child relationships. Furthermore, based on a significant direct link between classmate support and school well-being, counselors as well as teachers might be suggested to establish and support optimal peer relationships in the school and classroom context. Considering the finding that there are no direct and indirect links between teacher support and school mental health, future research would further investigate in-depth whether present findings are robustly replicated in diverse Turkish school settings. Lastly, based on the mediator role of mental toughness, school counselors may conduct mental toughness interventions to enhance coping skills as well as goal-directed behaviors of the middle school students. Indeed, scholars emphasize that school-based interventions altering students' affective states and promoting their skills and strengths may lead to school well-being (Seligman et al. 2009). Overall, the findings from the hypothesized model suggest that middle school students receiving parent and classmate support are more likely to experience higher school well-being, partly through mental toughness attributes. It is hopefully expected that providing early intervention studies promoting school-based social support and enhancing mental toughness attributes would help students to experience greater well-being in schools.

Compliance with Ethical Standards

All procedures performed in the study involving human participants were in accordance with the ethical standards of the institutional research committee (Aydın Provincial Directorate of National Education Review Board) and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards. Informed consent was obtained from all individual participants included in the study

Conflict of Interest The authors declare that they have no conflict of interest.

Ethical Statement The manuscript is not currently being considered for publication in another journal.

References

- Bond, L., Butler, H., Thomas, L., Carlin, J., Glover, S., Bowes, G., & Patton, G. (2007). Social and school connectedness in early secondary school as predictors of late teenage substance use, mental health, and academic outcomes. *Journal of Adolescent Health, 40*(4), 357–369. <https://doi.org/10.1016/j.jadohealth.2006.10.013>.
- Brown, B. B., & Larson, J. (2009). Peer relationships in adolescence. In R. M. Lerner, L. Steinberg, R. M. Lerner, & L. Steinberg (Eds.), *Handbook of adolescent psychology: contextual influences on adolescent development* (pp. 74–103). Hoboken: Wiley Inc..
- Byrne, B. M. (2010). *Structural equation modeling with AMOS: basic concepts, applications, and programming* (2nd ed.). New York: Routledge.

- Çırık, İ., Oktay, A., & Fer, S. (2011). Çocuk ve Ergenler İçin Sosyal Destek Ölçeği'nin Türkçe'ye uyarlanması. *e-Journal of New World Sciences Academy*, 6(1), 939–957.
- Clough, P. J., Earle, K., & Sewell, D. (2002). Mental toughness: the concept and its measurement. In I. Cockerill (Ed.), *Solutions in sport psychology* (pp. 32–43). London: Thomson.
- Connaughton, D., Wadey, R., Hanton, S., & Jones, G. (2008). The development and maintenance of mental toughness: perceptions of elite performers. *Journal of Sports Sciences*, 26(1), 83–95. <https://doi.org/10.1080/02640410701310958>.
- Crust, L., Earle, K., Perry, J., Earle, F., Clough, A., & Clough, P. J. (2014). Mental toughness in higher education: relationships with achievement and progression in first-year university sports students. *Personality and Individual Differences*, 69, 87–91. <https://doi.org/10.1016/j.paid.2014.05.016>.
- Demaray, M. K., & Malecki, C. K. (2002). The relationship between perceived social support and maladjustment for students at risk. *Psychology in the Schools*, 39(3), 305–316. <https://doi.org/10.1002/pits.10018>.
- Demaray, M. K., Malecki, C. K., Davidson, L. M., Hodgson, K. K., & Rebus, P. J. (2005). The relationship between social support and student adjustment: a longitudinal analysis. *Psychology in the Schools*, 42(7), 691–706. <https://doi.org/10.1002/pits.20120>.
- Dowdy, E., Furlong, M., Raines, T. C., Boverly, B., Kauffman, B., Kamphaus, R. W., Dever, B. V., Price, M., & Murdock, J. (2015). Enhancing school-based mental health services with a preventive and promotive approach to universal screening for complete mental health. *Journal of Educational and Psychological Consultation*, 25(2-3), 178–197. <https://doi.org/10.1080/10474412.2014.929951>.
- Gerber, M., Kalak, N., Lemola, S., Clough, P. J., Perry, J. L., Pühse, U., Elliot, C., Holsboer-Trachslers, E., & Brand, S. (2013). Are adolescents with high mental toughness levels more resilient against stress? *Stress and Health*, 29(2), 164–171. <https://doi.org/10.1002/smi.2447>.
- Greenspoon, P. J., & Saklofske, D. H. (2001). Toward an integration of subjective well-being and psychopathology. *Social Indicators Research*, 54(1), 81–108.
- Gucciardi, D. F., Gordon, S., Dimmock, J. A., & Mallett, C. J. (2009). Understanding the coach's role in the development of mental toughness: perspectives of elite Australian football coaches. *Journal of Sports Sciences*, 27(13), 1483–1496. <https://doi.org/10.1080/02640410903150475>.
- Jiang, X., Huebner, E. S., & Siddall, J. (2013). A short-term longitudinal study of differential sources of school-related social support and adolescents' school satisfaction. *Social Indicators Research*, 114(3), 1073–1086. <https://doi.org/10.1007/s11205-012-0190-x>.
- Kline, R. B. (2011). *Principles and practice of structural equation modeling* (3rd ed.). New York: The Guilford Press.
- Levy-Tossman, I., Kaplan, A., & Assor, A. (2007). Academic goal orientations, multiple goal profiles, and friendship intimacy among early adolescents. *Contemporary Educational Psychology*, 32(2), 231–252. <https://doi.org/10.1016/j.cedpsych.2006.06.001>.
- Little, T. D., Cunningham, W. A., Shahar, G., & Widaman, K. F. (2002). To parcel or not to parcel: exploring the question, weighing the merits. *Structural Equation Modeling*, 9(2), 151–173. https://doi.org/10.1207/S15328007SEM0902_1.
- Liu, W., Mei, J., Tian, L., & Huebner, E. S. (2016). Age and gender differences in the relation between school-related social support and subjective well-being in school among students. *Social Indicators Research*, 125(3), 1065–1083. <https://doi.org/10.1007/s11205-015-0873-1>.
- Malecki, C. K., & Demaray, M. K. (2003). What type of support do they need? Investigating student adjustment as related to emotional, informational, appraisal, and instrumental support. *School Psychology Quarterly*, 18(3), 231–252. <https://doi.org/10.1521/scpq.18.3.231.22576>.
- Marsh, H. W. (2007). Application of confirmatory factor analysis and structural equation modeling in sport/exercise psychology. In G. Tenenbaum & R. C. Eklund (Eds.), *Handbook of sport psychology* (3rd ed., pp. 774–798). Hoboken: Wiley.
- McGeown, S. P., St Clair-Thompson, H., & Clough, P. (2016). The study of non-cognitive attributes in education. Proposing the mental toughness framework. *Educational Review*, 68(1), 96–113. <https://doi.org/10.1080/00131911.2015.1008408>.
- McGeown, S., St Clair-Thompson, H., & Putwain, D. W. (2018). The development and validation of a Mental Toughness Scale for Adolescents. *Journal of Psychoeducational Assessment*, 36(2), 148–161. <https://doi.org/10.1177/0734282916673512>.
- Podsakoff, P. M., MacKenzie, S. B., Lee, J. Y., & Podsakoff, N. P. (2003). Common method biases in behavioral research: a critical review of the literature and recommended remedies. *Journal of Applied Psychology*, 88(5), 879–903. <https://doi.org/10.1037/0021-9010.88.5.879>.
- Preacher, K. J., & Hayes, A. F. (2008). Asymptotic and resampling strategies for assessing and comparing indirect effects in multiple mediator models. *Behavior Research Methods*, 40(3), 879–891. <https://doi.org/10.3758/BRM.40.3.879>.
- Renshaw, T. L., & Arslan, G. (2019). Testing the psychological wellbeing and distress screener with Turkish adolescents. *International Journal of School & Educational Psychology*, 7(3), 165–173. <https://doi.org/10.1080/21683603.2017.1414007>.
- Renshaw, T. L., & Bolognino, S. J. (2017). Psychometrics of the Psychological Wellbeing and Distress Screener: a brief measure of youths' bidimensional mental health. *Assessment for Effective Intervention*, 42(3), 160–167. <https://doi.org/10.1177/1534508416678970>.
- Renshaw, T. L., Eklund, K., Bolognino, S. J., & Adodo, I. (2016). Bidimensional emotional health in college students: a comparison of categorical and continuous analytic approaches. *Journal of Psychopathology & Behavioral Assessment*, 38, 681–694. <https://doi.org/10.1007/s10862-016-9558-6>.
- Sağkal, A. S. (2019). Direct and indirect effects of strength-based parenting on adolescents' school outcomes: exploring the role of mental toughness. *Journal of Adolescence*, 76, 20–29. <https://doi.org/10.1016/j.adolescence.2019.08.001>.
- Sağkal, A. S., & Özdemir, Y. (2019). Strength-based parenting and adolescents' psychological outcomes: the role of mental toughness. *Journal of Psychologists and Counsellors in Schools*, 29(2), 177–189. <https://doi.org/10.1017/jgc.2019.2>.
- Seligman, M. E., Ernst, R. M., Gillham, J., Reivich, K., & Linkins, M. (2009). Positive education: positive psychology and classroom interventions. *Oxford Review of Education*, 35(3), 293–311. <https://doi.org/10.1080/03054980902934563>.
- Soylu, Y., Sağkal, A. S., & Özdemir, Y. (2019). Mental toughness scale for adolescents: psychometric properties of Turkish long and short form. *Ege Journal of Education*, 20(1), 322–334. <https://doi.org/10.12984/egeefd.549515>.
- St Clair-Thompson, H., Bugler, M., Robinson, J., Clough, P., McGeown, S. P., & Perry, J. (2015). Mental toughness in education: exploring relationships with attainment, attendance, behaviour and peer relationships. *Educational Psychology*, 35(7), 886–907. <https://doi.org/10.1080/01443410.2014.895294>.
- Stamp, E., Crust, L., Swann, C., Perry, J., Clough, P., & Marchant, D. (2015). Relationships between mental toughness and psychological wellbeing in undergraduate students. *Personality and Individual Differences*, 75, 170–174. <https://doi.org/10.1016/j.paid.2014.11.038>.
- Suldo, S., Thalji, A., & Ferron, J. (2011). Longitudinal academic outcomes predicted by early adolescents' subjective well-being, psychopathology, and mental health status yielded from a dual factor model. *The Journal of Positive Psychology*, 6(1), 17–30. <https://doi.org/10.1080/17439760.2010.536774>.

- Suldo, S. M., Gormley, M. J., DuPaul, G. J., & Anderson-Butcher, D. (2014). The impact of school mental health on student and school-level academic outcomes: current status of the research and future directions. *School Mental Health, 6*(2), 84–98. <https://doi.org/10.1007/s12310-013-9116-2>.
- Tabachnick, B. G., & Fidell, L. S. (2007). *Using multivariate statistics* (5th ed.). Boston: Pearson Education, Inc..
- Tian, L., Liu, B., Huang, S., & Huebner, E. S. (2013). Perceived social support and school well-being among Chinese early and middle adolescents: the mediational role of self-esteem. *Social Indicators Research, 113*(3), 991–1008. <https://doi.org/10.1007/s11205-012-0123-8>.
- Tian, L., Zhao, J., & Huebner, E. S. (2015). School-related social support and subjective well-being in school among adolescents: the role of self-system factors. *Journal of Adolescence, 45*, 138–148. <https://doi.org/10.1016/j.adolescence.2015.09.003>.
- Tian, L., Tian, Q., & Huebner, E. S. (2016). School-related social support and adolescents' school-related subjective well-being: the mediating role of basic psychological needs satisfaction at school. *Social Indicators Research, 128*(1), 105–129. <https://doi.org/10.1007/s11205-015-1021-7>.
- Wu, P. (2017). The developmental trajectories of depressive symptoms in early adolescence: an examination of school-related factors. *Journal of Psychoeducational Assessment, 35*(8), 755–767. <https://doi.org/10.1177/0734282916660415>.
- Yalçın, İ. (2015). Relationships between well-being and social support: a meta analysis of studies conducted in Turkey. *Turkish Journal of Psychiatry, 26*(1), 21–32. <https://doi.org/10.5080/u7769>.

Publisher's Note Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.

Yağmur Soylu is a research assistant at the Department of Psychological Counseling and Guidance, Dokuz Eylül University, Turkey. Her research interests include psychological resilience, gender perceptions, school mental health intervention and prevention programs.

Ali Serdar Sağkal is an associate professor at the Department of Psychological Counseling and Guidance, Aydın Adnan Menderes University, Turkey. His main research interests include investigation of risks and protector factors linked to school mental health of students and conducting school-based prevention and intervention programs.

Yalçın Özdemir is a professor at the Department of Psychological Counseling and Guidance, Aydın Adnan Menderes University, Turkey. His main research interests include investigation of parent, peer, and teacher influences on psychosocial development of school children. He is the developer of the temperament-based intervention program for parents and teachers in Turkey.