

The Psychometric Properties of the Adlerian Courage Scale in a Sample of Turkish Adolescents

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ABSTRACT

Courage has received considerable attention in recent years. However, courage research has been limited due to a lack of appropriate measurement tools for adolescents. In this field, there is a measurement tool for courage from an Adlerian perspective for adults, but it is lacking for adolescents. Therefore, the present study aimed to examine the psychometric properties of the Adlerian Courage Scale – Adolescents Form within an adolescent sample in Türkiye. The scale was administered to 618 Turkish adolescents aged between 14-18. The confirmatory factor analysis results indicated that the scale's one-dimensional structure was confirmed with high factor loadings for the items. Additionally, the internal reliability coefficient ($\alpha = .93$) and test-retest reliability score (.95) illustrated that the items of the scale were reliable. Overall, considering reliability and validity results, the findings suggested that Adlerian Courage Scale – Adolescent Form is a valid and reliable measure to investigate the concept of courage in the context of positive psychology within the Turkish adolescent context.

Psychopathology-based approaches have drawn criticism in the latter half of the 20th century for failing to consider characteristics that improve people's lives, such as hope, courage, and optimism (Daniel, 2009). Many aspects of these approaches have been questioned by postmodern perspectives which take into consideration subjective realities, personal meanings, and interpretations (Sandage & Hill, 2001). This attention shift gave an impetus to positive psychology research in which individuals' strengths are the focal point rather than weaknesses (Seligman & Csikszentmihalyi, 2000; Seligman et al., 2005). Based on this emphasis, counselors have paid attention to their client's strengths to improve their daily functioning (Scheel et al., 2013; Niemiec & Pearce, 2021; Wong, 2006). Positive psychology literature posited that courage is an essential strength for individuals in their daily activities (Dahlsgaard et al., 2005). Consistent with its importance, courage has been regarded as a key component of the counseling process for children, adolescents, and families (Ergüner-Tekinalp & Işık, 2021).

The virtue of courage is defined as “emotional strengths that involve the exercise of will to accomplish goals in the face of external or internal opposition” (Peterson & Seligman, 2004, p. 29). The individual takes action based on awareness of the danger and a belief in the functionality of the result (Yang et al., 2009). Similarly, the Adlerian approach in the context of positive psychology considers courage as one of the character strengths which enables individuals to channel their energy for coping with life tasks (Adler, 2013). Accordingly, a courageous person is expected to have characteristics such as cognitive flexibility, adaptability to new changes, and the ability to develop alternative perspectives when faced with any problem (Dinkmeyer & Dreikurs, 2000; Yang et al., 2009).

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Despite the importance of courage, previous research has failed to consider courage from the perspective of the Adlerian approach. Rather, it is obvious that courage literature generally rests on the concept of fear-based courage (e.g., Pury et al., 2007; Woodard, 2004; Woodard & Pury, 2007). For instance, a well-known courage scale evaluates self-perceived courage which is defined as perseverance despite fear (see Norton & Weiss, 2009). Nevertheless, such a focus mainly ignored the multidimensional structure of courage (Howard & Alipour, 2014).

Another issue in courage research is a lack of emphasis on adolescents' courage. Courage, which motivates individuals to face difficulties (Wetterneck et al., 2013), enables them to have a more functional perspective regarding themselves and life (Hannah et al., 2007). There is a large volume of empirical research describing the critical role of courage in growth after stressful life events (Maddi, 2006a, 2006b). This aspect of courage explains the adolescents' ability in terms of managing their fears, their ability to cope with different challenging situations, and their motivation to reach their goals. Many recent studies (e.g., Chiesi et al., 2022; Grau et al., 2021; Hannah et al., 2007, 2010; Lodi et al., 2022; Maddi, 2004, 2006a) yielded that courage gives rise to psychological well-being and functioning effectively. Additionally, recent findings in Türkiye pointed out that there is a positive relationship between courage and resilience (Altıntaş, 2023; Üzbe-Atalay, 2019). Also, Altıntaş (2023) reported that courage is associated with self-compassion and prosocial behavior tendencies in adolescents. Overall, this line of research indicated that courage was found to be associated with the value of optimism, a sense of hope, growth, competence, creativity, social awareness, meaning, and purpose (Blagen & Yang, 2009; Bockorny & Youssef-Morgan, 2019; Dinkmeyer & Dreikurs, 2000).

Considering the significant role of courage as a protective factor for youth, little research has examined the predictors and outcomes of courage in adolescents. Besides, contrary to the traditional understanding of courage, there has been growing interest in the investigation of courage studies that contribute to resilience rather than fear-based courage. More recently, research is being conducted on the structure of courage which has a multidimensional nature (Woodard & Pury, 2007) and is believed to promote functionality within the context of positive psychology (e.g., Bowen, 2016; Chiesi et al., 2022; Lodi et al., 2022; Maddi, 2004, 2006a; Magnano et al., 2021; Üzbe-Atalay, 2019). Several studies of courage (Altıntaş, 2023; Bowen, 2016; Lodi et al., 2022; Magnano et al., 2021; Üzbe-Atalay, 2019) conclusively reported that courage acts as a protective factor for resilience and contributes to individuals' psychological well-being. Thus, through a comprehensive study of Adlerian courage that contributes to resiliency, a deeper understanding can be gained of how adolescents cope with challenging life experiences and achieve positive outcomes.

What this body of the literature points out that measurement tools for courage within the scope of positive psychology is limited. From the adolescent development perspective, focusing on adolescents' positive aspects and strengths has also been considered important, and studying positive concepts including courage has been encouraged among researchers (Chiesi et al., 2022). Given the absence of assessment tools specifically designed to measure courage among adolescents, the primary objective of this research was to adapt the Adlerian Courage Scale (ACS; Üzbe-Atalay, 2019) for use with adolescents and assess its psychometric characteristics in the context of Turkish adolescents. In line with this main objective, the following research questions were sought to be answered:

1. What is the factorial structure of the ACS - Adolescent Form?
2. Is the ACS - Adolescent Form is valid and reliable in the context of Turkish adolescents?

By accomplishing these goals, the study aims to adapt a scale that will enable researchers to investigate courage among adolescents in Türkiye.

Method

Participants

The inclusion criteria for this study is to be a high school student in private schools in Ankara. Convenience sampling was employed to reach out to participants. The data was collected in paper and pencil format between 2021 and 2022.

A total of 618 adolescents participated in the study voluntarily. To examine the factorial structure of the ACS - Adolescent Form with exploratory factor analysis and confirmatory factor analysis, the number of participants was randomly split into two groups. In the first group, the average age was found to be 16.73 ($SD = 1.19$), while in the second group, the average age was calculated as 16.22 ($SD = 1.33$). Table 1 displays the demographic characteristics of each group involved in the adaptation process of the ACS - Adolescent Form.

Table 1. Demographic Characteristics of the Participants

Variables		<i>N</i>	%	
1 st Group:	Gender	Female	143	56.5
		Male	110	43.5
EFA	Grade Level	9 th Grade	38	15.0
		10 th Grade	36	14.2
		11 th Grade	66	26.1
		12 th Grade	113	44.7
		Total	253	100.0
2 nd Group:	Gender	Female	198	54.3
		Male	167	45.8
CFA	Grade Level	9 th Grade	133	36.4
		10 th Grade	67	18.4
		11 th Grade	44	12.1
		12 th Grade	121	33.2
		Total	365	100.0

As shown in Table 1, the first group was examined using Exploratory Factor Analysis (EFA) to analyze the factor structure of the scale. This group comprised 253 students, with 143 females (56.5%) and 110 males (43%). Among the participants, 38 were in 9th Grade (15%), 36 were in 10th Grade (14.2%), 66 were in 11th Grade (26.1%), and 113 the remaining were in 12th Grade (44.7%). The second study group, consisting of 365 high school students, was subjected to confirmatory factor analysis (CFA) to assess the model fit indexes. Within this group, there were 198 females (54.3%) and 167 males (45.8%). The distribution of participants across different grades was as follows: 133 students were in 9th Grade (36.4%), 67 students were in 10th Grade (18.4%), 44 students were in 11th Grade (12.1%), and the remaining 121 students were in 12th Grade (33.2%).

Data Collection Tools

In addition to ACS - Adolescent Form, the Child and Adolescent Resilience Scale (Aydoğan et al., 2012) and the Social Interest Scale (Kaynak & Işık, 2022) were used to seek concurrent validity evidence.

Adlerian Courage Scale - Adolescent Form. The aim of this study was to adapt the ACS scale, originally developed by Üzbe-Atalay (2019) for use in adult samples, to be suitable for adolescent sampling. The procedure section explains how the items in the original scale were revised to be appropriate for the adolescent sample. Regarding validity and reliability, the original scale's information is provided as follows. The Adlerian Courage Scale (ACS) was developed in a multi-step process involving three study groups, with a total of 1,321 adult individuals (age range 18-55) participating in the scale development process (Üzbe-Atalay, 2019). In the EFA study, the 12-item single-factor courage structure showed a variance explained rate of 42.36%, with factor loadings ranging from .59 to .70. To assess the criterion validity of the scale, positive and significant relationships were observed between courage and the sub-dimensions of the psychological hardiness scale, such as self-commitment, control, and challenge. Moreover, a positive and significant relationship was found between courage and stress coping strategies, while a negative and significant relationship was found between courage and passive coping strategies. In the subsequent CFA study on a different group, the single-factor courage structure consisting of 12 items demonstrated good fit indices [$\chi^2 = 151.35$, $\chi^2/df = 2.80$, $df = 54$, $p = .000$, RMSEA = .006, GFI = .93, AGFI = .90, NFI = .98, CFI = .99, SRMR = .03]. In the CFA study, the 12-item single-factor courage structure showed a variance explained rate of 51.41%. The internal consistency coefficient for the single-factor scale was calculated as .87 for the EFA study group and .92 for the CFA study group. Regarding test-retest reliability, the correlation coefficient was found to be .81 for intervals of three weeks.

Child and Adolescent Resilience Scale. Child and Adolescent Resilience Scale was developed by Ungar and Liebenberg (2011), and Aydoğan et al., (2012) investigated its validity and reliability in Turkish. This scale which was developed to measure resilience consists of 28 items. The items included in the scale consist of 5-point Likert-type responses, where all items are rated on a scale of ("1 = *does not describe me at all*" to "5 = *describes me completely*"). In the original study, the reliability coefficient was calculated as .92 for the whole scale. Within the scope of this study, the internal consistency coefficient of the Child and Youth Resilience Scale was found to be adequate ($\alpha = .89$).

Social Interest Scale. The Social Interest Scale was developed by Kaynak and Işık (2022) for adolescents. This scale consists of 21 items and four subdimensions: belonging, sensitivity, coping, and helping. The scale was used with a Likert scale ranging from 1 (totally inappropriate) to 5 (totally appropriate). In the original study, Cronbach's α was .88 for the whole scale, .87 for the belonging, .77 for the sensitivity, .76 for the coping, and .67 for the helping subscale. As a result of the reliability analysis conducted within the scope of this study, the Cronbach's α coefficient was found to be .82 for the whole Social Interest Scale, .76 for the belonging subscale, .70 for sensitivity subscale, .70 for coping subscale and .66 for helping subscale.

Procedure

Initially, some items in Adlerian Courage Scale (Üzbe-Atalay, 2019) were modified for use with adolescents. Then, the modified items were presented to 8 experts from the field of Psychological Counselling and Guidance. These experts checked the items to see whether each item measured courage, comprehensibility, and appropriateness of the expressions for adolescents. After revising the items based on expert opinions, decisions were made regarding the response categories of the scale items. Next, regarding the clarity and suitability of the items for the adolescent age group, a focus group consisting of 10 adolescents was conducted, and their feedback and opinions were obtained. Accordingly, necessary adjustments were made to address any missing or unclear aspects of the items commended by adolescents.

Data Analysis

In the adaptation process, the researchers employed various statistical analyses, including Exploratory Factor Analysis (EFA), Confirmatory Factor Analysis (CFA) for validity. For reliability analysis, bivariate correlation and reliability analysis are employed in the two different study groups.

In the initial stage of the EFA analysis, the data from the first group was inputted into the SPSS 21 program, and the necessary procedures were carried out to address normality assumptions. To ensure data quality, several measures were taken, such as identifying missing data, examining extreme values, and assessing normality, linearity, and multicollinearity assumptions. Subsequently, construct validity, concurrent validity, and reliability coefficients were examined for this particular research group.

Using the second study group's data, CFA was conducted to determine the factor structure and model fit indices. Several fit indices, such as χ^2 , RMSEA, SRMR, TLI, and CFI, were examined. All statistical analyses were carried out using STATA software (Acock, 2013). In this study group, item analysis, internal consistency coefficients, and test-retest reliability were also calculated.

Results

In this section, findings on the validity and reliability of the ACS-Adolescent Form are presented in the form of construct validity (EFA and CFA), concurrent validity, convergent validity item analysis, and reliability studies (internal consistency and consistency over time).

Validity

Construct Validity: Exploratory Factor Analysis. In the initial phase of the ACS-Adolescent Form adaptation study, the principal component analysis technique, which is commonly used for factorization in EFA, was utilized. The data collected for the first study was assessed for its suitability for EFA using the Kaiser-Meyer-Olkin (KMO) coefficient and the Barlett Sphericity test (Pallant, 2001). The analysis revealed a KMO value of .93 and a significant result for Barlett's test ($\chi^2=1369.725$; $p < 0.00$). These findings confirmed that the dataset was appropriate for factor analysis. In the first EFA, it was observed that the scale's eigenvalue was

concentrated within a single factor greater than 1. This single-factor structure accounted for 50.48% of the variance explained by the scale. The factor loadings of the EFA result are presented in Table 2.

Table 2. Factor Loading Values of the ACS-Adolescent Form Items

Item No	Factor 1
I01	.687
I02	.743
I03	.604
I04	.725
I05	.745
I06	.731
I07	.726
I08	.729
I09	.680
I10	.709
I11	.756
I12	.676
Eigenvalue: 6.058	
Total Variance Explained: 50.482	

Table 3 demonstrated that the factor loadings of the items in the ACS-Adolescent form range from .604 to .756, and the variance explained by this single-factor structure is 50.48%.

Concurrent Validity. In order to establish the concurrent validity of the scale within the first study group, where EFA analysis was conducted, the Social Interest Scale (SIS) developed by Kaynak and Işık (2022), and the Child and Youth Resilience Scale (CYRS) developed by Aydoğan et al. (2012) were employed. Table 3 presents the correlation coefficients calculated between the total scores obtained from the scales in the concurrent validity study of the ACS, which utilized the CYRS and the SIS sub-scales of belonging, sensitivity, coping, and helping.

Table 3. Concurrent Validity Results

	1	2	3	4	5	6	7
1. Courage	1.00	.526**	.471**	.280**	.245**	.646**	.228**
2. Resilience		1.00	.690**	.570**	.440**	.477**	.413**
3. Social Interest Total			1.00	.807**	.635**	.658**	.679**
4. Belonging				1.00	.200**	.412**	.344**
5. Sensitivity					1.00	.266**	.491**
6. Coping						1.00	.269**
7. Helping							1.00

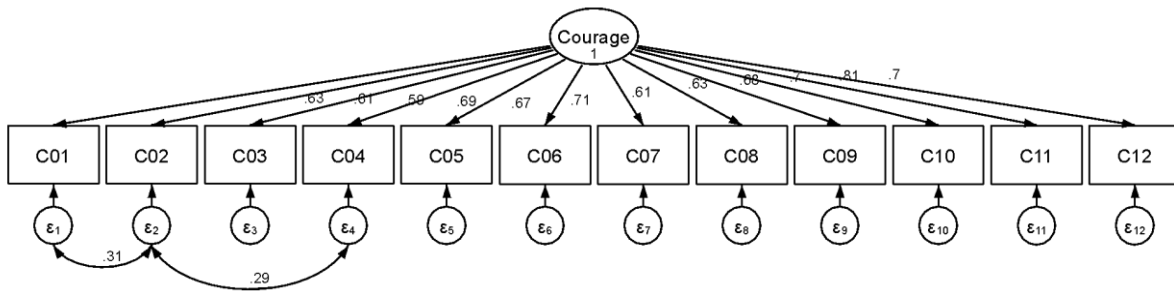
** $p < .001$

Table 3 shows that the concept of courage has positive and significant relationships with each sub-dimension of social interest: belonging ($r = .28, p < .001$), sensitivity ($r = .25, p < .001$), coping ($r = .65, p < .001$), helping ($r = .23, p < .001$), and total social interest score ($r = .47, p < .001$). In addition, it is observed that there is a positive and moderate relationship between courage and resilience ($r = .53, p < .001$).

Construct Validity: Confirmatory Factor Analysis. During the process of developing and adapting scales, CFA is often recommended as a technique within the framework of structural equation modeling. It is utilized to evaluate the validity of the structure derived from EFA when applied to a different sample (De Vellis, 2003; Kline, 2011; Tabachnick & Fidell, 2015).

In the first analysis performed without modification, the CFA results were found as [$\chi^2 = 251.577, df = 55, p = .00, \chi^2/df = 4.65$], CFI = .90, TLI = .87, RMSEA = .100, 90%CI[.08, 0.11], SRMR = 0.05. Two modifications were implemented as some modification index values fell within the acceptable fit criteria limits. The study presents the model fit index values from the CFA conducted on a separate research group in Table 4, along with the path diagram of the model depicted in Figure 1.

Figure 1. Path Diagram for the CFA of the ACS-Adolescent Form



The CFA results of the ACS-Adolescent Form are depicted in Figure 1. Based on the graphical structure derived from CFA, all items exhibit standardized load values above .61.

Table 4. Fit Indices for the CFA of the ACS-Adolescent Form

χ^2	df	TLI	CFI	SRMR	RMSEA
185.705	52	0.91	.93	0.047	0.080

Table 4 shows the goodness of fit values obtained as a result of the CFA of the ACS-Adolescent Form. According to these values, $\chi^2/ (df)= 3.57$ value less than 5, RMSEA value less than .08 and TLI and CFI values are above .90 can be considered as acceptable fit criteria scores (Marcoulides & Schumacher, 2001; Schermelleh-Engel et al., 2003).

Convergent Validity. AVE (Average Variance Extracted) and CR (Composite Reliability) are two important measures used in the context of SEM and CFA to assess the convergent validity and reliability of measurement scales. In this study, the AVE value calculated to provide evidence for convergent validity was found to be 0.45, while the CR value was found to be 0.94. The AVE value is recommended to exceed 0.5, and the CR value should be greater than 0.7 according to Hair et al. (2016). Significantly, the present research employed CR values because they are considered to be less stringent than AVE values, as noted by Malhotra and Dash (2011). Subsequently, the internal consistency coefficient was computed to assess the scale's reliability.

Item Analysis. In the process of developing or adopting scales, it is essential to conduct item analysis studies to determine the underlying psychological construct to which an item belongs, its association with other items, and the extent to which it fulfills its intended purpose (Erkuş, 2014). Within the first and second study groups, which involved both EFA and CFA analyses for item validity, item analyses were conducted on 12 items that constituted a single dimension determined through factor analysis. Item-total test correlations were calculated to assess the extent to which the selected items effectively measured the intended attribute. The findings are presented in Table 5.

Table 5. Item-Total Correlations for the ACS-Adolescent Form Items

Items		Item-Total Correlation	
EFA	CFA	EFA	CFA
I01	I01	.619	.628
I02	I02	.678	.629
I03	I03	.532	.561
I04	I04	.659	.681
I05	I05	.685	.651
I06	I06	.660	.656
I07	I07	.659	.576
I08	I08	.665	.594
I09	I09	.612	.645
I10	I10	.643	.654
I11	I11	.697	.756
I12	I12	.611	.643

Table 5 indicates that in the EFA study, the item-total correlation coefficients of the scale items varied between ($r = .53$) and ($r = .69$). In the CFA study, the item-total correlation coefficients varied between ($r = .56$) and ($r = .75$).

Reliability

Within this study, Cronbach's Alpha test was employed to assess internal consistency as part of the reliability analysis, which measures the extent to which the measured attribute is free from random errors. During the EFA study, the Cronbach's Alpha reliability coefficient for the 12-item single-factor scale was determined to be .91. Similarly, in the CFA study, the Cronbach's Alpha reliability coefficient was calculated as .90. For the test's test-retest reliability study, the Adlerian Courage Scale-Adolescent Form was administered to 16 high school students with a two-week interval, and the correlation coefficient between the two administrations was found to be .95. These scores illustrated that the scale was reliable for adolescents.

Discussion

The primary goal of this research was to adapt the Adlerian Courage Scale for adolescents and assess its psychometric characteristics. This study sought to emphasize and promote adolescents confronting challenges stemming from diverse life experiences while taking into account their strengths. It may shed light on these virtues, promoting a better understanding of how adolescents cope with various situations and grow stronger as individuals. The measurement instrument incorporates Adler's psychology approach and includes the traits associated with a courageous individual. The study confirmed the reliability and validity of this tool by employing a two-stage scale development process with significant participation. Consequently, based on the findings, it can be inferred that the ACS-Adolescent Form is a reliable and valid measurement tool for adolescents.

To assess the scale's construct validity, both exploratory and confirmatory factor analyses were employed. The EFA revealed a 12-item single-factor structure for the scale, and this structure was later confirmed by the CFA, which also indicated a good fit index for the model. Furthermore, the item validity study demonstrated that the ACS-Adolescent Form showed item-total correlations of .30 and above, suggesting its ability to effectively differentiate individuals based on the measured attribute (Nunnally & Bernstein, 1994). The reliability studies of the scale indicated high Cronbach's alpha values, indicating strong internal consistency among the scale items. Additionally, the test-retest reliability data demonstrated that the ACS-Adolescent Form maintains a high level of consistency over time.

In this study, the relationship between resilience and social interest was examined within the scope of criterion validity in line with the concept of courage. While the literature on courage within the Adlerian approach is limited, existing research has identified courage as a significant internal protective factor contributing to the development of resilience in both adolescents and adults (Altıntaş, 2023; Üzbe-Atalay, 2019). Coleman and Hagell (2007) pointed out that the majority of adolescents manage to cope effectively with adversities and potential risks, even amidst challenging transitions and negative experiences. When examining the attributes and experiences of adolescents who have triumphed over numerous difficulties, resilience is a prominent concept in the literature (Embury & Saklofske, 2014). In general, resilience, as defined by Masten et al. (1990), refers to the ability to adapt and thrive even when facing challenging and threatening situations. In this study, the presence of strong and positive correlations between the levels of resilience and courage among adolescents validates the concept of courage. Additionally, exploring this relationship and understanding the construct of courage could prove valuable in future research that focuses on adolescents facing potential risk factors.

The study found that the ACS-Adolescent Form has a positive relationship with all the sub-dimensions and total scores of social interest. According to Adler (1956), social interest encompasses the sense of community, the individual's interactions with others in society, cooperation within the community, and the individual's identification with others. Adler's perspective on courage is closely linked to his emphasis on social interest in his theory. He defines courage as a social attribute, emphasizing that it involves social functionality and should be present in individuals who perceive themselves as integral parts of society (Dinkmeyer & Dreikurs, 2000). The research findings align with the notion in the literature that courage is a crucial factor in fostering social

interest (Crandall,1980; Karcher & Lindwall, 2003; Manaster et al., 2003; Rareshide & Kern, 1991). Furthermore, the robust correlation between courage and coping, which represents one of the sub-dimensions of social interest, is consistent with the results obtained in the initial study that uncovered the structure of the courage concept (Üzbe-Atalay, 2019).

In summary, it can be affirmed that the ACS-Adolescent Form is a valid and reliable measurement tool appropriate for evaluating courage within the field of psychological counseling and guidance and related areas. The use of the concept of courage in research and practice can contribute to promoting the well-being and positive functioning of adolescents. Future studies should consider utilizing the concept of courage as a potential protective factor to facilitate adolescents' adaptation during their developmental stages. Especially for school counselors, the concept of courage can serve as an alternative approach to motivation. It enables them to assist students in exploring their strengths, fostering safe risk-taking abilities, social interest, and developing effective coping skills.

The above findings and conclusions should be interpreted with caution due to the following limitations. First, the findings may not be generalized to all adolescents as the convenience sampling method was used to recruit participants. Therefore, future studies should consider employing a wider and more representative sample to examine the reliability and validity of ACS-Adolescent Forms in Türkiye. Second, the ACS did not take into account the multidimensional aspect of courage in the current form. Subsequent studies may explore the multidimensional structure of courage in adolescents. Last, while the findings demonstrated significant correlations between the ACS-Adolescent Form and some related constructs, they did not provide evidence on the predictive role of courage within adolescent samples. Therefore, it is crucial to test the ACS-Adolescent Form's predictive role using structural equation modeling from the perspective of positive psychology in future studies. In conclusion, this scale is a useful tool that can be used in various research studies to understand and enhance adolescents in the light of positive psychology.

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