COGNITIVE DISTORTIONS, PSYCHOLOGICAL RESILIENCE, AND ADOLESCENT WELL-BEING: EXPLORING THE MEDIATING ROLE AND MODERATION BY SEX

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Article Info

Abstract

Abstract: The pursuit of happiness and psychological well-being has evolved from a historical focus on mental health issues to a contemporary emphasis on positive psychology. This paradigm shift towards studying human strengths and resilience led to the development of positive psychotherapy, integrating cognitive-behavioral techniques with positive interventions. This study explores the interconnectedness of cognitive distortions, psychological resilience, and subjective well-being within the context of adolescent development, a pivotal phase for identity formation and emotional regulation.

Adolescence is characterized by rapid changes, making stress and adversity management crucial for positive adjustment. Recent research suggests that positive psychology interventions can enhance resilience and well-being during this developmental stage. Employing a hypothetical model, this study investigates whether psychological resilience acts as a mediator between cognitive distortions and adolescent well-being. Additionally, the moderating role of sex in this relationship is examined. The hypothesis posits that psychological resilience partially mediates the connection between cognitive distortions and adolescent well-being.

1. Introduction

The pursuit of happiness and psychological well-being has been a central concern of humanity since ancient times. However, until the 1980s, mental health research was largely focused on studying psychological problems and the treatment of mental illnesses. The emergence of positive psychology in the late 1990s marked a significant shift in this approach, emphasizing the study of positive human traits and strengths that promote resilience and psychological well-being. Positive psychology emphasizes the importance of understanding not only what is

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wrong with individuals but also what is right with them and how they can leverage their strengths to live a fulfilling and meaningful life. This shift in focus led to the development of positive psychotherapy, which integrates the principles and techniques of cognitive-behavioral therapy with positive psychology interventions to promote well-being and resilience.

This study aims to examine the concepts of cognitive distortions, psychological resilience, and subjective well-being, which have been central to studies carried out in cognitive-behavioral and positive psychology research. The study examines the relationship between these concepts within the context of adolescence development, which is considered a critical period in terms of identity formation and emotional regulation.

Recent studies suggest that positive psychology interventions can promote resilience and well-being among adolescents. Adolescence is a period characterized by rapid physical, cognitive, and emotional changes, which can be stressful and challenging for young people. The ability to cope with stress and adversity is crucial for promoting positive adjustment and well-being during this developmental stage.

This study employs a hypothetical model to examine the relationship between cognitive distortions, psychological resilience, and subjective well-being in adolescents. Specifically, the study seeks to investigate whether psychological resilience mediates the relationship between cognitive distortions and adolescent well-being, and whether sex moderates this relationship. The study hypothesizes that psychological resilience will partially mediate the relationship between cognitive distortions and adolescent well-being.

2. Methodology

2.1. Research Model

In this research, the correlational research method, one of the quantitative research methods, was used. The hypothetical model of this study which was created to examine the mediating role of psychological resilience in the relationship between cognitive distortion and subjective well-being in adolescents, was examined using the "Structural Equation Model" through observed variables. Also, in the model was examined the question of how gender moderates the mediating mechanism across cognitive distortions, psychological resilience and adolescent well being. Psychological resilience was processed as a mediator, and gender was processed as a moderator.

2.2. Research Sample

The study participants took part in the study according to the appropriate sampling method. To meet the inclusion criteria for the research group, participants had to be year 10, 11, and 12 students. In contrast, year 9 students came within the exclusion criteria as they were still in the stages of adapting to school. Within the boundaries of this criterion the participants were chosen from schools within the province of Ereğli (Anadolu, Vocational and Standard High Schools). A total of 447 students partook in the study group whereby 51.90% were female ($n=$ 232), 48.10 % were male ($n=$ 215) adolescents. The age of the participants ranged between 15 and 18 years old.

2.3. Data Collection Tools and Procedure

The Cognitive Distortions Scale (CDS): Developed by Briere (2000), this scale consists of 5 sub dimensions, with 8 items per subdimension with a total of 40 items. It has a 5-type Likert rating scale with the subdimensions of "Self-Evaluations" (Negative- Low Sense of Self, Self-Criticism), "Self-Blame", "Helplessness", and "Preoccupation with Danger". The study of the Turkish adaptation of the scale (Sert Ağır & Yavuzer, 2018), the linguistic coefficient was reported as 0.73. In the same study, the test-retest and Cronbach alpha coefficients, respectively, were; .84 and .91 for self-awareness, .73 and .88 for self-blame, .81 and .83 for helplessness, .89 and .90 for hopelessness. Lastly, for the subdimension of preoccupation with danger, the results were .71 and .78, respectively. The Cronbach alpha values for our study were determined to be between .71 and .79, and .94 for its total.

The Psychological Resilience Scale- Short Form (PRS-S): The scale was developed by Smith et al. (2008) to measure people's potential to regain their mental health and psychological resilience. The scale was adapted to Turkish by Doğan (2015). Low points scored on the scale indicate a low level of psychological resilience, likewise, a high score indicates a high level of resilience. According to the exploratory factor analysis carried out in Doğan's (2015) adaptation study, the total variance was 54% for a single factored structure. The exploratory factor analysis results revealed that a single factored structure was valid. The factor loadings for the scale's items varied between .63 and .79. The scale's internal consistency coefficient was determined to be .83. In our study, the Cronbach Alpha co-efficient was determined as .75.

Adolescent Subjective Well-Being Scale (ASWBS): The scale was developed by Eryılmaz (2009) to measure the levels of satisfaction in the various areas of an adolescent's life and to determine their positive feelings. Satisfaction with family members, satisfaction with significant others, life satisfaction and positive feelings are the 4 subdimensions of the scale. The scale's structural validity factorial loads were between .63 and .79, with a 4 factored structure that revealed 61.64% of the total variance (Eryılmaz, 2009). The total of the items' correlations were between .40 and 69. The Cronbach alpha values for the subscales ranged from 0.66 to 0.83 for an overall value of 0.86, and based on the test-retest method, the validity value was reported as 0.83. The Cronbach's alpha values for our study, the scale of the subdimensions were found to be between .68 and .86 and .85 for the total value.

2.4. Data Analysis

While collecting the data, the necessary permissions were obtained, and the school-teachers were informed about the study. The data were collected with teachers' support by observing the participants' volunteers. After collecting the data set, it was examined whether it is appropriate to use the structural equation model within the framework of the test model. Firstly, within the scope of the research, it was examined whether there are extreme values that affect the normality of the distribution of the data set in terms of externally and internally traded variables. For this purpose, stem, and leaf (stem and leaf) graph, Mahalonobis and Cooks Distance values and Leverage values (Leverage Point) were examined, and it was deemed appropriate to remove 56 values from the data set. All statistical analyses were performed on the data set of the remaining 447 adolescents. The assumptions of parametric testing and structural equation analysis are provided, the data analyses performed within the framework of the hypothetical model are described below in stages.

The hypothetical model of this study, which was created to determine the effect of cognitive distortions on adolescent subjective well-being and the mediating role of psychological resilience, was tested using a structural equation model based on the application of implicit values. In this model, created as a mediator test, the internal variable of the study was adolescent subjective well-being (Y= predicted) cognitive distortions, an external variable (X =predictor). In contrast, psychological resilience is defined as the mediating variable (M). In the hypothetical model, cognitive distortion was defined as a dependent variable, with adolescent subjective well-being independent and psychological resilience as the mediating variable. All variables were defined as implied variables. Self-criticism, self-blame, helplessness, hopelessness, and preoccupation with danger comprise cognitive distortions. Subjective well-being comprises satisfaction with family members, significant other relationships, life satisfaction, and positive feelings. As psychological resilience does not have subdimensions, two subdimensions were created and defined due to parceling.
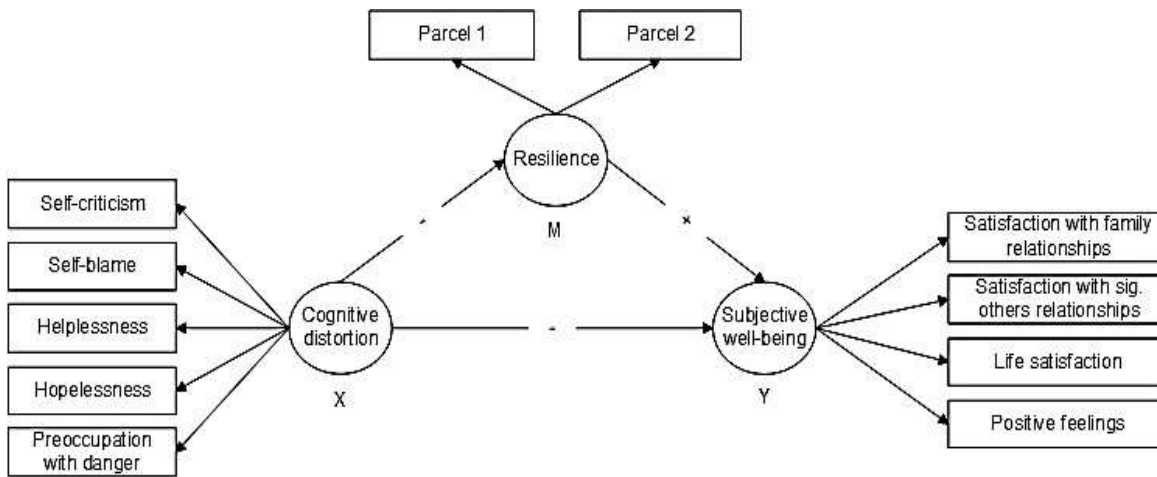
Figure 1. *Hypothesis Model of the Study*

A stepwise approach was taken in testing the study's hypothetical model. Before the implied variables used to create the model are examined with a structural equation model, the variables defined in the model have to be tested to determine if they were following the measurement model (Kline, 2016). Therefore, all of the variables of the study; entered as observed variables and data for the confirmatory factor analysis were tested. After the structural model the hypothetical model was tested. Firstly, the effect of the mediating variable was tested, then its effect was examined applying a moderated mediation model regarding the differences in levels for the different sexes wherein the Mplus 7.0 was used. In the structural and hypothetical models' tests the comparative fit index (CFI) values $\geq .90$ the root means square error of approximation (RMSEA) index of parsimony values $\leq .08$ were applied (Byrne, 2013; Tabachnick & Fidell, 2019). Furthermore, the Standard Chisquare difference test and CFI difference test (ΔCFI$\leq .002$) were used in the multiple model comparisons. The mediation and moderated mediation test analyses used boostrapped confidence intervals obtained from 5000 resamples. The lower and upper limits were accepted at 95% for bootstrapping. In preparation for the analysis of the data, SPSS 21.0 was used. With respect to the variables and extreme values that effect the normal distribution of the data, in addition to the stem and leaf graphs the data was examined using the Mahalonobis & Cooks Distance values and Leverage values.

2.5. Ethical

Firstly, I declared that the data set of the research was collected before 2018. And I confirmed that all the study procedures were conducted in compliance with the Helsinki Declaration. Voluntary participation, anonymity, and informed consent were ensured for all participants, and there was no experimental manipulation involved in the study.

3. Findings

A hypothetical model was developed in order to research the relations between cognitive distortions, adolescent subjective well-being and psychological resilience. The analyses carried out so as to test this model had three phases. The relationships between subjective well-being, which was processed as the study's dependent variable, and the independent variables of psychological resilience and cognitive distortions were examined in the first phase using correlation analysis and the internal consistency coefficients of the said variables, which were calculated using descriptive statistics and measurement tools. In the second phase, the model was first tested using a first -level measurement structure, estimating maximum likelihood. Finally, as a theoretically based hypothetical model in line with previous studies, it was examined using a structural equation model with maximum likelihood estimation. The findings concerning the analyses are presented below in detail.

3.1. Correlation Matrix, Descriptive Statistics and Internal Consistency Coefficients of the Variables

Firstly, the relations between the subdividisions of the CDS of Self Awareness (SA) Self Blame (SF), Helplessness (HE), Hopelessness (H), and Preoccupation with Danger (PWD) and Psychological Resilience Parcel 1 (PR1), Psychological Resilience Parcel 2 (PR2), and the subscales of Adolescent Subjective Well-Being Scale (ASWBS); Satisfaction with Family Relationships (SWFR), Satisfaction with Significant Others Relationships (SWSOR), Life Satisfaction (LS) and Positive Feelings (PF) were examined using correlation analysis and the findings presented in Table 1. The table also provides for the internal consistency coefficients and descriptive statistics.

Table 1. *Correlations, Descriptive Statistics and Internal Consistency Coefficients of the Variables*

Variables		1	2	3	4	5	6	7	8	9	10	11	$\bar{x}$	SD	α
Cognitive Distortions **X**	1.SA	-	,70	,70	,72	,66	-23	-.21	-,24	-,22	-,22	-,20	16.36	5,24	.78
	2.SF		-	,72	,59	,64	-.28	-.33	-,17	-,18	-,25	-,12	19.26	5,49	.79
	3.HE			-	,79	,70	.26	-.37	-,24	-,21	-,33	-,12	18.54	5,68	.73
	4.H				-	,72	-.25	-.29	-,20	-,15	-,21	-,14	16.31	6,25	.71
	5.PWD					-	-.21	-.27	-,17	-,19	-,19	-,11	17.36	5,31	.79
Psychological Resilience **M**	6.PS1						-	.67	.14	.14	.28	.16	13.79	2.66	.75
	7.PS2							-	.14	.15	.31	.24	12.93	2.51	.75
Adolescent Subjective Well-Being **Y**	8.SWFR								-	,48	,32	,33	14.52	1,86	.81
	9.SWSOR									-	,43	,37	13.38	2,34	.86
	10.LS										-	,28	8.29	2,25	.68
	11.PF											-	13.08	2,10	.78

The statistical relation between all the variables presented in the correlation table were found to be of significance. Bivariate correlations at and over .14 *p*≤ .01, and bivariate correlations at .13 and below were found to be of significance at p ≤ .05. As is evident in Table 1, the correlation coefficients between the subdimension of the Cognitive Distortions Scale and psychological resilience vary between -.25 and .36. There is significant negative relationship between all the variables. The correlation coefficients of the subdimensions of the CDS and sub-divisions of the ASWBS range between -.11 and -.33. These relations between these variables have been found to all be negative in nature. The correlation coefficients between the subdimensions of the ASWBS and the PRS vary positively between .14 and .33. The total score of the variables for bilateral relations are not prestented in the Table. Upon examination Cognitive Distortions relates to Psychological Resilience at a level of -.35, with Adolescent Subjective Well-Being at -.31, whereas Psychological Resilience relates to Adolescent Subjective Well-Being at a level of .27. When the shared variables in these bilateral relations are examined with their determining coefficients; the shared variable between Cognitive Distortions and Pscyhological Well-Being is 12

%, 10% between Cognitive Distortions and Adolescent Subjective WellBeing, and 7% between Psychological Resilience and Adolescent Subjective Well-Being. The internal consistency coefficients of the variables in the study were between 68 and .86.

3.2. Measurement Model

Before the structural equation analysis of the variables in the hypothetical model, the measurement tool's verification level was examined. When the measurement tool was examined in this study; the dependent, independent, and mediating variables were processed as implicit and their items as observed variables. A first-level confirmatory factor analysis was used to test the measurement model. The analysis also includes the relation between the implicit variables in the model. When the measurement tool was created, the total scores of the subscales of self-blame, helplessness, hopelessness, and preoccupation with danger, all of which constitute cognitive distortions' subdimension of self-awareness, were entered into the model as observed variables.

Similarly, the implicit variables for the implicit variable of adolescent subjective well-being, is the total score of the subscales for satisfaction with relationships, satisfaction with life, and positive feelings. When determining the observed variables for the implicit variable of psychological resilience, the item parceling method was applied. This method groups each item-total correlations of the scales' items in a balanced manner, and with the total points analysed as observed variables, it can potentially increase the level of representation of the implicit variables of foreseeable and observed variables (Bandalos & Finney, 2001). For the variable psychological resilience, the total of the six items that define it was calculated to determine the correlations, and then the items were distributed in a balanced manner into parcels. Confirmatory factor analysis was applied to the eleven variables defined for the measurement tool, created to test three implicit variables (cognitive distortions, adolescent subjective well-being, and psychological resilience). In the measurement model, the standardised t values between the implicit and observed values were examined, and all t values were found to be of significance at ($p \leq .05$). The findings of the analysis indicate that the measurement tool is sufficient based on the results of the fit indices ($\chi^2=177.982$, df=41, χ^2/df=4.34, CFI=.94, RMSEA=.08,).

3.3. Structural Model

Once the measurement model was analysed, to evaluate the theoretical model as a whole and examine both the direct and indirect effects of the variables, the structural equation model was applied. The hypothetical model set up for the mediator test went through a series of processes that were examined. First, whether cognitive distortions as an independent variablewere a significant predictor of the dependent variable adolescent subjective well-being (XY) was examined. Then the predictor level of Psychological Resilience (XM), the mediator variable, and the significance of the effect of the mediator variable of Psychological Resilience on Adolescent Subjective Well-Being (MY) were examined. Lastly, with the addition of the mediator variable, whether it leds to any changes in the path's effect as determined by Cognitive Distortions and Adolescent Well-Being was examined. This process was also applied to sex as a moderator variable. The findings of results of the analyses are presented in Figure 2.
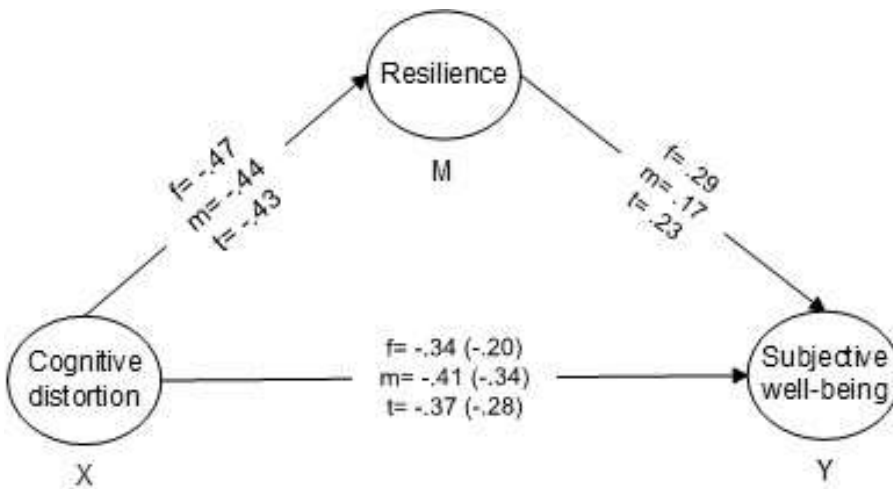
Figure 2. *Structural Model of the Theoretical Model*

The significance of the path between cognitive distortion (X) and subjective well-being (Y) was examined in examining the hypothetical model of the study. At this stage the direct effect was tested with the finding that amongst all participants (βtotal= -.37) there was a goodness of fit at a sufficient level ($\chi2$= 130.25, df= 26, $\chi2$/df= 5.00, CFI= .95, RMSEA= 0.08). The regulatory variable of sex with respect to both female (βfemale= -.34, $\chi2$= 118,94, p≤ .01) and male students (βmale= -.41, $\chi2$= 107,35, p≤ .01) was found to have good model compatibility ($\chi2$= 226,29, df= 66, $\chi2$/df= 3.42, CFI= .92, TLI= .92, RMSEA= 0.08). At this stage it was concluded that the cognitive distortion variable in male students ($R2$= .11), in comparison to female students ($R2$= .17) predicts subjective well-being at a much higher level ($\Delta\chi2$= 11.60, p≤ .05, AIC= 20.30, BIC= 20.48).

The path between cognitive distortion (X) and psychological resilience (M), for females (βfemale= -.47), males (βmale= -.44) and all participants (βtotal= -.43), is of statistical significance (p≤ .01). The path between psychological resilience (M) and subjective well-being (Y) for females (βfemale=.29), males (βmale= .17) and all participants is likewise of similar statistical significance (p≤ .01). At the final stage of the analyses when the resilience variable was added to the model, its effect on the standardised coefficient between cognitive distortion and subjective well-being was examined. According to the results, with the addition of the mediator variable the coefficient between cognitive distortion and subjective well-being decreased from -.37 to -.28 ($\chi2$= 178.52, df= 41, $\chi2$/df= 4.35, CFI= .94, TLI= .92, RMSEA= 0.07). When the importance of this indirect effect is examined using Bootstrap, it is clearly significant (95% CI= -.045, -.014). After the path mediator variable between cognitive distortion and subjective well-being was added, due to maintaining its importance, it was determined as a partial mediator variable of resilience. The presence of this indirect effect concerning the changes in sexes was examined using a mediated moderation test. With the mediator variable being added to the model, the coefficient between cognitive distortion and subjective well-being for females decreased from .34 to -.20 ($\chi2$= 144.09, p≤ .01) and with respect to the males from -.41 to -.34 ($\chi2$= 140.60, p≤ .01) ($\chi2$= 284.69, df= 98, $\chi2$/df= 2.91, CFI= .92, TLI= .91, RMSEA= 0.07). No difference was determined statistically in the hypothetical model between females and males ($\Delta\chi2$= 3.49, p≥ .05, AIC= 20.30, BIC= 20.48).

4. Conclusion and Discussion

This study aimed to examine the effect of psychological resilience as a moderated variable in terms of sex, with respect to the relationship between cognitive distortions and adolescent well-being. When studies on cognitive distortions and subjective well-being (Çelik & Odacı, 2013; Day & Maltby, 2003; Kaur et al. , 2018; Morrison et al., 2015; Yüksel & Bahadir-Yilmaz, 2019) and theoretical foundation (Fava & Tomba, 2009; Lightsey, 2006) are evaluated as a whole; whether it be in terms of positive mental health, positive psychology (Tugade &

Fredrickson, 2007; Hawthorne et al., 2019), or cognitive psychology (Azizi et al., 2010; Hofmann et al.,2013), it is evident that they focus on the regulation of feelings and thoughts. The focal point of studies on subjective well-being is that these regulations are conducted through optimism, hope, positive thoughts, and individual resources of strength, all fundamentals of positive psychology and psychotherapy (Rashid, 2015; Seligman & Csikszentmihalyi, 2000). However, in studies on psychological or stress-related problems, the focus is on cognitive distortions; thoughts that have no function, and pessimism. At this point, regulation based on negative cognition comes to the forefront (Edelman, 2007).

When the strengths of positive psychology and cognitive therapies and the emphases made in integration model studies are evaluated, there is a need to examine the relationship between happy and negative cognitive structures, and the mediating role of psychological resilience in coping with negative experiences. Recently, such combined and integrated approaches have gained momentum in the arena of mental health and wellbeing (Fava, 2016; Karwoski et al., 2006). In fact, when considering the World Health Organisation's (WHO, 2006) definition that health is not the absence of a physical or mental problem but a state of being that incorporates physical-mental and social well-being in its entirety, then the dynamics that contribute and block subjective well-being clearly indicate the need for all these states of being to be studied as a whole. Under the ambit of cognitive distortions, this study first examined subjective well-being and psychological resilience as indications of strength. The next step was to question whether the effect of psychological resilience as a mediator showed variability according to sex. Given that the level of psychological resilience varies according to gender in some research (Sun & Stewart, 2007) and that culture influences resilience (see Ungar, 2013), it was only natural to examine if this variable would make a difference in Turkish culture.

The study's findings confirmed that adolescent subjective well-being as a cognitive distortion and psychological resilience have a negative relationship. This situation is closely related to cognitive distortions and the automatic negative thoughts derived from anxiety, anger, unhappiness and similar emotions (Stallard, 2015). Findings of previous studies show that cognitive distortions and irrational thoughts are negatively related to subjective well-being (Day & Maltby, 2003; Morrison et al., 2015; Kaur et al., 2018). In the studies conducted on nurses by Yüksel and Bahadir-Yilmaz (2019), it was determined that cognitive distortions predict negative subjective well-being. An alternate report asserted that interpersonal cognitive distortions were negatively related to life satisfaction (Çelik & Odacı, 2013). It may be submitted that if cognitive distortions and early maladaptive schemas are considered an obstacle (Yalçın et al., 2018), the question of how depression may be overcome gains more weight than as to how happiness may be attained.

As is acknowledged, the state of depression is closely related to unhappiness. This clarifies why current depression therapies are more concerned with trying to ease and address negativities, instead of concentrating on positive resources (Chaplin, 2006). Alongside this, positive and negative emotions are independent structures and the absence of negative thoughts is not on par with the presence of positive emotions (Sin et al., 2011). As such, this highlights the importance of evaluating the effects of sources of strength on happiness and cognitive distortions to create a clearer picture. At this point, our study contextualised happiness as a positive emotion and examined whether resilience reduces the inhibitory role of cognitive distortions. This is because psychological resilience has a negative relationship with cognitive distortions on the one hand (elikkaleli & Kaya, 2016), and a positive relationship with happiness as a source of strength in the face of negative experiences (Karreman & Vingerhoets, 2012; Mak et al.,2011).When confronted with difficult life situations, cognitive distortions and the faulty information process automatically take over and prevent the situation from being seen from its positive aspects or having the potential to be overcome. This eventually results in the individual being unable to develop healthy coping mechanisms. The focus should thus be placed on the flexible application of psychological resilience as

cognitive ability (Parsons et al, 2016). s far as the relationship between psychological resilience and subjective well-being is concerned, it is believed that individuals with a high level of resilience are less affected by stressful life situations, making them more adaptable to changing life conditions and more likely to think positively about life, which has a positive effect on their happiness (He et al., 2013).Studies conducted by Çelik and Odacı (2013) have concluded that there is a positive relationship between adolescents' psychological resilience and their subjective well-being. The negative effect of cognitive distortions on subjective well-being and psychological resilience has been considered theoretically in psychological counseling applications (Fava & Tomba, 2009; Lightsey, 2006). In recent years, studies on the combination of cognitive therapy and ongoing well-being therapies have demonstrated that, compared to the exclusive use of cognitive therapies, well-being therapies in conjunction with CBT prevent relapses immediately after therapy while significantly boosting ps psychological well-being (Fava, 2016; Fava & Tomba, 2009) These well-being-focused studies aim to identify cognitive distortions and thoughts that negatively impact well-being.Furthermore they seek to restructure and ensure well-being by increasing psychological resilience (Fava, 2016). In fact, in our study, the negative relation between cognitive distortions and psychological resilience and the positive relation between happiness and psychological resilience are in line with literature and the findings resulting from the relevant variables used in the study.

The examination of the preventive factors on the path to happiness inconjunction with sources of strength, alongside the findings to our research question and study, has concluded that psychological resilience has a partial mediating role for both cognitive distortions and adolescent subjective well-being. Moreover, there was no difference in its effect concerning sex. The findings indicate that irrespective of sex, psychological resilience reduces the negative effect of cognitive distortions on the path to happiness. Thus, psychological well-being may be considered to protect subjective well-being from the negative effects of cognitive distortions. This finding regarding the effect of the mediator is in line with the theoretical conclusions of Dunn et al. (2008), in that medical students' well-being was affected by resilience in its capacity as a mediator. Lightsey (2006) supports the view that the clients' resilience levels will protect them from psychological and physiological damage for strength-based counseling. Moreover, it is consistent with Day and Maltby's (2003) finding that irrational beliefs reduce psychological well-being. The findings of all studies on mental health, whether preventative or treatment-based, including our own, have confirmed the significance of evaluating the positive and the negative as complementary components. This is attributed to the submission that well-being is not only the junction of positive and negative feelings but its core existence is based on preventive components and sources of strength. Indeed Wong (2011) asserted that it was possible to have a good life where there is a balance between the interaction of both positive and negative components. Wong further asserts that to live a happy life and attain well-being at an optimal level, one must know how to manage risk and balance the positive with the negative (p.71). The risk could be said to constitute difficult life conditions, while psychological resilience is the ability to gather strength when dealing with said risks. In other words, psychological resilience is closely related to how we weigh the risks we face.

In summary, the results of this study contribute to the literature because it reveals the importance of evaluating adolescents' mental health and happiness in a holistic way. In light of all the above and the effect of the current era they live in, adolescents must manage possible risks. Herein lies the importance of minimalizing cognitive distortions which negatively affect their subjective well-being and thus psychological resilience. As is known, when adolescence is evaluated as a developmental crisis period with the risk factors as reflected in research (Gizir, 2007; Karaırmak, 2006), numerous dynamics may affect their education and mental health. This study took a holistic approach to the basic concepts inherent in cognitive therapy and positive psychology, creating a hypothetical model to examine the effect of psychological resilience as a mediator in the relationship between cognitive distortions and subjective well-being in adolescents. It is submitted that the findings of this study will

contribute to guidance and psychological counselling programmes aimed at adolescents, and that the model will help shape their education and learning experience from a more holistic perspective.

5. Limitations and Recommendations

This study's main limitation is examining the mediation effect through resilience as a single data set. On the other hand, our main research finding is that psychological resilience partially mediates the relationship between cognitive distortions and adolescent subjective well-being. Moreover, there was no difference in its effect concerning sex. The findings indicate that irrespective of sex, psychological resilience reduces the negative affect of cognitive distortions on the path to happiness. So, considering this limitation and the main finding of the study together, it can be suggested that protective factors (hope, optimism, etc.) similar to psychological resilience should be addressed within the framework of diversity in future studies. For this reason, it is suggested to evaluate adolescent subjective well-being with risk and protective factors for future research. On the other hand, it may also be recommended to prepararing group-based psychological counseling and psycho-education programs that address the association of cognitive therapy and positive psychology in an integrative approach and to test them by experimental method.

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Declarations

Conflict of interest: I declared no potential conflicts of interest concerning the research, authorship, and/or publication of this article.

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