

The mediating effect of self-compassion and cognitive emotion regulation on the relationship between tolerance and social appearance anxiety in adolescents

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Title Page

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Running head: Social Appearance Anxiety, Cognitive Emotion Regulation, Tolerance, Self-Compassion

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The Mediating Effect of Self-Compassion and Cognitive Emotion Regulation on the Relationship Between Tolerance and Social Appearance Anxiety in Adolescents

Abstract

The aim of this study is to examine the effect of tolerance on social appearance anxiety and to test the roles of emotion regulation and self-compassion as mediating psychological mechanisms in this relationship. The sample of the study consists of 647 adolescent individuals living in Turkey. The Personal Information Form, Cognitive Emotion Regulation Questionnaire, Tolerance Scale, Self-Compassion Scale - Short Form, and Social Appearance Anxiety Scale were used in the study. Data were collected online using convenience sampling methods. Pearson correlation analysis was used to determine the relationships between the variables in the study, while regression-based mediation analysis (Process macro model 81) was used to test the mediation model examined in the study. Upon examining the findings, tolerance was positively correlated with self-compassion ($r = 0.323, p < .001$) and adaptive cognitive emotion regulation ($r = 0.200, p < .001$); while tolerance was negatively and statistically significantly related to maladaptive cognitive emotion regulation ($r = -0.250, p < .001$) and social appearance anxiety ($r = -0.229, p < .001$). Additionally, a positive correlation was found between self-compassion and adaptive cognitive emotion regulation ($r = 0.358, p < .001$); and negative and statistically significant relationships between self-compassion and maladaptive cognitive emotion regulation ($r = -0.576, p < .001$) and social appearance anxiety ($r = -0.530, p < .001$). Finally, a statistically significant negative relationship was found between social appearance anxiety and adaptive cognitive emotion regulation ($r = -0.219, p < .001$); and a statistically significant positive relationship was found between social appearance anxiety and maladaptive cognitive emotion regulation ($r = 0.484, p < .001$). The mediation analysis, tested with 10,000 bootstrap

samples at a 95% confidence interval, revealed that emotion regulation dimensions and self-compassion have a full mediating effect. The findings indicate that the tolerance factor reduces social appearance anxiety not only directly but also indirectly through emotion regulation and self-compassion. In line with these findings, it was concluded that individuals with high tolerance levels need to be supported not only through mindfulness programs but also through emotion regulation and self-compassion levels.

Keywords: Self-compassion, cognitive emotion regulation, tolerance, social appearance anxiety, serial mediation

Introduction

Every individual is social by nature. Therefore, individuals create a life together through the social relationships they establish with others. In this process, individuals carry out all their steps and experiences with their bodies, both towards others and towards life itself. For example, starting a family, filling the classrooms of a school, voting, migrating, or even the smallest behavior inevitably involves the body in some way. Consequently, individuals interact with other people and social structures through their bodies. As Polat and Çiftçi [1] state, the first source of information about a person for others is how their body looks. In this sense, appearance acts as a personal billboard and emerges as a decisive factor in interpersonal relationships. However, these relationships are not always smooth. For some, the body can be a problem or a bad advertisement in certain situations. More precisely, individuals may perceive it as such. This is where body and social appearance anxiety fundamentally manifests itself. Social appearance anxiety occurs when individuals with a negative body image cannot control their negative thoughts about their appearance [1-2].

Social appearance anxiety

In general terms, social appearance anxiety is the anxiety and tension people experience when their physical appearance is evaluated by others

[3]. In other words, social appearance anxiety can be defined as the unease and anxiety that arises when an individual's external appearance is evaluated or criticized by others. Social appearance anxiety is a general and comprehensive anxiety experienced by individuals regarding negative evaluations of their height, weight, facial shape, clothing style, etc. [4]. Viewed in this way, social appearance anxiety can be divided into two categories. The first is dissatisfaction with one's social appearance. The second is the individual's belief that their social environment will also find their body unattractive. The individual experiences anxiety in both cases [5]. From this perspective, certain developments can be observed in individuals experiencing social appearance anxiety. The main ones can be listed as follows: some obsessive and compulsive symptoms such as frequently looking in the mirror, eating disorders, the need to constantly monitor the body, constantly comparing oneself to other people, avoiding social environments, developing colder and more distant behaviors, pessimism, symptoms of depression and anxiety, increased negative evaluation of the body in states of heightened anxiety, and academic and professional failure [1, 4-6]. It is important to examine the variables that influence a concept with such destructive effects. An individual judging themselves based on their appearance and treating themselves harshly brings to mind the concept of tolerance. For this reason, tolerance has been included as a variable in the research.

Tolerance

The concept of tolerance, defined as being understanding of differences, overlooking faults, being forgiving, and accepting people as they are [7], can be considered a component of establishing positive relationships. Corneo and Jeanne [8] defines tolerance as a skill that creates positive feelings in individuals, enables the establishment of positive relationships, and allows for empathy. It can be said that tolerance is a valuable behavior in establishing social peace at the micro level between individuals and at the macro level in society. Indeed, it is stated that tolerance is a virtue that elevates humans and is one of the beautiful aspects of humanity [9]. Kiye

[10] describes tolerance as a way of thinking and feeling that brings peace to humans. Based on all this information, it can be said that a person with a high level of tolerance will establish good relationships with other people. The concept of tolerance can generally be thought of as a concept related to relationships with others. Based on the question of how a person who is tolerant towards others will relate to themselves, self-compassion, which is the compassion an individual shows towards themselves, has been included in the research as a variable.

Self-compassion

Self-compassion, one of the key concepts in positive psychology, is defined as directing compassionate attitudes toward oneself [11]. Neff [12] defines self-compassion as being kind and understanding toward oneself when experiencing inadequacy, sadness, pain, and failure, accepting negative emotions and knowing that they are part of being human. One of the basic principles of self-compassion is believing that one deserves compassion both for oneself and for others [1]. For an individual to reach this conviction, they must confront certain realities, alleviate or eliminate their concerns about them, or not feel them. One of these realities is the evaluations one holds about the appearance and characteristics of the body. Indeed, many studies examining the relationship between social appearance anxiety and self-compassion support this. For example, a study conducted by Nightingale and Cassin [13] found that high levels of body respect are associated with high levels of self-compassion. Another study conducted by Modica [14] also concluded that self-compassion is significantly related to body respect. A similar conclusion was reached in another study by Carbonneau et al. [15], which found significant relationships between self-compassion, body respect, and eating behaviors. Therefore, approaching oneself with compassion despite one's current flaws leads to feeling more positive emotions toward one's body, which in turn increases body respect. Furthermore, self-compassion negatively predicts social appearance anxiety [1]. It is possible to say that an individual's level of tolerance and self-compassion also affects how they

view and interpret events. Gün et al. [16] report that individuals with high levels of self-compassion are able to approach themselves more positively as a result of their mistakes, which can positively affect their emotion regulation skills. Based on this, cognitive emotion regulation has also been included as a variable in the study.

Cognitive emotion regulation

Cognitive emotion regulation is a concept that corresponds to the process of recognizing, evaluating, and modifying the emotions experienced by an individual [17]. It has been reported that cognitive emotion regulation, which contributes to an individual's ability to recognize, regulate, and control their emotions during or after a negative event [18], is related to coping skills [19]. In other words, it provides skills for people who do not know what to do with their emotions to recognize and regulate them [20-21]. Positive and negative emotions felt about events or situations are addressed within a cognitive-focused process [18, 22]. Cognitive emotion regulation skills are addressed in two main categories: adaptive and maladaptive. There are nine skills in total under these two subheadings. Compatible cognitive emotion regulation skills include positive reframing, acceptance, positive reappraisal, refocusing on the plan, and perspective taking. Dysfunctional cognitive emotion regulation skills include: destruction, focusing on thoughts, self-blame, and blaming others. It is stated that individuals' use of adaptive skills increases their psychological and social functioning, while dysfunctional skills lead to psychological and social problems [23-24]. Martin and Dahlen [25] state that maladaptive skills facilitate the formation of negative emotions. This suggests that cognitive emotion regulation skills may be effective in reducing social appearance anxiety. Furthermore, the ability to blame oneself and others, which falls under the heading of maladaptive skills, necessitates examining the effect of tolerance and self-compassion on cognitive emotion regulation.

The relationships between cognitive emotion regulation, self-compassion, tolerance, and social appearance anxiety

This research was designed based on the broaden-and-build theory [26] proposed in the field of positive psychology. The theory posits that positive emotions can broaden individuals' cognitive resources and increase their social and psychological resilience [27]. Positive emotions broaden individuals' repertoire of thoughts and actions, and this expansion can also increase the individual's ability to cope with difficulties [26]. Negative emotions, on the other hand, generally trigger a fight-or-flight response, directing the individual toward survival in a narrow perspective [28]. In summary, the theory emphasizes that positive emotions can develop long-term psychological resources by expanding an individual's repertoire of thoughts and behaviors. The starting point of this research is the idea that tolerance and self-compassion, which are the independent variables of this study, can support positive emotions, that this situation can also be effective on cognitive emotion regulation, and that it can be effective on the dependent variable, social appearance anxiety.

The dependent variable of this study, social appearance anxiety, is the intense worry an individual feels about how others evaluate their physical appearance, and it can manifest intensely during adolescence [3]. Tolerance, one of the independent variables of the study, is a concept that supports being more accepting and flexible towards both oneself and others. In this sense, it can have a reducing effect on social appearance anxiety that may arise by softening the process in terms of external evaluations or social comparisons. From a theoretical perspective, tolerance supports positive emotions, which broadens one's perspective. Another independent variable in the study, self-compassion, is, in its simplest form, a trait that supports an individual's understanding approach to themselves and accepting their flaws or negative characteristics as natural [29]. It can be said that high self-compassion will have a positive effect on social appearance anxiety by enabling the individual to accept themselves as they are. Research findings supporting this view are available in the literature [30]. From a theoretical perspective, it can be said that a positive trait such as self-compassion will increase positive affect, which in turn will support cognitive flexibility and enable more

adaptive responses to social evaluations [31]. Another independent variable, cognitive emotion regulation skills, can be defined as the individual's ability to manage their emotional experiences through cognitive processes. It can be said that the individual's increased use of positive skills (such as accepting strategies) will be effective in reducing social appearance anxiety. Garnefski and Kraaij [32] report that poor emotion regulation is a risk factor for anxiety, depression, and stress. There are research findings indicating a relationship between emotion regulation and social anxiety [33]. Due to the high risk involved, social anxiety is a frequently discussed topic among adolescents [34].

The changing perception of beauty and increased visibility due to the proliferation of social media tools have made people more susceptible to being judged based on their appearance. This situation has made social appearance anxiety a significant problem. Identifying the factors that influence social appearance anxiety is important for preventive and remedial efforts. According to the expansion and development theory on which the research is based, positive emotions provide individuals with support in terms of attention, thought, and behavior. In other words, as positive emotions in an individual increase, their ability to cope with negative emotions increases, and self-compassion and cognitive skills are supported. Based on this information, tolerance, self-compassion, and cognitive emotion regulation skills were included in the study as variables.

The literature contains studies supporting these ideas. Neff and McGehee [35] reported that tolerant individuals treat themselves with more compassion. Kamalinasab and Mohammedkhani [36], on the other hand, concluded from their research that adaptive skills are positively related to self-compassion, while maladaptive skills are negatively related. Cash and Fleming [37] point out that appearance anxiety is related to emotion regulation skills. In addition, there are research findings indicating that psychological factors are related to physical health [38] and that psychological well-being is related to cognitive self-evaluations [39]. The

aim of this study is to reveal the effect of these variables on social appearance anxiety through serial mediation analyses. No research has been found in the literature that addresses these variables together. Tolerance, self-compassion, and cognitive emotion regulation skills are developable characteristics. It is thought that revealing the relationship between these variables and social appearance anxiety will contribute to intervention studies, experimental studies, and preventive studies. In line with this objective, the following hypotheses will be tested.

H1: Tolerance is negatively related to social appearance anxiety.

H2: Self-compassion plays a mediating role in the relationship between tolerance and social appearance anxiety.

H3: Cognitive emotion regulation plays a mediating role in the relationship between tolerance and social appearance anxiety.

H4: Self-compassion and cognitive emotion regulation play sequential mediating roles in the relationship between tolerance and social appearance anxiety.

Material Metod

Study design

Our study was conducted using a cross-sectional research design, utilizing data collected from adolescents living in the provinces of Trabzon, Rize, Bayburt, Gümüşhane, Artvin, and Erzurum in Turkey between November 2025 and December 2025. This study was approved by the Ethics Committee of the Faculty of Social and Human Sciences at Gümüşhane University (decision no. 2025/8 dated October 30, 2025, document no.: E-95674917-108.99-379886). Participants were informed about the purpose and content of the study, and consent was obtained online. The study was conducted in accordance with the Helsinki Declaration.

Participants

Power analysis was used to calculate the sample size for the study. For this purpose, the “a priori analysis” feature of the *G*Power 3.1* software was

used [40]. For regression analysis, four predictor variables, a 0.05 Alpha level, a power ratio ($1-\beta$) of 0.85, and a medium effect size ($f^2 = 0.15$) were selected, and it was determined that the sample size should be 95 individuals [41]. After determining the sample size, the inclusion and exclusion criteria for participants were established. The inclusion criteria for the study were defined as being an adolescent, literate, willing to participate in the study, and having no communication problems. The exclusion criteria covered individuals who did not meet the specified inclusion criteria. Taking the current criteria into account, data collection began, and 647 adolescents were reached using an appropriate sampling method. It can be said that conducting the study with 647 individuals provides evidence that the sample size is sufficient. The majority of participants were female (63.8%) and of middle socioeconomic status (41.9%). Detailed demographic characteristics of the participants are provided in Table 1.

Table 1. Demographic characteristics of participants in study

Variable	n	%
<i>Gender</i>		
Female	413	63.83
Male	234	36.17
<i>Social Economic Level</i>		
Low	257	39.72
Middle	271	41.89
High	119	18.39
<i>Old</i>	<i>Mean</i>	16.45
Min-max=14-19	<i>SD</i>	1.49

Data Collection Process

Permission was obtained from the ethics committee of Gümüşhane University in order to conduct the research. Permission to use the tools used in the research was obtained from the relevant researchers. After the necessary permissions were obtained, the measurement tools were converted into an online form. The prepared form first included an informed consent form containing detailed information about the research. Subsequently, the personal information form, Cognitive Emotion

Regulation Questionnaire, The Tolerance Scale, Self-Compassion Scale – Short Form, and Social Appearance Anxiety Scale were included. Participants completed the data collection form in approximately 15 minutes.

Data Collection Tools

Personal Information Form

Developed by the researchers, it consists of questions about participants' gender, age, and socioeconomic status.

Tolerance Scale

The Tolerance Scale is a 6-item measure developed by Demirci [42] to assess individuals' tolerance levels. The scale is calculated as a single dimension. It is scored using a 5-point Likert scale (1-Not at all applicable to me, 5-Completely applicable to me). The scale's Cronbach's alpha internal consistency coefficient is 0.72, and its test-retest reliability coefficient is 0.79 [43]. The fit index values obtained as a result of the confirmatory factor analysis applied to validate the structure of the Tolerance Scale within the scope of the current study revealed that the scale's fit values were quite good ($\chi^2 = 20.64$, $df=8$, $CFI = 0.99$, $NFI = 0.98$, $NNFI = 0.98$, $SRMR = 0.030$, and $RMSEA = 0.049$). The factor loadings of the scale items were also found to be in the range of 0.46 to 0.66. Reliability analyses performed on the data obtained in this study resulted in a Cronbach's alpha coefficient of $\alpha = 0.74$.

Cognitive Emotion Regulation Questionnaire

The Cognitive Emotion Regulation Scale was developed by Garnefski et al. [18]. The scale was adapted into Turkish by Onat and Otrar [20]. The scale consists of 36 items and is used to measure cognitive emotion regulation skills. The instrument is a 5-point Likert scale (1 = almost never, 5 = almost always). The scale has two main dimensions, adaptive cognitive emotion regulation and maladaptive cognitive emotion regulation, and consists of 9 subscales. The adaptive cognitive emotion regulation dimension consists of the following sub-dimensions: acceptance, positive refocusing,

refocusing on the plan, positive reappraisal, and perspective taking. The maladaptive cognitive emotion regulation dimension consists of the following subdimensions: self-blaming, rumination, destruction, and blaming others. In this study, instead of evaluating the nine subdimensions of cognitive emotion regulation separately, adaptive and maladaptive cognitive emotion regulation will be used as two main dimensions. In the study by Onat and Otrar [20], the Cronbach's alpha values of the scale's subdimensions ranged from 0.43 to 0.72 (Acceptance, 0.56; positive reappraisal, 0.66; positive refocusing, 0.43; refocusing on the plan, 0.69; perspective placement, 0.51; self-blame, 0.56; thought focus, 0.63; destruction, 0.72; blaming others, 0.72). The fit index values obtained from the confirmatory factor analysis conducted to validate the structure of the Cognitive Emotion Regulation Questionnaire within the scope of the current study revealed that the scale's fit values were quite good ($\chi^2 = 2880.01$, $df = 549$, $CFI = 0.91$, $NFI = 0.90$, $NNFI = 0.90$, $SRMR = 0.086$, and $RMSEA = 0.096$). The factor loadings of the scale items were also found to be in the range of 0.40 to 0.82. In this study, the dimensions of adaptive cognitive emotion regulation and maladaptive cognitive emotion regulation were used, and Cronbach's alpha values were found to be $\alpha = 0.85$ and 0.88 , respectively, in the reliability analysis.

Self-Compassion Scale - Short Form

The Self-Compassion Scale - Short Form was developed by Raes et al. [44] to determine individuals' levels of self-compassion. The scale was adapted to Turkish culture, and its validity and reliability were studied by Yıldırım and Sarı [11]. The scale consists of 11 items and is scored on a 5-point Likert scale (1 = almost never, 5 = almost always). The Cronbach α internal consistency reliability value of the scale was calculated as 0.87 in Dutch culture and 0.86 in British culture. In the adaptation study of the scale, the Cronbach α internal consistency reliability value was calculated as 0.75. The fit index values obtained from the confirmatory factor analysis applied to validate the structure of the Self-Compassion Scale - Short Form in the current study revealed that the scale's fit values were quite good ($\chi^2 = 335.56$, $df = 41$, $CFI = 0.98$, $NFI = 0.97$, $NNFI = 0.97$, $SRMR = 0.060$, and

$RMSEA = 0.082$). The factor loadings of the scale items were also found to be in the range of 0.46 to 0.73. In the present study, the reliability coefficient of the Self-Compassion Scale - Short Form was calculated as $\alpha = 0.84$.

Social Appearance Anxiety Scale

The Social Appearance Anxiety Scale was developed by Hart et al. [3] to determine individuals' levels of social appearance anxiety. The scale was adapted into Turkish by Doğan [45]. The scale is evaluated on a 5-point Likert scale ranging from 1 (not at all) to 5 (extremely). The scale consists of 16 items. Cronbach's alpha values calculated on different samples during the scale development process were $\alpha = 0.94$. The Cronbach's alpha value calculated in the Turkish adaptation study of the scale was $\alpha = 0.93$. The fit index values obtained from the confirmatory factor analysis applied to validate the structure of the Social Appearance Anxiety Scale in the current study revealed that the scale's fit values were quite good ($\chi^2 = 947.96$, $df = 101$, $CFI = 0.99$, $NFI = 0.99$, $NNFI = 0.99$, $SRMR = 0.042$, and $RMSEA = 0.071$). In the present study, the reliability coefficient of the Social Appearance Anxiety Scale was calculated as $\alpha = 0.95$.

Data Analysis

The obtained data were examined in accordance with Field's [46] recommendation. This examination first assessed whether there were any outliers in the data set, followed by an evaluation of linearity and normality. To test for outliers in the aforementioned situations, the variables were converted to standardized z-values. It was determined that these values fell within the range of ± 3 . Since the standardized z-values were within the ± 3 range, it was determined that there were no outliers in the dataset [47-48]. The normal distribution properties of the variables were examined using skewness and kurtosis values. It was determined that the obtained values, being within ± 2 , provided evidence of a normal distribution [49-51]. CFA was used to test the validity of the measurement tools used in the study, and Cronbach's alpha internal consistency tests were used to test

their reliability. CFA model estimation was performed using the robust diagonally weighted least squares (DWLS) method, which is a recommended estimation method for ordinal data and has test statistics adjusted for mean and variance [52-56]. Multiple fit indices were considered in assessing the model's fit to the data. Fit indices were considered acceptable if CFI and NFI values were above 0.90 and RMSEA and SRMR values were below 0.10 [57-61].

To test the hypotheses of the study, regression-based Model 81 was tested using the SPSS Process Macro. Before testing the model, the assumptions of regression analysis were tested. First, the Durbin-Watson coefficient was checked for the independence of errors, and this value was found to be 1.98. This value is expected to be between 1 and 3 [62-63]. Another assumption, the multicollinearity problem, was tested using the variance inflation factor (VIF) and tolerance values. It has been reported that VIF values should be less than 5 and tolerance values should be greater than 0.20 [64-65]. As a result of the analysis, it was seen that the VIF values of the model were between 1.14 and 1.91, and the tolerance values were between 0.52 and 0.88. Based on the results obtained, it was determined that there was no multicollinearity problem among the variables in the model. Additionally, the absence of multivariate outliers was examined using Cook's D value. Considering that Cook's D values greater than 1 are considered outliers, it was determined that there were no multivariate outliers in the data set [64-67].

The study also examined multivariate normality using Mahalanobis distances [68-69]. If the data follow a multivariate normal distribution, comparing the Mahalanobis distances with their chi-square percentages yields an approximately linear line. According to the graph obtained, the data formed a linear line and was found to be multivariate normal. These operations were performed using the SPSS 21.00 software package and the Jasp 0.95.4.0 program.

The bootstrap method is recommended to test the significance of the indirect effects obtained in the model conducted within the scope of the

study [70]. In this method, the resampling technique was used with 10,000 samples at a 95% confidence interval, and the significance of the indirect effect was determined based on whether the bias-corrected confidence interval included zero [71-72]. If the indirect effect is found to be significant, this is considered successful mediation [73]. In this case, the direct effect of the independent variable on the dependent variable may either disappear or remain significant. If it disappears, this indicates full mediation. However, if the direct effect remains significant, this indicates partial mediation [73-74].

Results

In the study, descriptive statistical values were first calculated. In addition, Pearson correlation analysis was performed to determine the relationships between the variables in question. The results obtained are presented in Table 2.

Table 2. Pearson correlation analysis and descriptive statistics results between tolerance, self-compassion, adaptive cognitive emotion regulation, maladaptive cognitive emotion regulation, and social appearance anxiety

Variables	1	2	3	4	5
1.Tolerance	1				
2.Self-compassion	0.323***	1			
3. Adaptive cognitive emotion regulation	0.200***	0.358***	1		
4. Maladaptive cognitive emotion regulation	-0.250***	-0.576***	0.011	1	
5. Social appearance anxiety	-0.229***	-0.530***	-0.219***	0.484***	1
Mean	22.03	32.64	63.36	47.42	41.22
SD	3.30	7.51	10.21	8.29	14.73
Skewness	0.02	0.13	-0.13	-0.11	0.31
Kurtosis	0.03	-0.06	0.09	0.34	-0.57

Note: *** $p < .001$

Upon examining the findings, positive and statistically significant correlations were determined between tolerance and self-compassion ($r = 0.323$, $p < .001$) and adaptive cognitive emotion regulation ($r = 0.200$, $p < .001$). On the other hand, negative and statistically significant correlations were observed between tolerance and maladaptive cognitive emotion regulation ($r = -0.250$, $p < .001$) and social appearance anxiety (r

= -0.229, $p < .001$). Another finding revealed a positive and statistically significant relationship between self-compassion and adaptive cognitive emotion regulation ($r = 0.358$, $p < .001$). On the other hand, negative and statistically significant relationships were determined between self-compassion and maladaptive cognitive emotion regulation ($r = -0.576$, $p < .001$) and social appearance anxiety ($r = -0.530$, $p < .001$). Finally, a negative and statistically significant relationship was found between social appearance anxiety and adaptive cognitive emotion regulation ($r = -0.219$, $p < .001$), and a positive and statistically significant relationship was found between social appearance anxiety and maladaptive cognitive emotion regulation ($r = 0.484$, $p < .001$).

The results of the mediation model analyses in the study revealed that tolerance had a negative and statistically significant total effect on social appearance anxiety ($\beta = -0.229$, $t = -5.962$, $p < .001$). When examining the direct effects from the model findings, tolerance was found to predict self-compassion ($\beta = 0.323$, $t = 8.672$, $p < .001$) and adaptive cognitive emotion regulation ($\beta = 0.094$, $t = 2.439$, $p = 0.015$) positively and statistically significantly. On the other hand, tolerance was found to predict maladaptive cognitive emotion regulation ($\beta = -0.071$, $t = -2.210$, $p = 0.036$) negatively and statistically significantly. In the model, self-compassion was found to predict adaptive cognitive emotion regulation ($\beta = 0.328$, $t = 8.467$, $p < 0.001$) in a positive and statistically significant manner. However, self-compassion was found to predict maladaptive cognitive emotion regulation ($\beta = -0.553$, $t = -16.305$, $p < 0.001$) and social appearance anxiety ($\beta = -0.310$, $t = -6.986$, $p < 0.001$) in a negative and statistically significant direction. Among the direct effects, the maladaptive cognitive emotion regulation variable positively predicted social appearance anxiety ($\beta = 0.298$, $t = 7.235$, $p < 0.001$); while the adaptive cognitive emotion regulation variable was found to predict social appearance anxiety ($\beta = -0.105$, $t = -2.910$, $p = 0.004$) in a negative direction and statistically significantly.

When examining the standardized indirect effects, it was determined that both the emotion regulation dimensions and self-compassion levels had significant mediating effects on the relationship between tolerance and social appearance anxiety, as the 95% bias-corrected confidence intervals did not include zero. When examining these mediating effects, it was first determined that tolerance's indirect effect on social appearance anxiety via self-compassion ($a_1b_1 = -0.100$, $SE = 0.018$, 95% $CI [-0.138, -0.066]$) was calculated to be significant. Second, tolerance's adaptive cognitive emotion regulation dimension ($a_2b_2 = -0.010$, $SE = 0.006$, 95% $CI [-0.023, -0.001]$) significantly mediated its indirect effect on social appearance anxiety. Third, tolerance's maladaptive cognitive emotion regulation dimension ($a_3b_3 = -0.021$, $SE = 0.011$, 95% $CI [-0.044, -0.001]$) was found to have a significant indirect effect on social appearance anxiety. When examining the fourth indirect effect path, tolerance's indirect effect on social appearance anxiety via the self-compassion and adaptive cognitive emotion regulation dimension ($a_1d_1b_2 = -0.011$, $SE = 0.004$, 95% $CI [-0.020, -0.004]$) was found to be significant. When examining the fifth indirect effect pathway, tolerance's indirect effect on social appearance anxiety was found to be significant through its self-compassion and maladaptive cognitive emotion regulation dimension ($a_1d_2b_3 = -0.053$, $SE = 0.010$, 95% $CI [-0.075, -0.035]$). The findings obtained from the analysis are presented in Table 3.

Table 3. Direct and indirect effects of tolerance on social appearance anxiety with self-compassion and cognitive emotion regulation as mediators

Independent Variable: Tolerance					
Dependent Variable: Social appearance anxiety					
	<i>B</i>	<i>SE</i>	β	<i>t</i>	<i>p</i>
Tolerance to self-compassion	0.735	0.085	0.323	8.672	<.001
Tolerance to adaptive cognitive emotion regulation	0.292	0.120	0.094	2.439	0.015
Tolerance to maladaptive cognitive emotion regulation	-0.179	0.051	-0.071	-2.102	0.036
Self-compassion to adaptive cognitive emotion regulation	0.445	0.053	0.328	8.467	<.001
Self-compassion to maladaptive cognitive emotion regulation	-0.610	0.037	-0.553	-16.305	<.001
Self-compassion to social appearance anxiety	-0.608	0.087	-0.310	-6.986	<.001
Adaptive cognitive emotion regulation to social appearance anxiety	-0.152	0.052	-	-2.910	0.004
			0.105		
Maladaptive cognitive emotion regulation to social appearance anxiety	0.530	0.073	0.298	7.235	<.001
Total effect of tolerance	-1.019	0.171	-0.229	-5.962	<.001
Direct effect of tolerance	-0.146	0.153	-0.033	-0.956	0.340
$F_{(4\ 642)} = 82.374$, $R^2 = 0.339$, $p < .001$					
Bootstrap results for indirect effect					
	Effect	SE	Lower	Upper	

Tolerance to social appearance anxiety via adaptive cognitive emotion regulation	-0.044	0.026	-0.105	-
	0.005			
Tolerance to social appearance anxiety via maladaptive cognitive emotion regulation	-0.095	0.048	-0.192	-
	0.006			
Tolerance to social appearance anxiety via self-compassion	-0.447	0.083	-0.620	-
	0.294			
Tolerance to social appearance anxiety via self-compassion and adaptive cognitive emotion regulation	-0.050	0.019	-0.091	-
	0.016			
Tolerance to social appearance anxiety via self-compassion and maladaptive cognitive emotion regulation	-0.237	0.047	-0.338	-
	0.153			
<i>Bootstrap results for completely standardized indirect effect</i>				
	Effect	SE	Lower	Upper
Tolerance to social appearance anxiety via adaptive cognitive emotion regulation	-0.010	0.006	-0.023	-
	0.001			
Tolerance to social appearance anxiety via maladaptive cognitive emotion regulation	-0.021	0.011	-0.044	-
	0.001			
Tolerance to social appearance anxiety via self-compassion	-0.100	0.018	-0.138	-
	0.066			
Tolerance to social appearance anxiety via self-compassion and adaptive cognitive emotion regulation	-0.011	0.004	-0.020	-
	0.004			
Tolerance to social appearance anxiety via self-compassion and maladaptive cognitive emotion regulation	-0.053	0.010	-0.075	-
	0.035			

Notes: Statistical significance indicated in **bold**. CI = 95% percentile bootstrap confidence interval. Bootstrapping process was confirmed with 10,000 bootstrap samples.

After controlling for gender and age, the direct and indirect effects of tolerance on social appearance anxiety, with the mediating roles of self-compassion and cognitive emotion regulation, are presented in Table 4.

Table 4. Direct and indirect effects of tolerance on social appearance anxiety with self-compassion and cognitive emotion regulation as mediators, and gender, and age as control variables.

Independent Variable: Tolerance					
Dependent Variable: Social appearance anxiety					
	<i>B</i>	SE	<i>β</i>	<i>t</i>	<i>p</i>
Tolerance to self-compassion	0.729	0.082	0.320	8.837	<.001
Tolerance to adaptive cognitive emotion regulation	0.290	0.120	0.094	2.416	0.016
Tolerance to maladaptive cognitive emotion regulation	-0.183	0.085	-0.073	-2.141	0.033
Self-compassion to adaptive cognitive emotion regulation	0.441	0.054	0.325	8.143	<.001
Self-compassion to maladaptive cognitive emotion regulation	-0.607	0.039	-0.550	-15.722	<.001
Self-compassion to social appearance anxiety	-0.578	0.088	-0.295	-6.604	<.001
Adaptive cognitive emotion regulation to social appearance anxiety	-0.144	0.052	-	-2.779	0.006
			0.100		
Maladaptive cognitive emotion regulation to social appearance anxiety	0.530	0.073		7.303	<.001
			0.298		
<i>Total effect of tolerance</i>	-0.995	0.167	-0.223	-5.944	< .001
<i>Direct effect of tolerance</i>	-0.155	0.152	-0.033	-1.017	0.310
	<i>F</i> _(6 640) = 58.289, <i>R</i> ² = 0.353, <i>p</i> < .001				
<i>Bootstrap results for indirect effect</i>					
	Effect	SE	Lower	Upper	
Tolerance to social appearance anxiety via adaptive cognitive emotion regulation	-0.042	0.025	-0.100	-	
	0.002				
Tolerance to social appearance anxiety via maladaptive cognitive emotion regulation	-0.097	0.048	-0.195	-	
	0.004				
Tolerance to social appearance anxiety via self-compassion	-0.421	0.081	-0.588	-	
	0.274				
Tolerance to social appearance anxiety via self-compassion and adaptive cognitive emotion regulation	-0.046	0.019	-0.087	-	
	0.013				

Tolerance to social appearance anxiety via self-compassion and maladaptive cognitive emotion regulation	0.151	-0.234	0.046	-0.332	-
<i>Bootstrap results for completely standardized indirect effect</i>					
		Effect	SE	Lower	Upper
Tolerance to social appearance anxiety via adaptive cognitive emotion regulation	0.001	-0.009	0.006	-0.022	-
Tolerance to social appearance anxiety via maladaptive cognitive emotion regulation	0.001	-0.022	0.011	-0.044	-
Tolerance to social appearance anxiety via self-compassion	0.062	-0.094	0.018	-0.131	-
Tolerance to social appearance anxiety via self-compassion and adaptive cognitive emotion regulation	0.003	-0.010	0.004	-0.020	-
Tolerance to social appearance anxiety via self-compassion and maladaptive cognitive emotion regulation	0.035	-0.053	0.010	-0.074	-

Notes: Gender: 1 for males, 0 for females, Statistical significance indicated in **bold**. CI = 95% percentile bootstrap confidence interval. Bootstrapping process was confirmed with 10,000 bootstrap samples.

After controlling for gender and age, self-compassion and cognitive emotion regulation were found to have significant indirect effects in the relationship between tolerance and social appearance anxiety through their mediating roles. When the model without control variables was compared to the model including control variables, the direct effect of tolerance on self-compassion, the direct effect of self-compassion on adaptive cognitive emotion regulation, and the direct effect of self-compassion on maladaptive cognitive emotion regulation decreased. In addition, the indirect effects of adaptive cognitive emotion regulation and self-compassion also decreased. After controlling for gender and age, the findings regarding the mediating roles of self-compassion and cognitive emotion regulation in the relationship between tolerance and social appearance anxiety are presented in Figure 1.

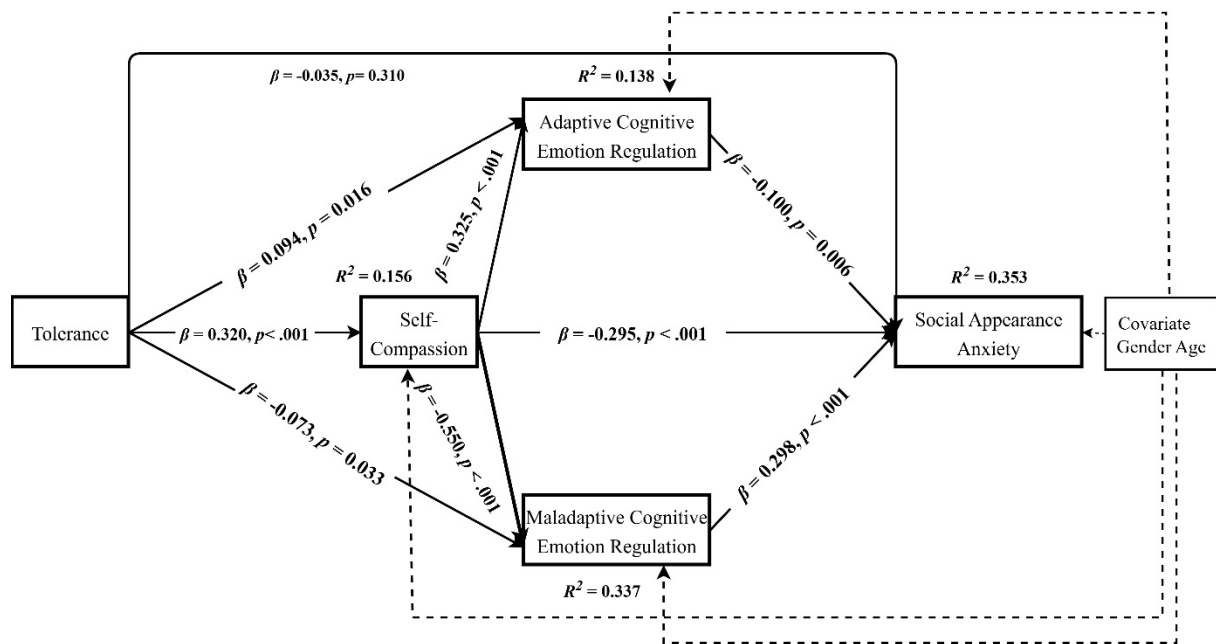


Figure 1. The prediction of social appearance by tolerance through the mediation of emotion cognitive regulation and self-compassion, after controlling for gender, and age.

Discussion

Research findings reveal a positive relationship between tolerance levels and self-compassion and adaptive cognitive skills, a negative relationship with maladaptive skills, and that tolerance predicts these variables. A positive relationship is observed between self-compassion and adaptive cognitive skills, while a negative relationship exists with maladaptive skills. As the level of self-compassion increases, harmonious cognitive skills increase and disharmonious cognitive skills decrease. Self-compassion also shows a negative relationship with the dependent variable of the study. In other words, as self-compassion levels increase, social appearance anxiety decreases. Furthermore, as compatible cognitive skills increase, social appearance anxiety decreases, while as incompatible cognitive skills increase, social appearance anxiety also increases. To summarize the findings in general, people with high tolerance levels also have higher levels of self-compassion, and this situation has a chain effect: first, it increases adaptive cognitive skills, and then the increased adaptive skills reduce social appearance anxiety. High self-compassion reduces

maladaptive cognitive skills and, through this, reduces social appearance anxiety. The direct effect of self-compassion on social appearance anxiety is also significant, and there is a negative relationship between the two variables. No study in the literature has examined these variables together. Similarly, Yan et al. [75] concluded in their research that there is a negative relationship between self-compassion and negative physical self-perception and social anxiety. Fink Lamotte et al. [76] found in their research that individuals with high levels of self-compassion accept themselves better and exhibit a kind and understanding attitude towards themselves, thus reducing social anxiety.

The findings of studies that examined them separately are consistent with the findings of this study. The results obtained from the study indicate a positive and significant relationship between tolerance and self-compassion. It can be said that a person who is tolerant towards others will also be tolerant towards themselves. Kurtoğlu and Başgöl [77] define self-compassion as an individual showing the same tolerance to themselves that they show to others. From this perspective, it can be said that this finding is consistent with the literature.

Another finding of the study is that self-compassion predicts social appearance anxiety both directly and through its effect on cognitive emotion regulation skills. Research findings in the literature confirm this finding. Gao et al. [78] concluded in their study that self-compassion and social appearance anxiety are related. Wang et al. [79] concluded that there is a significant relationship between self-compassion and body image disorder. Neff [12] points out that self-compassion reduces self-criticism. This can be interpreted as self-compassion reducing social appearance anxiety. Overall, the literature suggests that self-compassion is associated with general anxiety [80-81] and depression [82], that it has a protective function, that it positively affects mental health [29], and that it increases psychological well-being [83-85]. It can be said that high levels of self-compassion reduce social appearance anxiety. Self-compassion also indirectly affects social appearance anxiety through its effect on cognitive

emotion regulation. Gilbert [86] points out that self-compassion is effective in regulating emotions by reducing the effects of negative emotions. Many studies indicate a negative correlation between self-compassion and difficulty regulating emotions [87-91]. Similar to the results of this study, the literature shows that self-compassion is associated with emotion regulation skills [92-94], and that self-compassion is positively related to adaptive skills and negatively related to maladaptive skills [16, 36, 95-99].

Noor et al. [100] concluded from their research that cognitive emotion regulation is associated with social appearance anxiety, and that those who use maladaptive coping skills more frequently have higher levels of social appearance anxiety. Charania and Krishnaveti [101] similarly concluded that social appearance anxiety is related to maladaptive coping skills. Numerous studies have reached similar conclusions [23, 102-103]. While adaptive skills facilitate the management and regulation of an individual's feelings about themselves and their appearance, maladaptive skills can reinforce negative thoughts and have an anxiety-elevating effect. As a result, individuals may withdraw from social settings due to fear of negative evaluation and experience appearance anxiety [104]. The findings from this study are consistent with the general discourse of the extension and development theory. Positive traits such as tolerance and self-compassion support positive skills and, consequently, positive emotions. These positive emotions, in turn, serve a protective function against high-risk situations for adolescents, such as social appearance anxiety.

Implications and Limitations

This research is a cross-sectional study, and the causal aspect of the relationships is therefore lacking. In addition, participants were selected using appropriate sampling for the purpose of determining participants for our study, which may limit the generalizability of our study. Considering the limitations of our study, the findings should be evaluated accordingly. In future studies, the generalizability of the findings can be ensured by using random or mixed sampling methods. The sample is limited to a specific age group, which can be considered another limitation of the

study. It is recommended that the relationships between variables be examined through experimental and longitudinal studies, that new studies be planned with different age groups and different variables, and that field experts working with adolescent groups include self-compassion development activities in their programs. Since the data in the study were collected online, participants may be individuals who use smartphones or have internet access and live in urban areas. In new studies, individuals from cultural contexts or more rural areas could be selected as participants.

Conclusion

In conclusion, this study reveals that individuals' tolerance is related not only to their social appearance concerns but also to their levels of self-compassion and, consequently, their emotion regulation skills. In this process, the mediating effect of emotion regulation dimensions and self-compassion shows that tolerance requires individuals to both improve their emotion regulation skills and adopt a self-compassionate approach in order to reduce their social appearance concerns. Psychologists, counselors, and psychiatrists working in the field of mental health are encouraged to develop various intervention programs for individuals with social appearance anxiety to reduce their anxiety levels. These programs may include providing individuals with information about their levels of social appearance anxiety, as well as activities that help them acquire skills to support their tolerance and self-compassionate approach.

Declarations

Conflict of interest

The authors declare that they have no conflict of interest regarding the publication of this article.

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Ethics approval and consent to participate

Ethical approval for this study was obtained from the Gümüşhane University Social and Human Sciences Ethics Committee (document no: E-95674917-108.99-379886, as a result of decision no. 2025/8 dated October 30, 2025). All participants voluntarily gave written informed consent.

Consent to Participate

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

Consent for publication

Not applicable.

Author contributions

Concept-O.B., G.Y.Ç., F.K.; Design-G.Y.Ç., F.K.; Supervision- G.Y.Ç., F.K.; Resources-O.B., G.Y.Ç., F.K.; Data Collection and/or Processing-G.Y.Ç., F.K.; Analysis and/or Interpretation-G.Y.Ç., F.K.; Literature Search- G.Y.Ç., F.K.; Writing Manuscript-O.B., G.Y.Ç., F.K.; Critical Review- F.K. Author read and agreed to the final version of the manuscript.

Data availability

The datasets used and/or analyzed during the current study are available from the corresponding author upon reasonable request.

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