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THE MEDIATING ROLE OF PHYSICAL APPEARANCE PERFECTIONISM IN DETERMINING THE CAUSAL RELATIONSHIP BETWEEN PERCEIVED PRESSURES AND PERCEPTION OF APPEARANCE

POSREDNIŠKA VLOGA PERFEKCIONIZMA GLEDE TELESNEGA VIDEZA PRI DOLOČANJU VZROČNE POVEZAVE MED ZAZNANIMI PRITISKI IN DOJEMANJEM VIDEZA

ABSTRACT

This study aimed to examine how perceived pressures impact the perception of appearance, with physical appearance perfectionism acting as a mediator. A total of 310 adults (Mage = 30.69, SD = 10.3 years), including 150 women and 160 men aged 18-60 years, participated in this cross-sectional study. The path analysis was conducted to test the mediating role of physical appearance perfectionism in the relationship between the perception of appearance and perceived pressures related to appearance. We modeled the influence of perceived pressures related to appearance on the perception of appearance through worry about imperfection regarding their physical appearance. The resulting model achieved an excellent fit. The full mediating effect of the worry about imperfection in predicting the perception of appearance with perceived pressures was significant ($p < .001$). Perceived pressure from peers/significant others and the media positively and significantly predicted the worry about imperfection (path coefficient = 0.277, $p < .007$; path coefficient = 0.163, $p < .00$, respectively). The worry about imperfection significantly contributes to the negative perception of appearance (path coefficient = -0.38, $p < .001$). As a result, worry about imperfection regarding physical appearance was determined as a mediator between perceived pressures related to physical appearance and perception of appearance.

Keywords: Perceived pressure of peers/significant others, perceived media pressure, physical appearance perfectionism, perception of appearance

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IZVLEČEK

Namen te študije je bil preučiti, kako zaznani pritiski vplivajo na dojetanje videza, pri čemer perfekcionizem glede telesnega videza deluje kot mediator. V presečni študiji je sodelovalo 310 odraslih (povprečna starost = 30,69 let, SD = 10,3 let), med njimi 150 žensk in 160 moških, starih med 18 in 60 let. Za preverjanje mediacijske vloge perfekcionizma glede telesnega videza v odnosu med dojetanjem videza in zaznanimi pritiski, povezanimi z videzom, je bila uporabljena analiza poti. Modelirali smo vpliv zaznanih pritiskov, povezanih z videzom, na dojetanje videza prek skrbi zaradi nepopolnosti glede telesnega videza. Dobljeni model se je odlično prilegal podatkom. Popolna mediacijska vloga skrbi zaradi nepopolnosti pri napovedovanju dojetanja videza ob prisotnosti zaznanih pritiskov je bila statistično značilna ($p < 0,001$). Zaznani pritiski s strani vrstnikov/pomembnih drugih in medijev so pozitivno in statistično značilno napovedovali skrb zaradi nepopolnosti (koeficient poti = 0,277, $p < 0,007$; koeficient poti = 0,163, $p < 0,00$). Skrb zaradi nepopolnosti pomembno prispeva k negativnemu dojetanju videza (koeficient poti = -0,38, $p < 0,001$). Skrb zaradi nepopolnosti glede telesnega videza je tako opredeljena kot mediator med zaznanimi pritiski, povezanimi s telesnim videzom, in dojetanjem videza.

Ključne besede: zaznani pritiski vrstnikov/pomembnih oseb, zaznani medijski pritiski, perfekcionizem glede telesnega videza, dojetanje videza

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INTRODUCTION

Physical standards associated with appearances, such as beauty and body shape are accepted by society as indicators of psychological and physical health (Ahmadpanah et al., 2019). For example, the risk of diabetes has been associated with a high hip-to-waist ratio, while a low hip-to-waist ratio is considered to be one of the universal beauty standards (Singh, 2002). Some of the universal beauty standards might change according to culture (Xu et al., 2010). However, today highly developed technological opportunities and the media have allowed individuals to connect with people with similar views around the world. Meeting certain appearance standards in society has been associated with for example successful romantic relationships, good health conditions, better social integration, and higher academic success, and the desire to reach these standards might add pressure on individuals (Gordon et al., 2013). Besides these, appearance is one of the main factors for participation in physical activity which is considered very important for a healthy lifestyle (Vani et al., 2021).

Body image is a complex construct that includes perceptions, attitudes, and behaviors related to one's physical appearance (Smolak, 2006). Body image was also defined as a multidimensional concept that is influenced by genetic and non-shared environment, and relatively independent of BMI (Wade et al., 2003). People who have a positive body image are more likely to have healthy eating habits and an active lifestyle by practicing yoga and exercises to maintain their body conditions (Gillen, 2015). On the other hand, a negative body image is associated with negative thoughts about the body, beliefs, emotions, and unhealthy habits such as excessive exercise (Vani et al., 2021). Those thoughts can be affected by the clear or hidden messages regarding appearance ideals by society and the media. When the individuals' body mismatched with their ideal body perception, body dissatisfaction occurs, and individuals may compare their bodies with pictures provided by the media (Pritchard & Cramblitt, 2015). In fact, males have reported that they feel pressured to be muscular from different socio-cultural sources and females have reported that they feel pressure to be thin from media sources (Xu et al., 2010). Having anxiety about one's weight or body shape might cause eating disorders which are one of the most common psychological reasons for death (Girard et al., 2018). Additionally, pressure set by adult relatives and media sources may reinforce some body-changing behaviors for both genders (Xu et al., 2010). In other words, the internalization of unattainable appearance ideals by individuals might cause body dissatisfaction which is a risk factor for unhealthy weight-controlling methods such as overloaded diets and eating disorders (Schaefer et al., 2017).

In the Tripartite Influence Model, body image and eating disorders were assumed to be affected by two main factors, which are the internalization of thinness ideals and social comparisons of appearance, especially from parents, peers, and the media (Hardit & Hannum, 2012). These relationships have been supported by several studies (Keery et al., 2004; Shroff & Thompson, 2006). Individuals may be exposed to these unattainable ideals at every stage of their life. For example, the examination using anthropometric measurements on the Barbie dolls, which are very popular among children, has shown that the body shape of the Barbie is unhealthy, and 1 in 100.000 women can have that body, and 1 in 50 men have the body of the Ken doll (McCreary & Sasse, 2000). Furthermore, advertisements, banners, and posters, for example, often feature muscular men and thin women. Such behaviors with the excessive desire to reach these thin and muscular figures have been found associated with depression (McCreary & Sasse, 2000). In this context, ideals and pressures set by socio-cultural structures might play a role in body-changing behaviors and have a strong influence on an individual's perception of their bodies (Xu et al., 2010).

The appearance standards set by society may be accepted as the perfect appearance by individuals and they may have perfectionist tendencies toward their physical appearance (Stoeber & Stoeber, 2009). Furthermore, these individuals want to be accepted and confirmed by their significant others for their personal and social image (Hill et al., 2004). Regarding these issues, Yang and Stoeber (2012) introduced the concept of physical appearance perfectionism and developed the Physical Appearance Perfectionism Scale. One of the subscales 'hopes for perfection', which has shown a positive correlation with the indicators of a positive body image of an individual, involves the behaviors that set challenging standards and self-evaluation through criticism. This may help the individuals to improve themselves continuously. On the other hand, the other subscale 'worry about imperfection', which has shown negative associations with indicators of a positive body image, involves an individual's desire to reach high standards and may cause depression by social anxiety due to the fear of negative criticism from other people when they are unable to reach these high standards (Yang and Stoeber, 2012). Such individuals need the approval of others to feel good about themselves and it is important to be considered 'perfect' by others. This may cause the individuals to easily internalize physical appearance and be affected by social and environmental pressures (Grammas & Schwartz, 2009; Stoeber & Stoeber, 2009). Therefore, there may be a relationship between socio-cultural pressures and appearance perfectionism. In fact, in their study, Grammas and Schwartz (2009) reported that internalized societal messages and socially prescribed

perfectionism, which is defined as following certain standards for the individual and meeting expectations that are set by significant other people, presumes muscle dissatisfaction.

Studies in the literature show that sociocultural pressures that support the appearance standards of society can affect the body image negatively which leads to many unhealthy behaviors (Girard et al., 2018). Individuals are exposed to these pressures daily. To these authors' knowledge, there are limited studies examining relationships between sociocultural pressures and body image by focusing on the mediators of these relationships. In the present study, we thought that worry about the imperfection dimension of physical appearance perfectionism may have a significant role in these relationships as a mediator. In this manner, this study extends previous body image and sociocultural pressures research by additionally investigating physical appearance perfectionism. Moreover, this study critically engages with the Tripartite Influence Model by proposing physical appearance perfectionism as a key psychological mechanism linking perceived social pressures to appearance perception. While Tripartite Influence Model highlights internalization and appearance comparison as primary pathways, the model proposed in this study suggest that perfectionism may serve as an additional mediator. Furthermore, examining Tripartite Influence Model among gender balanced adult sample would broaden the applicability of model beyond adolescent and female-dominated perspectives. In addition, revealing the relationships between sociocultural pressures and body image, and understanding the mechanisms and reasons behind the relationships can contribute to developing strategies to deal with these unhealthy behaviors and create prevention programs. In this context, this study aimed to investigate the mediating effect of worry about the imperfection in the relationship between family, media, peers/significant others pressure, and perceived appearance. To this end, the following hypotheses were established:

H1: Family pressure would affect worry about imperfection positively.

H2: Peers/significant others' pressure would affect worry about the imperfection positively.

H3: Media pressure would affect worry about imperfection positively.

H4: Worry about imperfection would affect perceived appearance negatively.

H5: Worry about imperfection would be a mediator in the relationship between family pressure and perceived appearance.

H6: Worry about imperfection would be a mediator in the relationship between peers/significant others' pressure and perceived appearance.

H7: Worry about imperfection would be a mediator in the relationship between Media pressure and perceived appearance.

The hypothesized model is illustrated in Figure 1.

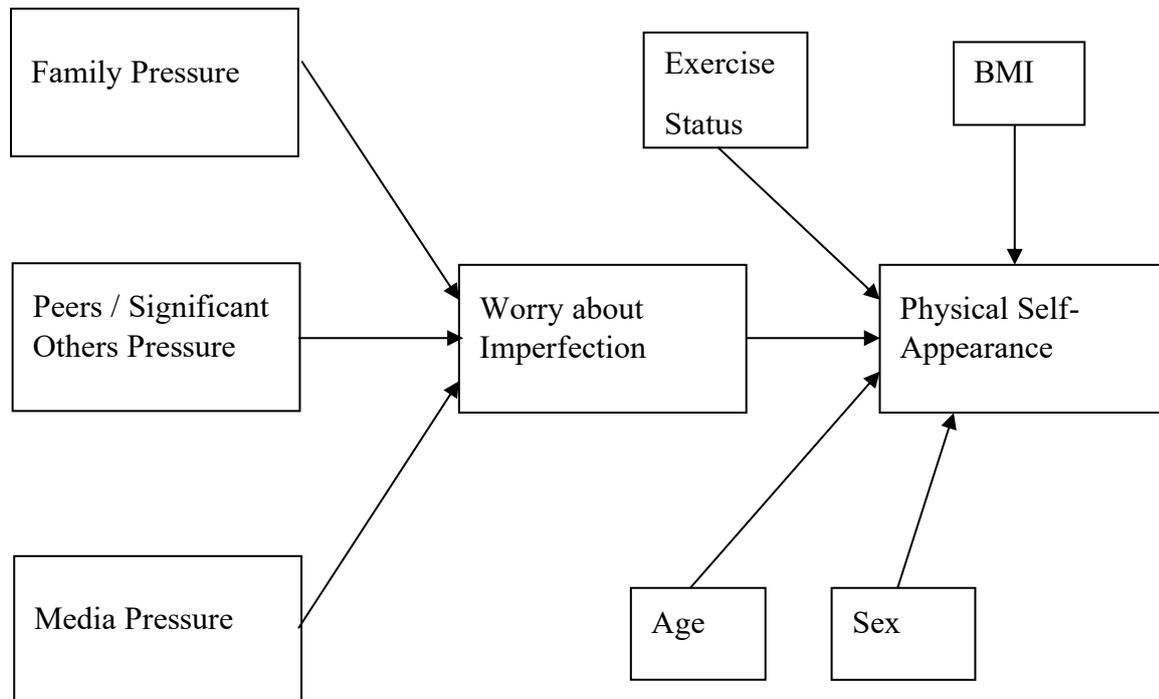


Figure 1. Hypothesized model

METHODS

Participants

Participants were 160 females and 150 males ($M_{age} = 30.69$, $SD = 10.3$ years) in this convenience-sampled study. It was determined through demographic information sheets that 147 participants (47%) practiced physical activity regularly and the mean body mass index (BMI) was 23.7 ($SD = 3.6$) for all participants. In Structural Equation Modeling (SEM) studies, one of the suggestions is that there should be ten participants for each parameter to determine the sample size correctly (Worthington and Whittaker, 2006). The sample size in this study is higher than the number of samples obtained by this formula. All the participants have signed the consent forms.

Instruments

Demographic Information Sheets

It contains information on the age, sex, height, weight, and exercise status (regular participant/non-participant) of the participants.

The Sociocultural Attitudes Towards Appearance Questionnaire (SATAQ-4R)

SATAQ-4R was developed by Schaefer et al. (2015). It contains thirty-one items and seven subscales: Internalization-Thin/Low Body Fat, Internalization-Muscular, Internalization-General Attractiveness, Pressures-Family, Pressures-Media, Pressures-Peers, Pressures-Significant Others. Each item was evaluated on a 5-point Likert scale ranging from 'agree' to 'disagree'. SATAQ-4R was adapted to Turkish on female samples by Cihan et al. (2016). "Pressure-Peers" and "Pressure-Significant Others" factors in the original form were loaded onto a single factor in the Turkish female sample. This factor was labeled Pressures-Peers/Significant Others in the Turkish version of the SATAQ-4R (Cihan et al., 2016). We have conducted confirmatory factor analysis (CFA) to check the construct validity of the SATAQ-4R for the current sample because of having male participants. CFA revealed acceptable and good fit index values for males ($\chi^2/df = 2.30$, CFI = 0.94, TLI = 0.93, GFI = 0.97, and IFI = 0.94) and for females ($\chi^2/df = 2.03$, CFI = 0.996, TLI = 0.995, GFI = 0.992, and IFI = 0.996) in the present study. To measure socio-cultural pressures; "Pressures-Family" subscale (5 items, e.g., 'I feel pressure from family members to look thinner'), "Pressures-Media" subscale (4 items, e.g., 'I feel pressure from the media to improve my appearance'), and "Pressures-Peers/Significant Others" subscale (7 items, e.g., 'My peers encourage me to get thinner.') were used in this study. The Cronbach's alpha values were found 0.87 for females and males in Pressures-Family subscale, 0.97 for females and 0.94 for males in Pressures-Media subscale, and 0.89 for females and 0.93 for males in Pressures-Peers/Significant Others subscale in the sample of this study.

The Physical Appearance Perfectionism Scale (PAPS)

PAPS was developed by Yang and Stoeber (2012) and adapted to Turkish by Kolsallayan and Kazak (2021). It contains twelve items and two subscales: Worry about imperfection (7 items) and Hope for perfection (5 items). Each item was evaluated on a 5-point Likert scale ranging from 'disagree (1)' to 'definitely agree (5)'. The total score calculation was not performed in this tool. To evaluate how much an individual is worrying about their appearance, only the

Worry about imperfection subscale (e.g., 'I wish I could completely change my appearance') was used in this study, and the Cronbach's alpha coefficient for the present sample was 0.93.

The Physical Self-Description Questionnaire (PSDQ)

PSDQ was developed by Marsh et al. (1994) and adapted to Turkish by Marsh et al. (2002). It contains seventy items and eleven subscales: Strength, Body Fat, Activity, Endurance/Fitness, Sports Competence, Coordination, Health, Appearance, Flexibility, Global Physical Self-concept, and Global Esteem. Each item was evaluated on a 6-point true-false response scale. To measure an individual's perception of their appearance, the Appearance subscale (6 items, e.g., 'I am attractive for my age') was used in this study. The internal consistency coefficient of the Appearance subscale was .89 for the current sample.

Procedure

The protocol of the study was approved by the Hacettepe University Ethics Commission (Number: E-35853172-900-00001636010). First, consent forms and information about the research were sent to the participants by Google Forms via WhatsApp or e-mail. If the participants signed the consent form, the second page was opened where the information on how to fill out the questionnaires, demographic information sheets, and measurement tools was written. It was observed that filling out the forms takes 15-20 minutes in total.

Data Analysis

Statistical analyzes were performed by using IBM, SPSS 23.0, and R Project for Statistical Computing Program version 4.0.0. Descriptive statistics were presented as mean and standard deviation, minimum and maximum values for continuous variables, and frequency and percentage for categorical variables. Kolmogorov-Smirnov test was performed to assess the normality distribution of the continuous variables, and all distributions were non-normal ($p < 0.05$). In order to demonstrate the reliability of the measures, Cronbach's alpha coefficient was calculated, and confirmatory factor analysis (CFA) was performed to test the construct validity of the SATAQ-4R scale (see Instruments). Before the path analyses, bivariate analyses were performed between the dependent and independent variables. The Mann Whitney-U test was performed to examine differences in dependent variables in terms of sex and the status of exercise (regular participant/ non-participant). Kruskal Wallis was conducted to determine BMI group (Underweight/Normal/Overweight/Obese) differences on the dependent variables.

Spearman rank correlation coefficient (ρ) was performed to assess the correlation between continuous variables.

The path model was constructed using the “Lavaan” package in R Project for Statistical Computing program to examine the associations between family, peer/significant others, and media pressures sub-dimensions of SATAQ, worry about the imperfection sub-dimension of PAPS, and Perceived Appearance sub-dimension of PSDQ. Covariates such as sex, BMI, age, and exercise status were also included in the model to obtain adjusted parameter estimates. These covariates have a direct impact on the perceived appearance and are allowed to correlate with each other. Dummy coding was applied for the covariates, sex (1:Female, 0:Male), and exercise status (1: regular exercise participant, 0: non-participant). Mediation effects were tested via the Sobel test. Since the normality assumption did not hold, parameter estimates were obtained by the unweighted least-squares (ULS) method. The robustness of the parameter estimates was evaluated by calculating confidence intervals through a 5000-sample bootstrap procedure. To further validate the hypothesized mediation model, alternative models were compared to determine the directional robustness of the relationships. Based on the structure of the hypothesized model, the 15 free parameters included: 8 direct regression paths (from three types of sociocultural pressure to the mediator, and from the mediator and covariates to the outcome), 4 variance terms (including residual variances and latent variable variances), 2 intercepts, and 1 residual covariance between variables. With a total sample size of 310 participants, the model meets the recommended participant-to-parameter ratio of at least 10:1 (Kline, 2023), indicating adequate statistical power for the path analysis conducted. The overall fit of the model was assessed by Chi-square/degrees of freedom (χ^2/df), Root Mean Square Error of Approximation (RMSEA), Comparative Fit Index (CFI), Goodness of Fit Index (GFI), and NFI (Normed Fit Index) and Standardized Root Mean Square Residual (SRMR) fit measures.

RESULTS

The group differences across family, peer/significant others, and media pressures sub-dimensions of the SATAQ, Worry about the Imperfection sub-dimension of the PAPS, and Appearance sub-dimension of the PSDQ were assessed by Mann Whitney-U and Kruskal Wallis tests. Mann Whitney-U test results indicated significant sex differences in family and media pressure subdimensions of the SATAQ, $p < 0.05$. Mean scores of these subdimensions showed that female participants perceived more pressure than male participants. Moreover, there were also significant exercise status group differences in peer/significant others and media pressure of the SATAQ, worry about imperfection, and the perceived appearance. ($p < 0.05$, $p < 0.001$, see Table 1). Accordingly, regular exercise participants perceived less pressure and higher perceived appearance compared to non-participants.

Table 1. Mann Whitney-U test results across sex and exercise status groups.

Dependent Variables	Sex				p-values	Exercise Status				p-values
	Female		Male			Participant		Non-Participant		
	Median (IQR)	M (SD)	Median (IQR)	M (SD)		Median IQR	M (SD)	Median IQR	M (SD)	
Family Pressure	1.5 (1-2.5)	1.94 (1.09)	1.25 (1-2)	1.68 (0.94)	0.033*	1.25 (1-2.25)	1.72 (1.00)	1.5 (1-2.5)	1.89 (1.05)	0.128
Peer/significant others' pressure	1.25 (1-2)	1.65 (0.83)	1.25 (1-2)	1.67 (0.89)	0.623	1 (1-2)	1.54 (0.77)	1.5 (1-2.25)	1.77 (0.91)	0.001**
Media Pressure	3.0 (1-4)	2.80 (1.51)	1.37 (1-2.75)	1.89 (1.09)	<0.001**	1.50 (1-3)	2.09 (1.28)	2.75 (1-4)	2.61 (1.46)	0.002**
Worry about Imperfection	1.71 (1-2.28)	1.81 (0.83)	1.57 (1-2)	1.64 (0.70)	0.086	1.57 (0.85-2)	1.55 (0.68)	1.71 (1.28-2.28)	1.88 (0.82)	<0.001**
Perceived Appearance	4.83 (4-5.33)	4.63 (0.94)	4.66 (4.16-5.16)	4.58 (0.76)	0.237	4.83 (4.33-5.33)	4.79 (0.81)	4.66 (3.83-5)	4.45 (0.87)	<0.001

Notes. IQR: Interquartile range, M: Mean, SD: Standard deviation * $p < 0.05$, ** $p < 0.001$

Table 2. Kruskal-Wallis test results across BMI groups.

Dependent Variables	Underweight		Normal		Overweight		Obese		p-values
	Median (IQR)	M (SD)	Median (IQR)	M (SD)	Median (IQR)	M (SD)	Median (IQR)	M (SD)	
Family Pressure	1 (1-1.75) ^a	1.35 (0.52)	1.25 (1-2) ^a	1.69 (0.94)	2 (1-2.75) ^b	2.12 (1.16)	2.5 (2-3.5) ^b	2.65 (1.29)	<0.001
Peer/significant others pressure	1 (1-1.25) ^a	1.30 (0.61)	1 (1-2) ^a	1.54 (0.72)	1.75 (1-2.75) ^b	1.93 (1.01)	2.5 (1.25-3.25) ^b	2.39 (1.10)	<0.001
Media Pressure	2.75 (1-4)	2.62 (1.43)	2 (1-4)	2.43 (1.45)	1.5 (1-3)	2.01 (1.22)	2.5 (1-4)	2.63 (1.39)	0.079
Worry about Imperfection	1.57 (0.89-2)	1.68 (0.80)	1.71(1.14-2.14)	1.74 (0.74)	1.57 (1-2.14)	1.60 (0.70)	2 (1.42-3.28)	2.23 (1.09)	0.105
Perceived Appearance	5.16 (4.5-5.45)	4.90 (0.74)	4.66 (4-5.16)	4.55 (0.89)	4.66 (4-5.33)	4.59 (0.83)	4.83 (4-5.33)	4.48 (0.92)	0.102

Notes. IQR: Interquartile range, M: Mean, SD: Standard deviation

^{a,b} There is no difference between the BMI groups with the same superscript value.

Kruskal Wallis test results indicated statistically significant differences among BMI groups on pressures from family and peer/significant others subdimensions of the SATAQ and worry about imperfection ($p < 0.05$, as shown in Table 2). Follow-up pairwise comparisons indicated that underweight individuals perceived significantly different family and peer/significant others pressure than overweight and obese individuals. Underweight individuals perceived less pressure than those in the other BMI groups. Similarly, normal-weight individuals also perceived significantly less family and peer/significant others pressure compared to overweight and obese individuals. Regarding the worry about imperfection subscale, obese individuals reported significantly higher scores than all other groups.

The correlations between family, peer/significant others, and media pressures sub-dimensions of the SATAQ, Worry about the Imperfection sub-dimension of the PAPS, and Appearance sub-dimension of the PSDQ were assessed by Spearman rank correlation coefficient. According to the results, “worry about imperfection” was moderately and positively correlated with “media pressure” ($r=0.420$, $p < 0.001$). Moreover, there was also a weak and significantly positive correlation between “worry about imperfection” and “family pressure” ($r=0.241$, $p < 0.001$) and “peers/significant others pressure” ($r=0.348$, $p < 0.001$). There was a weak negative correlation between perceived appearance and “Worry about imperfection” ($r=-0.353$, $p < 0.001$), and “peers/significant others pressure” ($r=-0.166$, $p < 0.05$).

The path analysis was performed and the estimated path coefficients with both p-values and their associated standard errors with bootstrapped confidence intervals and the results of hypotheses 1-4 are displayed in Table 3. According to Table 3, hypothesis 1 which claims that family pressure positively affects worry about the imperfection was rejected ($\beta = -0.0004$, $p = 0.083$). The path from peers/significant others' pressure to worry about the imperfection was positive and significant ($\beta = 0.277$, $p = 0.006$). Therefore hypothesis 2 was supported. Media pressure had a positive, significant effect on worry about the imperfection ($\beta = 0.163$, $p = 0.029$) and this result supports hypothesis 3. Finally, worry about imperfection was negatively associated with perceived appearance, therefore hypothesis 4 was supported.

To assess the sensitivity of the parameter estimates, confidence intervals based on 5000 bootstrap samples were examined. The results were considered robust when the bootstrapped confidence intervals did not include zero. In this context, the confidence interval for Hypothesis 1 included zero, and the associated p-value was not statistically significant. This combination suggested a lack of statistical stability, as non-significant p-values and confidence intervals that

included zero indicated weak or unreliable effects. In contrast, the confidence intervals for Hypotheses 2 and 3 did not include zero and were supported by statistically significant p-values. These findings indicated that the corresponding relationships were statistically significant, consistent, and reliable.

Table 3. Path Analysis Results.

Path	Standardized Path Coefficients	SE	p	Results	BBC 95% CI	
					LL	UL
H1: Family pressure → Worry about the imperfection	-0.0004	0.083	0.996	Not Supported	-0.190	0.189
H2: Peers/significant others pressure → Worry about the imperfection	0.277	0.101	0.006	Supported	0.085	0.542
H3: Media pressure → Worry about the imperfection	-0.386	0.109	<0.001	Supported	0.137	0.443
H4: Worry about the imperfection → Physical self-appearance	-0.386	0.109	<0.001	Supported	-0.481	-0.222

Notes. Model adjusted for age, sex, BMI, and exercise status. SE: Standard error; BBC 95% CI: Bootstrapped bias corrected for 5000 samples; LL: Lower limit; UL: Upper limit

The mediating effect of worry about the imperfection was tested via the Sobel test and the results were given in Table 4. As shown in Table 4, the indirect effect of peers/significant others' pressure on perceived appearance and media pressure on perceived appearance was found significant and the fully mediated effect of worry about the imperfection was supported. However, the mediating effect of worry about imperfection on the relationship between family pressure and perceived appearance was insignificant.

To evaluate the sensitivity and robustness of the mediation effects, parameter estimates were assessed using 5000 bootstrap samples with bias-corrected confidence intervals. As shown in the Table 4, the indirect effect for hypothesis 5 was not statistically significant, as the bootstrapped confidence interval includes zero (LL = -0.067, UL = 0.067), and the p-value was non-significant ($p = 0.996$). This indicates a lack of statistical stability and suggests that the indirect effect is not supported. In contrast, the mediation effects for hypothesis H6 and hypothesis H7 were statistically significant. For both paths, the bootstrapped 95% confidence intervals did not include zero (H6: [-0.200; -0.021]; H7: [-0.170; -0.034], and the p-values were below the threshold (H6: $p = 0.021$; H7: $p = 0.003$). These findings suggest that the indirect effects are statistically stable, consistent, and supported by the data.

Table 4. Mediation Analysis Results.

Path	Standardized Path Coefficients	SE	p	Results	BBC 95% CI	
					LL	UL
H5: Family pressure → Worry about the imperfection → Physical self-appearance	0.0001	0.083	0.996	Not Supported	-0.067	0.067
H6: Peers/significant others pressure → Worry about the imperfection → Physical self-appearance	-0.107	0.046	0.021	Supported	-0.200	-0.021
H7: Media pressure → Worry about the imperfection → Physical self-appearance	-0.063	0.021	0.003	Supported	-0.170	-0.034

Notes. Model adjusted for age, sex, BMI, and exercise status. SE: Standard error; BBC 95% CI: Bootstrapped bias corrected for 5000 samples; LL: Lower limit; UL: Upper limit

The fit indices were obtained to assess the overall fit of the hypothesized mediation model. The value of χ^2/sd was found to be 0.9801, indicating that the model fit is good (recommended range: 1-3). The RMSEA value was 0.000, suggesting an excellent fit (recommended cut-off: <0.05). GFI was obtained as 1.000, which shows that the model has a very good degree of fitness (recommended cut-off: >0.95). Additionally, NFI = 0.957, CFI = 1.000 and SRMR = 0.043 (<0.05=very good) all meet the commonly accepted thresholds for a very good model fit (recommended cut-off value for NFI and CFI: >0.95; SRMR <0.05). According to these results, the model demonstrates very good fitness (Tabachnik & Fidell, 2018).

Although the current study utilized a cross-sectional design, which limits the ability to draw definitive causal inferences, especially in the context of mediation analysis, several steps were taken to enhance the robustness of the findings. First, the path model was constructed based on established theoretical frameworks and prior empirical findings. Second, covariates such as sex, age, BMI, and exercise status were included to account for potential confounding influences. Third, alternative model comparisons were conducted to evaluate the stability and directionality of the hypothesized mediation model. Specifically, a reverse mediation model was tested in which the direction of influence between the mediator and the outcome variable. In addition, a reduced model excluding covariates was analyzed to examine the robustness of the structural relationships in the absence of control variables was reversed (i.e., physical self-appearance → worry about imperfection → family pressure).

In model comparison, lower AIC value indicates a better-fitting model. Results indicated that the hypothesized mediation model provided a better overall fit compared to the alternative specifications. Specifically, the hypothesized model yielded the lowest Akaike Information Criterion (AIC = 1398.6) value, compared to the reverse mediation model (AIC = 1454.5) and the reduced model without covariates (AIC = 1399.1). These alternative model analyses provide further evidence supporting the robustness and theoretical validity of the hypothesized model, despite the inherent limitations of a cross-sectional design.

DISCUSSION

The aim of this research was to examine the mediating effect of worry about the imperfection in the relationship between family, media, peers/significant others pressure, and perceived appearance. Prior studies have noted the importance of how individuals perceive their appearance for various health behaviors such as eating healthy, exercise thoughts, and mental health (Robertson et al., 2021). In addition, sociocultural pressure was demonstrated to be associated with body image dissatisfaction in various cultures (Frederick et al., 2016; Sundgot-Borgen et al., 2021). Physical appearance perfectionism also includes an individual's desire to reach high standards with their appearance, and cultural norms are highly influential on ideal appearance (Stoeber & Stoeber, 2009). The results of this study indicated that peers' and significant others' and media pressures were significantly associated with the worry about imperfection, and worry about imperfection was significantly and inversely associated with perceived appearance. Moreover, the mediation analyses in the path model indicated the mediating effect of worry about imperfection between sociocultural pressures (peers/significant others and media) and perceived appearance. The findings of this study support Hardit and Hannum's (2012) Tripartite Influence Model's suggestion on how family, peers, significant others, and media may cause body dissatisfaction, and were also used as the basis for explaining the mediating effect of worry about imperfection between sociocultural pressures and perceived appearance.

The tripartite influence model of body image is a theoretical approach that focuses on the direct effects of family, peer, media, and sociocultural appearance standards as possible leading factors for body dissatisfaction (Shroff & Thompson, 2006). According to the Tripartite Influence Model, ideal internalization and social comparisons are two processes that have been used to explain negative body image as a result of ideal body imagery exposure to peers, parents, and media pressure (Keery et al., 2004). Moreover, Vani et al. (2021) indicated that

these mechanisms are not distinct and can function mutually as the socially prescribed appearance ideals internalize by using social comparison, and socially constructed pressure on body image is also associated with perfectionism concerns about physical appearance (Williams, 2009). The path model in the present study largely supported the Tripartite Influence Model by demonstrating that perceived pressures from peers/significant others and media significantly contribute to worry about imperfection, which in turn negatively influences perceived appearance. Specifically, the results supported hypotheses H6 and H7, revealing that worry about imperfection acts as a mediating mechanism through which sociocultural pressures influence individuals' perceptions of their appearance. Similar with prior research (Keery et al., 2004; Shroff & Thompson, 2006), these results confirm that peers and media are salient social agents in the formation of body-related concerns. Previous studies have also highlighted that exposure to idealized body standards via media and social reinforcement from peers such as appearance-related conversations, teasing may contribute to body dissatisfaction (Roberts et al., 2022).

The mediating effect of worry about imperfection on the association between media pressure and perceived appearance can be explained by how society's ideal body standards are depicted in mass and social media. According to the Tripartite Influence Model, one of the most impactful sociocultural factors on body dissatisfaction and eating disorder is media which might include the internalization of media images and information provided by the media related to appearance messages and norms (Shroff & Thompson, 2006). Developing technological opportunities and the quickly rising popularity of social media have allowed people to see more body images through computers and mobile applications and media highlighted as the most powerful sociocultural transmitter of beauty ideals (Groez et al., 2002). Moreover, Gillen and Lefkowitz (2009) highlighted media as transmitting more negative messages compared to family, peers, and school. As a result of this mass ideal body image transmission, social media use, and body image disturbance was found to be related (Saiphoo & Vahedi, 2019). The media and the social media platforms such as Facebook, Instagram, etc. provided a basis for both propagating unrealistic and idealized appearance ideals by using filters to enhance the images (Simon et al., 2022). There were similar findings in the literature as Simon et al. (2022) indicated that physical appearance perfectionism specifically worries about imperfection mediates the relationship between social media platform addiction and body esteem. On the other hand, Xu et al. (2010) found that media positively contributed to body-related concerns; the negative association observed in the present study suggests that some

individuals may engage in critical evaluation or rejection of idealized media portrayals, potentially mitigating its effects on perfectionistic concerns. This highlights the complexity of media influence and suggests that individual differences, such as media literacy or coping strategies, may moderate its impact on body-related perfectionism. Furthermore, the source of the underlying cause of the pressure was highlighted as sociocultural sources, and the difference between Chinese and Turkish culture was also important on conflicting results (Xu et al., 2010). Finally, considering that participants of this study were adults, who may have more developed media literacy skills compared to younger populations, may dismiss or critically evaluate media images, reducing their perfectionistic concerns.

Another impactful sociocultural factor on body dissatisfaction in Tripartite Influence Model is peers, and the indirect effect of peers/significant others' pressure on perceived appearance was found to be significant and the fully mediated effect of worry about the imperfection in this study. Other studies have also reported peer pressure to be an important and negative variable in body image (Tsang, 2017). More specifically, Jankauskiene and Baceviciene (2021) demonstrated that the relationship between peers' pressure and appearance evaluation was significant, and mediated by the internalization of ideal things/low body fat among Lithuanian young adults. Similarly, significant associations of pressure family/peers muscularity with the internalization of thin/low body fat and internalization of muscular/athletic body were mediated by the appearance comparison among young French men (Girard et al., 2018). In our study, the same relationship was mediated by the worry about imperfection which individual's desire to reach high standards, and fear of negative criticism from other people when they are unable to reach the aimed standard. As peers may be seen as more attainable and having similar lifestyles and resources, engaging in peer appearance comparison might be more common for some adults (Fardouly & Vartanian, 2015). Hence, peers' appearance, information related to ideal physical appearance provided by the peers, or social norms in peer-group might cause pressure on adults, and this pressure might be associated with the fear of not reaching ideal body standards, in turn, low physical self-appearance perception. It is also important to note that peer and social media influence should be considered together because social media users generally follow their friends and see their posts constantly. Tiggemann et al. (2018) discussed that investment in likes was related to appearance comparison and facial dissatisfaction among young women.

Surprisingly, neither the direct effect of family pressure on worry about the imperfection nor the relationship between family pressure and perceived appearance mediated by worry about the imperfection were not significant in our study. This result contrasts with the Tripartite

Influence Model, which traditionally posits that parents play a key role in shaping body image concerns, particularly through direct and indirect mechanisms (Keery et al., 2004; Shroff & Thompson, 2006). This result might be associated with the worry about imperfection subscales' theoretical framework which indicates negative outcomes related to physical appearance. Family is generally highlighted as a transmitter of positive and healthful messages in the context of body and appearance (Gillen & Lefkowitz, 2009). On the other hand, family pressure can have a significant impact on the development of physical appearance perfectionism in individuals (Shroff & Thompson, 2006). However, studies indicate the significant role of family on physical appearance and perfectionism perceptions among adolescents. For example, Rodgers et al. (2009) indicated that parental pressure was a significant predictor of body dissatisfaction among adolescents. Moreover, there are a limited number of studies conducted with adult samples. To illustrate, similar to adolescents, Nikodijevic et al. (2015) reported family pressure as a significant predictor of body dissatisfaction, disordered eating behaviors, and low self-esteem in adult women.

While significant parental influence has been well-documented in adolescent populations (Rodgers et al., 2009; Shroff & Thompson, 2006), the lack of significance in the present study suggests that family pressure may become less relevant in shaping body-related perfectionism and appearance perception in adulthood. According to these studies, family pressure can manifest in various ways, such as comments about weight or appearance, pressure to conform to certain beauty standards, and criticism of one's appearance in adolescents and adult women. However, in our study, these associations were insignificant possibly due to the composition of the sample which includes adults and males. A possible explanation for these results may be associated with the age group of the study sample. The composition of the sample group is comprised of adult individuals and the notion that individuals are more influenced by their peers compared to their family during adulthood, while the influence of the family weakens with age. As individuals age, the number of resources they use to form their self-perceptions gradually decreases, and in adulthood, it is observed that these resources become significantly limited (Weiss & Amarose, 2005). This might be due to the accumulation of wealth of experiences and knowledge that shape their self-perceptions. These experiences may become more familiar and predictable in adulthood, leading to a narrower range of sources to draw upon for self-perception (Lachman, 2006). Another possible explanation for the non-significant effect of family pressure is that as individuals age, they gain independence from parental influence, relying more on peer networks, romantic partners, and media exposure for body-related

feedback (Oudekerk et al., 2015). To illustrate, adult body image concerns are more strongly shaped by social comparison among peers and romantic partners rather than by parental attitudes (Tylka, 2011). Thus, social networks tend to become smaller in terms of forming self-perception, and this reduction in social interactions limits the diversity of perspectives and feedback that individuals receive about themselves from others (Carstensen et al., 2003). As a result, as people transition into adulthood, parental involvement in shaping body image concerns diminishes, while peer and media influences become more dominant, reinforcing the idea that body-related perceptions are increasingly shaped by external social comparisons rather than familial expectations.

CONCLUSION

To conclude, in this study, The Tripartite Influence Model was replicated to examine its relationship with perceived appearance mediated by the physical appearance perfectionism in Turkish adults. The media and peers'/significant others' pressure were found to be significantly associated with perceived appearance mediated by worry about imperfection. The worry about imperfection was defined as an individual's desire to reach high standards and was found to be in relationship with body image disturbances regarding appearance and body shape may cause depression by social anxiety due to the fear of negative criticism from other people (Yang & Stoeber, 2012). Thus, individuals might tend to internalize the critiques or compare themselves with their family members, friends, or media and social media figures.

There were several limitations of the present study. First of all, this study was limited to the pressure aspect of the Tripartite Influence Model, worry about the imperfection subscale of the physical appearance perfectionism and the perceived appearance of the physical self-concept. Secondly, the questionnaire utilized two distinct subscales: Worry About Imperfection and Hope for Perfection. However, the 'Hope for Perfection' subscale was not included in the analysis, as the primary focus was on examining the impact of perceived social pressures on individuals' perceptions of their appearance. Given that social pressure is theoretically conceptualized as a negative influence, often linked to body dissatisfaction, perfectionistic tendencies, and self-criticism, the researchers aimed to maintain a consistent negative framework throughout the study. Moreover, the cross-sectional design prevents the establishment of causal relationships between perceived social pressures, worry about imperfection, and perceived appearance. Although the Tripartite Influence Model provides a

theoretical foundation for directional hypotheses, longitudinal or experimental research would be necessary to confirm whether social pressures directly lead to perfectionistic concerns and negative appearance perception, rather than these variables being bidirectionally or interactively related. The study relies on self-report measures, which are inherently subject to biases such as social desirability effects and retrospective distortions. Given that body image and perfectionism-related concerns are sensitive topics, participants may have underreported or overreported their experiences to align with socially acceptable norms. Another limitation of the study was the convenient sampling method which limit the generalizability of the study. Finally, data were collected during the COVID-19 pandemic, which affected daily physical activity, exercise, and eating behavior as well as work routines (Robinson et al., 2021).

Despite the limitations of the current study, this study contributes to existing knowledge of the causal relationship between perceived pressures on appearance and perceived appearance by providing mediating effects of worrying about imperfection. The findings suggest that peers/significant others and media pressures are significantly associated with worry about imperfection, and that worry about imperfection is significantly and inversely associated with perceived appearance. Based on these findings interventions should focus on developing media literacy programs, policies to regulate advertising, and peer support. Educating individuals about the influence of media on body image and providing strategies for developing healthy media consumption habits can contribute to reducing the negative impact of media pressure on physical appearance perfectionism. Secondly, developing policies to regulate mass and social media content promoting unrealistic beauty standards can help reduce pressure on physical appearance perfectionism. Encouraging supportive relationships and reducing negative peer pressure through the promotion of positive self-talk, empathy, and appreciation of diversity can help individuals develop a positive body image and diminish worry about imperfection. Lastly, intervention protocols may also include providing counseling and therapy services that address the underlying causes of worry about imperfection such as peers, significant others, and media pressures that can help individuals develop healthy attitudes toward their appearance.

Declaration of Conflicting Interests

The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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