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Moderating Role of Self-Compassion in the Relationships Between the Three Forms of Perfectionism with Anger, Aggression, and Hostility

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Abstract

The prevalence of aggression in adolescents is on the rise, and it could be a serious public health concern. Studies have found positive relationships between perfectionism with anger, aggression, and hostility. However, the moderating role of self-compassion in the links between perfectionism with anger, aggression, and hostility has not been studied. To better understand the relationships between the three forms of perfectionism with anger, aggression, and hostility, this study aimed to explore the moderating role of self-compassion. Participants were 380 undergraduates selected using a multi-stage cluster sampling technique from three universities in Iran. Participants completed the Self-Compassion Scale, the Multidimensional Perfectionism Scale, and the Aggression Questionnaire Scale. The results from structural equation modelling analysis showed that other-oriented perfectionism and socially prescribed perfectionism positively predicted anger, aggression, and hostility. The results showed that self-oriented perfectionism significantly and positively predicted anger and hostility; but there were no observed statistically significant relationships of self-oriented perfectionism with verbal aggression and physical aggression. The findings showed that self-compassion played a moderating role in the relationships between other-oriented perfectionism and socially prescribed perfectionism with anger, aggression, and hostility; however, it did not play a moderating effect on self-oriented perfectionism with anger, aggression, and hostility. The findings provide a deeper understanding of the moderating role of self-compassion in the links between other-oriented perfectionism and socially prescribed perfectionism with anger, aggression, and hostility among undergraduates. The findings of this study could be applicable for psychologists and counselors who deal with aggressive behavior, anger, and hostility in undergraduate students to assess the three forms of perfectionism and self-compassion.

Introduction

Research evidence has shown that the prevalence of aggression is on the rise, and it is a serious threat to public health (Finigan-Carr et al., 2016; Sharma & Marimuthu, 2014). In Iran, lifetime prevalence of aggression among adolescents' ranges from 30 to 65.5% and the rate of aggression is more than twice in males than females (Sadeghi et al., 2014). Undergraduate students are in their adolescent period, and studies have shown that undergraduates are more likely to experience high levels of pressure to succeed. They are more likely to show aggressive behaviors towards themselves, others and even the environment (Abdollahi et al., 2017b; Myburgh et al., 2020). Studies have shown that aggression is significantly associated with deviant behaviors, such as suicide

(Stanley et al., 2019), substance abuse (Sexton et al., 2019), and bullying (Crothers et al., 2019). Aggressive behaviors have adverse effects on interpersonal behaviors and intrapersonal states. Given the high prevalence rate of aggression and its undesirable outcomes for individuals and society, understanding variables related to expressions of aggression is a research priority.

Aggression, Anger, and Hostility

The term *aggression* is defined as an intentional behavior to hurt and injure others for obtained advantages (Lambe et al., 2018). Aggression comprises four dimensions, including anger, verbal aggression, physical aggression, and hostility (Buss & Perry, 1992). Aggression, whether verbal or non-verbal in expression, is defined as offensive and purposive behavior against others (Leary et al., 2006). Anger is defined as an emotional state response to social situations in which individuals perceive the situations as a threat or unpleasant (Novaco, 2011). Hostility is defined as an unpleasant behavior in which individuals perceive feelings of mistrust, pessimism, grudge, presentiment, and denigration (Cassiello-Robbins & Barlow, 2016).

Dimensions of Perfectionism

Perfectionism has traditionally been conceptualized as a unidimensional construct, focusing only on the clinical dimension of perfectionism (Shafran et al., 2003). Recent empirical efforts have found that perfectionism is a multidimensional construct, comprising self-oriented, other-oriented, and socially prescribed perfectionism. Self-oriented perfectionism refers to setting high personal standards and experiencing feelings of distress if failing to meet desired standards. Other-oriented perfectionism refers to having high expectations of others. Socially prescribed perfectionism refers to the expectations and beliefs that others expect perfectionism in one's performance (Hewitt et al., 2006; Hewitt & Flett, 1991). Perfectionism is a global concept among people around the world, and do not consider it specific to a particular culture and society.

Relationships Between Perfectionism with Aggression, Anger, and Hostility

Perfectionists are more likely to have interpersonal relationship problems or difficulties in interactions with others; so, it is likely that they avoid engaging in social interactions and may experience a sense of hostility and anger to others (Sherry et al., 2016). Other-oriented perfectionists in social interaction situations are more likely to blame others, to criticize others, to have high expectations of others, to have less empathy to others (Stoeber et al., 2017; Vicent et al., 2018), and are more likely to show anger, hostility, and aggressive behaviors to others (Jeffrey & Langhinrichsen-rohling, 2005). Socially prescribed perfectionists are more likely to involve self-critical pressure and experiencing a sense of inferiority. These conditions may lead them to think others do not care

about them and impede them from having positive interpersonal relationships with others and, in turn, may contribute to aggressive behavior, anger, and hostility.

Findings from previous studies have shown that perfectionism is considered as a facilitative or debilitative factor in explaining dimensions of aggression (Chester et al., 2015; Stoeber et al., 2017; Vicent et al., 2017). For example, some studies have shown that self-oriented perfectionism was positively associated with anger (Blankstein & Lumley, 2008; HyunMyoungHo, 2009), hostility (Besser et al., 2004; Lee & Park, 2010), and aggression (Vicent et al., 2018). In contrast, another study showed a negative relationship between self-oriented perfectionism with hostility and aggression, and showed a positive association with humanism, intimacy, and sense of humor (Stoeber et al., 2017).

In another study, Hewitt et al. (2017) found that self-oriented perfectionism is also associated with social interaction problems as well as hostility and aggression. This result suggests that self-oriented perfectionists are more likely to focus on personal goal achievements and less attention to interpersonal relationships. Consequently, they are more likely to experience social disconnection, social hostility, and aggression to others. In line with the Perfectionism Social Disconnection Model (PSDM; Hewitt et al., 2006), studies have shown that other-oriented and socially-oriented perfectionism are associated with anger, hostility, and aggression (Chester et al., 2015; Stoeber et al., 2017).

Moderating Role of Self-Compassion

Given the contradictory relationships between dimensions of perfectionism and aggression in previous studies (Stoeber et al., 2017; Vicent et al., 2018), it seems plausible that something could be playing a moderating role in these relationships. One potential moderator in these relationships is self-compassion. Self-compassion is a tendency to evaluate self-worth instead of evaluating one's own shortcomings and deficiencies. Self-compassion focuses on self-kindness, common humanity, and mindful acceptance (Neff, 2003, 2011). Self-kindness is defined as kindness, tenderness, and support to oneself instead of self-criticism, self-judgment, and self-punishment in the face of shortcomings and obstacles. Common humanity is defined as seeing negative experiences and mistakes as part of human experiences, instead of feeling shame and guilt. Mindful acceptance is defined as awareness and acceptance of painful experiences and thoughts without suppression and exaggeration (Neff, 2003, 2011).

There are several reasons why self-compassion could play a moderating role between perfectionism and aggression. First, self-compassion is in contrast with the features of perfectionism, such as self-criticism, other-criticism, self-blame, other-blame, negative self-evaluation, negative-other evaluation, self-condemnation, and other-condemnation (Mehr & Adams, 2016). Second, self-compassion not only helps individuals to have a positive self-appraisal but also helps them to accept their own and others' limitations as human experiences rather than to hide limitations, to limit social interactions, and to behave in aggressive manners (Long & Neff, 2018; Neff &

McGehee, 2010). Therefore, it is conceivable that individuals with high levels of self-compassion are more likely to avoid harsh self-judgment or other judgment, and have a tendency to connect with others, accept their own and others' feelings, thoughts, and worth, which may reduce their anger to others (Neff & Vonk, 2009), aggression (Barry et al., 2015; Fresnics & Borders, 2017), and hostility (Morley et al., 2016). Self-compassion is generally related with prosocial behavior and opposite with antisocial behavior (Stosny, 1995). Studies have shown that self-compassion is negatively associated with anger (Neff & Vonk, 2009), aggression (Fresnics & Borders, 2017), and positively associated with forgiveness and altruism (Wu et al., 2019).

The current study hypothesized: (a) there will be significant relationships between three dimensions of perfectionism and anger, aggression and hostility, and (b) self-compassion will act as a moderator in the relationships between three forms of perfectionism with anger, aggression, and hostility among university students.

Methods

Participants

The survey research method was employed to select 380 undergraduate students (female = 61%, n = 232 and male = 39%, n = 148) with average age of 19.77 years (SD = 1.81; age range of 18–27) from three universities in Tehran, Iran, namely Alzahra University, Shahid Beheshti University, and Tehran University. The educational levels of undergraduates were diverse, with 27.9% freshman (n = 106), 25% (n = 95) sophomore, 27.1% (n = 103) junior, and 20% (n = 76) senior. Of the 380 participants, 341 (90%) were singles and all were Iranians and Muslims.

Measures

Self-Compassion Scale (SCS; Neff, 2003) is a self-report measure comprising 24 items across six subscales, including self-kindness, common humanity, mindfulness, self-judgment, isolation, and over-identification. Each subscale contains four items scored on a 5-point scale ranging from 1 (*almost never*) to 5 (*almost always*). The marks range from 24 to 120, with higher scores suggesting greater levels of self-compassion. Sample items include "*I try to be loving towards myself when I'm experiencing emotional pain.*" This study used the Iranian version of the SCS (Azizi et al., 2013). Cronbach alpha for this measure in the current sample was .88.

Multidimensional Perfectionism Scale (MPS; Hewitt & Flett, 1991) is a self-report measure comprising 45 items designed to evaluate three dimensions of perfectionism, including self-oriented perfectionism, other-oriented perfectionism, and socially prescribed perfectionism. Each subscale contains 15 items scored on a 7-point scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). The overall score for each dimension is from 15 to 105, with higher scores suggesting greater levels of perfectionism. Sample items include *"One of my goals is to be perfect in everything I do."*

An Iranian version of this measure was used in this study (Aminizadeh et al., 2013). In the current sample, the Cronbach alphas for self-oriented perfectionism, other-oriented perfectionism, and socially prescribed perfectionism were .79, .81, and .82, respectively.

Aggression Questionnaire Scale (AQS; Buss & Perry, 1992) is a self-report measure comprised of 29 items across four subscales, including anger (items 15–21), hostility (items 22–29), verbal aggression (items 10–14), and physical aggression (items 1–9). Items are scored on a scale ranging from 1 (*extremely uncharacteristic of me*) to 5 (*extremely characteristic of me*) and higher scores indicate higher aggressive behavior. Sample items include *"I am suspicious of overly friendly strangers."* This measure has good reliability (Webster et al., 2014). For this study, the AQS was translated from English to Persian, then back-translated into English (Brislin, 1980). Three experts compared the three versions of the questionnaire, in order to ensure the accuracy of items for each version. Cronbach alphas for the translated subscales of anger, hostility, verbal aggression, and physical aggression in the current sample were .81, .83, .82, and .86, respectively.

Procedure

Data were collected from undergraduates after obtaining ethical approval from Alzahra University Ethics Committee as well as permission to distribute questionnaires to the undergraduates from Deans of the participating universities. Data were collected from the middle of November to the end of December 2018. Before distributing questionnaires, the purpose of study was explained and participants were informed that participation was voluntary and that information would be kept confidential. Three faculties of psychology were selected from three universities. Then, four classes from each faculty were randomly selected according to the student's year grade. After provision of consent, questionnaire packets were distributed to participants in the class, participants were given 30 minutes to complete, and questionnaires were returned to the researchers.

Results

Preliminary Analysis

Before the research hypotheses were tested in AMOS 24 software (Arbuckle, 2006), a number of preliminary analyses, such as identification of missing data, outliers, and normality were conducted. The missing data for the items ranged from 1.3 to 3.3% and were addressed by the regression imputation method. Outliers were checked through the Mahalanobis d-square, and 16 cases were identified as outliers because the values were greater than 2.5 (Tabachnick & Fidell, 2012). Values of skewness (−0.821–1.96) and kurtosis (−0.154–2.136) reflected the data were distributed normally, being within respective cutoff scores of ± 2 and ± 3 (Tabachnick & Fidell, 2012).

Table 1. Correlations, Means, Standard Deviations, Real Range, Skewness, and Kurtosis of the Study Variables.

	1	2	3	4	5	6	7	8
(1) Self-oriented perfectionism	1							
(2) Other-oriented perfectionism	.39**	1						
(3) Socially- oriented perfectionism	.37**	.36**	1					
(4) Physical aggression	−0.07	.21*	.18*	1				
(5) Verbal aggression	0.05	.19*	.22*	.31**	1			
(6) Anger	.11*	.21*	.25*	.32**	.31**	1		
(7) Hostility	.19*	.23*	.39**	.31**	.34**	.38**	1	
(8) Self-compassion	−.18*	−.24*	−.29**	−.34**	−.32**	−.38**	−.36**	1
Mean	67.12	63.15	64.32	29.64	16.11	21.45	21.14	60.12
Standard deviation	4.13	5.14	5.23	2.13	2.11	2.13	2.19	8.18
Real range	15–105	15–105	15–103	9–61	5–35	7–45	9–53	25–111
Skewness	.821	0.972	1.123	1.76	1.96	1.34	.973	1.32
kurtosis	2.121	1.89	2.136	1.88	1.56	1.98	1.11	1.23

Note. *$p<.05$ and **$p<.01$

Descriptive Statistics

Table 1 presents the mean, standard deviations, real range, skewness, and kurtosis for all measured variables. The results of bivariate linear correlation analysis showed positive and significant associations between the three forms of perfectionism. Self-compassion negatively correlated with the three forms of perfectionism, verbal aggression, physical aggression, anger, and hostility. Other-oriented perfectionism and socially prescribed perfectionism positively correlated with verbal aggression, physical aggression, anger, and hostility; but no significant correlation was observed between self-oriented perfectionism with physical aggression and verbal aggression (see Table 1).

Measurement Model for Each Scale

A confirmatory factor analysis carried out on self-compassion (24 items), the three forms of perfectionism (each form of perfectionism comprises 15 items), verbal aggression (five items), physical aggression (nine items), anger (seven items), and hostility (eight items). Confirmatory factor analysis results showed that the factor loadings of the items ranged between .41 and .85 (see Table 2), which were greater than the cut-off score value of .4 (Hair et al., 2013). Consequently, the measures were considered appropriate in this study.

Table 2. Factor Loadings for the Items.

Items	Factor Loadings	Items	Factor Loadings	Items	Factor Loadings	Items	Factor Loadings
Self-Compassion Scale		Aggression Questionnaire Scale		Multidimensional Perfectionism Scale		Multidimensional Perfectionism Scale	
SCS1	.52	AQS1	.76	MPS1	.41	MPS23	.55
SCS2	.56	AQS2	.41	MPS2	.44	MPS24	.67
SCS3	.63	AQS3	.66	MPS3	.56	MPS25	.76
SCS4	.66	AQS4	.65	MPS4	.66	MPS26	.71
SCS5	.72	AQS5	.47	MPS5	.52	MPS27	.56
SCS6	.71	AQS6	.54	MPS6	.76	MPS28	.55
SCS7	.54	AQS7	.56	MPS7	.55	MPS29	.59
SCS8	.81	AQS8	.72	MPS8	.53	MPS30	.61
SCS9	.82	AQS9	.74	MPS9	.58	MPS31	.53
SCS10	.74	AQS10	.52	MPS10	.65	MPS32	.56
SCS11	.55	AQS11	.56	MPS11	.74	MPS33	.66
SCS12	.48	AQS12	.55	MPS12	.85	MPS34	.49
SCS13	.58	AQS13	.53	MPS13	.82	MPS35	.51
SCS14	.69	AQS14	.67	MPS14	.78	MPS36	.53
SCS15	.63	AQS15	.85	MPS15	.72	MPS37	.68
SCS16	.68	AQS16	.67	MPS16	.54	MPS38	.81
SCS17	.54	AQS17	.56	MPS17	.59	MPS39	.82
SCS18	.55	AQS18	.65	MPS18	.65	MPS40	.66
SCS19	.67	AQS19	.62	MPS19	.66	MPS41	.67
SCS20	.66	AQS20	.57	MPS20	.56	MPS42	.68
SCS21	.72	AQS21	.52	MPS21	.78	MPS43	.81
SCS22	.75	AQS22	.73	MPS22	.77	MPS44	.55
SCS23	.77	AQS23	.83			MPS45	.58
SCS24	.79	AQS24	.64				
		AQS25	.53				
		AQS26	.55				
		AQS27	.48				
		AQS28	.58				
		AQS29	.62				

The following measurement fit indices were preferred for assessing of model fit: Comparative Fit Index (*CFI*) > .90; Tucker–Lewis index (*TLI*) > .90; Goodness of Fit Index (*GFI*) > .90; Root Mean Squared Error of Approximation (*RMSEA*) < .08; and CMIN/df < 5 (Byrne, 2013). As shown in Table 3, all measurement fit indices met the criteria of the model fit.

Table 3. Measurement Model for Each Scale.

| Measurement Model	CMIN/df	RMSEA	CFI	GFI	TLI
Self-oriented perfectionism	3.14	.06	.92	.93	.91
Other-oriented perfectionism	2.91	.05	.93	.94	.92
Socially- oriented perfectionism	4.11	.07	.92	.92	.93
Physical aggression	4.82	.08	.91	.90	.91
Verbal aggression	3.25	.07	.92	.93	.92
Anger	4.43	.07	.93	.92	.92
Hostility	3.36	.07	92	.92	.91
Self-compassion	4.67	.07	.91	.90	.91

Measurement Model for All Scales

The measurement model, which involved self-compassion, the three forms of perfectionism, verbal aggression, physical aggression, anger, and hostility as latent variables, showed adequate goodness of fit indices: $CMIN/df = 4.61, p < .01, CFI = .91$, $GFI = .90, TLI = .90$, and $RMSEA = .08$.

Structural Model

The results of the structural model suggested an adequate model fit ($CMIN/df = 4.71$, $p < .01$, $CFI = .90$, $GFI = .90$, $TLI = .89$, and $RMSEA = .08$). The structural model is described in Figure 1 and showed self-compassion negatively predicted verbal aggression ($\beta = -.32, p < .01$), physical aggression ($\beta = -.33, p < .01$), anger ($\beta = -.36$, $p < .01$), and hostility ($\beta = -.35, p < .01$). The results indicated that socially prescribed perfectionism and other-oriented perfectionism positively predicted verbal aggression, physical aggression, anger, and hostility. Self-oriented perfectionism positively predicted anger ($\beta = .11, p < .05$) and hostility ($\beta = .17, p < .05$) but had no significant relationships with verbal aggression ($\beta = .04, p = .88$) and physical aggression ($\beta = -.04, p = .81$). The three forms of perfectionism and self-compassion explained variance in verbal aggression, physical aggression, anger, and hostility 33, 32, 37, and 34%, respectively.

Moderation Test of Self-Compassion

A multi-group analysis was used to test the moderating role of self-compassion between the three forms of perfectionism with verbal aggression, physical aggression, anger, and hostility (Preacher & Hayes, 2008). K-means cluster analysis was used to identify clusters in the centroid self-compassion variable with 10 iterations in SPSS 24 software. K-means cluster analysis identified two clusters as a low self-compassion group with 170 (45%) participants and the high self-compassion group with 210 (55%) participants.
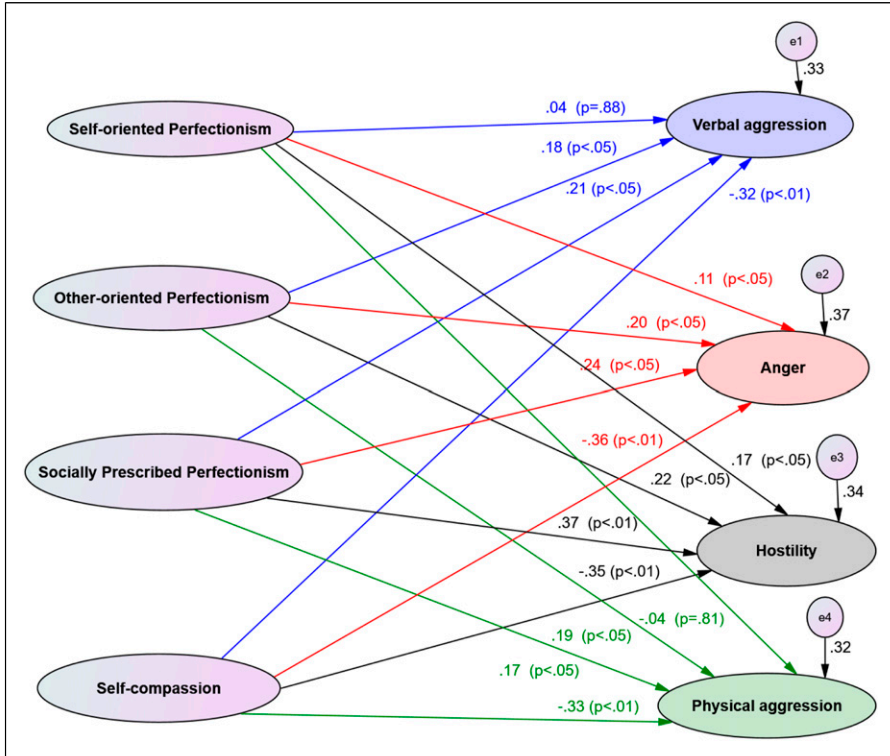
Figure 1. Structural model for the anger, hostility, verbal aggression, and physical aggression.

In order to explore the moderating role of self-compassion, the variant-group model and the invariant-group model should be compared based on fit indices. If the fit indices for the variant-group model show better fit than the invariant-group model, this indicates the differences in the proposed model between the low self-compassion group and the high self-compassion group. The self-compassion variable is deemed to have a moderating role if it meets at least one of these two conditions: (1) the path is statistically significant for one group and statistically non-significant for the others group, or (2) the regression coefficient sign for one group is positive and for the other group is negative (Byrne, 2013).

Given that the fit indices for the variant-group model ($\chi^2 = 3.62$, $p < .01$, $RMSEA = .07$, $CFI = .91$, $GFI = 0.90$, $NFI = .91$) were better than the fit indices of the invariant-group model ($\chi^2 = 5.17$, $p < .01$, $RMSEA = .09$, $CFI = .85$, $GFI = .84$, $NFI = .83$), it can be concluded the differences in the proposed model between the two self-compassion groups. The findings are shown in Table 4 and indicate that self-compassion does not play a moderating role in the relationships between self-oriented perfectionism with verbal aggression, physical aggression, anger, and hostility, whereas it does play a moderating role in the relationships between other-oriented perfectionism and socially prescribed perfectionism with verbal aggression, physical

Table 4. Standardized Regression Weights (Self-Compassion-Variant Model).

Hypothesis			S.E.	C.R.	Standard Estimate
Physical aggression	<---	Self-Oriented Perfectionism	3.39 (5.29)	−1.03 (−1.48)	−.03 (-.07)
Verbal aggression	<---	Self-Oriented Perfectionism	4.87 (1.15)	1.60 (1.02)	.04 (.06)
Anger	<---	Self-Oriented Perfectionism	3.24 (2.94)	1.99 (1.97)	.15* (.11*)
Hostility	<---	Self-Oriented Perfectionism	2.87 (3.11)	2.21 (1.99)	.21* (.17*)
Physical aggression	<---	Other Oriented Perfectionism	4.11 (5.23)	2.24 (1.68)	.23* (.05)
Verbal aggression	<---	Other Oriented Perfectionism	4.93 (5.32)	2.32 (1.71)	.22* (.08)
Anger	<---	Other Oriented Perfectionism	3.75 (2.94)	2.65 (1.32)	.24* (.04)
Hostility	<---	Other Oriented Perfectionism	2.11 (3.23)	2.61 (1.85)	.27** (.09)
Physical aggression	<---	Socially Oriented Perfectionism	4.23 (5.13)	2.62 (1.53)	29** (.04)
Verbal aggression	<---	Socially Oriented Perfectionism	3.43 (4.32)	2.68 (1.87)	.31** (.09)
Anger	<---	Socially Oriented Perfectionism	3.64 (3.28)	2.72 (1.82)	.32** (.08)
Hostility	<---	Socially Oriented Perfectionism	3.75 (3.72)	2.75 (1.81)	.29** (.09)

Note: Results for the low self-compassion group are presented first, and results for high self-compassion group are presented in parentheses.
Note: *p <.05, **p <. 01, SE = standard error, and CR = critical ratio.

aggression, anger, and hostility. As in the high self-compassion group, the magnitude of relationships between other-oriented perfectionism and socially prescribed perfectionism with verbal aggression, physical aggression, anger, and hostility were weaker than the low self-compassion group.

Moderation Test of Gender

In order to compare between the female group and male group in the proposed model, multi-group analysis was performed. The findings revealed that the fit indices for the variant-group model ($\chi^2 = 5.21$, $p < .01$, *RMSEA* = .18, *CFI* = .71, *GFI* = 0.74, *NFI* = .75) did not better than the fit indices of the invariant-group model ($\chi^2 = 5.19$, $p < .01$, *RMSEA* = .21, *CFI* = .73, *GFI* = .78, *NFI* = .79), suggesting that gender groups did not moderate the proposed model.

Discussion

The purpose of this study was to better understand the relationships of various forms of perfectionism with anger, aggression, and hostility and examine the moderating role of

self-compassion among Iranian undergraduates. In Iranian culture, having a good life is considered as a personal and social value. Society, government, and families encourage individuals to achieve a desirable life. They encourage individuals to obtain high-level jobs, high-level education, luxury houses and cars, and other facilities (Kianpour, 2021; Zarghami-Hamrah & Barkhordari, 2020). Individuals in this situation set high standards for themselves to achieve a desired life and may predispose individuals more involved in perfectionism. In recent decades, Iranian culture also has shifted from collectivism to individualism. In an individualistic culture, achievement for individuals is more important than the achievement for a group and the competition to achieve the goals among individuals is increased (Abdollahi et al., 2017a). In competitive situations, individuals are more likely to experience frustration and may experience anger, aggression, and hostility (Esfahani & Besharat, 2010). For example, there is an entrance exam to gain admission to higher education in Iran. Individuals, families, and the society expect students to be accepted into the excellent universities. Such expectations may lead to high levels of perfectionism in individuals, and due to the limited student selection at universities, there is a possibility that they may not be accepted, and may experience frustration that contributes to experience anger, aggression, and hostility (Abdollahi et al., 2020). Therefore, it is predictable that perfectionism, anger, aggression, and hostility become more prevalent among Iranians. According to the cultural conditions in Iran, the research findings are interpreted based on previous Iranian studies as below.

Consistent with prior Iranian study, our analyses indicated that undergraduate participants who reported higher levels of other-oriented perfectionism and socially prescribed perfectionism also reported higher levels of verbal aggression, physical aggression, anger, and hostility (Besharat & Shahidi, 2010). These findings are in line with the PSDM (Hewitt et al., 2006), which states that other-oriented and socially prescribed perfectionists have high expectations of others and society, and that they are prone to experience dissatisfaction, frustration, and social disconnection if the standards they set for others and society deviate from their expectations. Also consistent with prior studies (Stoeber, 2015; Stoeber et al., 2017), our findings showed that self-oriented perfectionism had statistically significant relationships with anger and hostility but not with verbal aggression and physical aggression. This finding is in line with an Iranian study that revealed individuals with predispositions of anger set high standards for themselves, have negative self-evaluation, have self-blame, and their self-worth extremely depend on achieving their goals (Besharat & Shahidi, 2010). One possible clarification for the positive relationships between self-oriented perfectionism with anger and hostility is that self-oriented perfectionists in competitive settings like to be better than others, prefer mistakes do not happen, and believe that standards imposed by others are not fair (Sherry et al., 2016), making them prone to experience anger and hostility. To explain a non-significant relationship between self-oriented perfectionism and verbal and physical aggression among Iranian undergraduates, it can be said that individuals with high levels of self-oriented perfectionism are more likely to use flexible manners to achieve their goals and they are more likely to enjoy the process of

achieving goals rather than achieving the goals. Therefore, people with self-oriented perfectionism experience more pleasure and satisfaction rather than dissatisfaction and aggression.

The findings from multi-group analysis showed, as predicted, that self-compassion played a moderating role in the relationships between other-oriented perfectionism and socially prescribed perfectionism with anger, hostility, and aggression. In other words, those with other-oriented perfectionism and socially prescribed perfectionism are more likely to experience anger, hostility, and aggression when self-compassion is low. One possible interpretation is that self-compassionate individuals are less likely to criticize, judge, or blame themselves and others in instances where expectations are not met (Ferrari et al., 2018). This may reduce the experience and expression of aggressive behaviors, hostility, and anger. This is consistent with findings that suggest self-compassion helps individuals to avoid being critical of others, to accept their own and others' deficiencies, to regulate their own and others' emotions, and to promote forgiveness in oneself and others (Cleare et al., 2019). These valuable characteristics of self-compassion could serve as a buffer for the destructive characteristics of perfectionism against their experiencing of aggressive behaviors, hostility, and anger. For example, perfectionists are more likely to be involved in deficiencies, shortcomings, harshly criticizing self and others, which may increase their dissatisfaction. Although self-compassion helps individuals to accept their own and others' shortcomings and not criticize to self and others, non-judgement behaviors, and forgiving self and others (Bakker et al., 2019). Farsi-speaking practitioners and researchers are more likely to have encountered compassion, as it is understood in the Islamic tradition. As such, while the loving-kindness aspect is represented by the ihsan (benevolence) aspect of Islamic compassion, there are two additional aspects—rahma (mercy) and adl (fairness/justice)—which may also occur to Farsi speakers (Alharbi & Al Hadid, 2019). Of course, a diverse understanding of compassion across cultures is not in and of itself a problem. However, a universally agreed upon understanding of the construct may be useful for researchers and practitioners who wish to communicate their work to one another meaningfully and effectively; especially if they come from a diverse range of cultural and disciplinary backgrounds. Therefore, self-compassion could be considered a protective factor against anger, aggression, and hostility among other-oriented perfectionists and socially prescribed perfectionists.

Implications of study

This study confirmed prior findings that other-oriented perfectionism and socially prescribed perfectionism are associated with anger, hostility, and aggression in undergraduate students (Stoeber et al., 2017; Vicent et al., 2018). Therefore, psychologists and counselors who deal with aggressive behavior, anger, and hostility in undergraduate students should consider assessing and determining the contribution that various forms of perfectionism are playing a role. They should also assess self-

compassion and, where feasible, incorporate self-compassion therapy to diminish the negative effects of perfectionism on anger, hostility, and aggression.

Limitations of study

Although this study highlighted the moderating role of self-compassion in the relationships between the three forms of perfectionism with anger, aggression, and hostility, there are several limitations for generalizability of the findings. One of the most important limitations is the cross-sectional nature of the study and therefore causal conclusions cannot be made. Replicating this study using longitudinal or experimental designs are warranted. Another limitation pertains to the nature of the sample—undergraduate students from Tehran, Iran. Replication of other populations and other geographical regions is warranted. The next limitation is about self-report measures, which are susceptible to bias and fabrication. Future studies could use interviews in addition to self-report measures. Finally, only the moderation role of self-compassion was assessed. Future studies could explore other potential moderators, such as emotional regulation and hardiness. The strengths of this study are employing adequate sample size ($n = 380$) and utilizing valid and reliable questionnaires to measure the studied variables.

Conclusion

This study provides a deeper understanding of the moderation effect of self-compassion as a buffer in the links between the three forms of perfectionism with anger, aggression, and hostility among undergraduates. Results suggest that interventions designed to enhance self-compassion may be effective in reducing expressions of aggression in Iranian undergraduate students who have high other-oriented and socially prescribed perfectionism. Whether these findings generalize to other populations remains to be determined.

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