

An Etiological and Maintenance Model of Perfectionism

Abbas Pourshahbaz (✉ a.pourshahbaz@uswr.ac.ir)

Department of Clinical Psychology, University of Social Welfare and Rehabilitation Sciences, Tehran, Iran.

Reza Moloodi

Substance Abuse and Dependence Research Center, University of Social Welfare and Rehabilitation Sciences, Tehran, Iran.

Parvaneh Mohammadkhani

Department of Clinical Psychology, University of Social Welfare and Rehabilitation Sciences, Tehran, Iran.

Ladan Fata

Iran University of Medical Sciences

Masoumeh Barani

Department of Clinical Psychology, University of Social Welfare and Rehabilitation Sciences, Tehran, Iran.

Sarah J. Egan

Curtin University

Ata Ghaderi

Karolinska Institute

Research Article

Keywords: Perfectionism, Major depressive disorder, Social anxiety disorder, Obsessive-compulsive disorder, Eating Disorders

Posted Date: January 19th, 2022

DOI: <https://doi.org/10.21203/rs.3.rs-1235520/v1>

License:  This work is licensed under a Creative Commons Attribution 4.0 International License. [Read Full License](#)

Abstract

Background: The present study aimed to test a model of perfectionism investigating parenting style, early maladaptive schemas and sensitivity to reinforcement theory.

Methods: A general population sample (n=384), and a clinical sample consisting of individuals with major depressive disorder (n=40), social anxiety disorder (n=35), obsessive compulsive disorder (n=39), and eating disorders (n=38) completed measures of parenting, early maladaptive schemas, perfectionism, inhibition/approach system, avoidance and overcompensation coping styles, and psychological distress.

Results: The path analysis indicated that the model fits with data from both samples.

Conclusion: The results indicate that future research should further investigate a range of variables to further understand perfectionism.

Background

Perfectionism has been proposed as a transdiagnostic process (1), and there is a consistent relationship between perfectionism and anxiety disorders, Obsessive Compulsive Disorder (OCD), depression and Eating Disorders (EDs) (2). Also, cognitive behavioral therapy of perfectionism reduces depression, anxiety, and eating disordered symptoms regardless of primary diagnosis (3).

Previous research has investigated models of etiology in perfectionism (4). Maloney et al. (4) examined the relationship between parenting styles, parent's attachment to the child, neuroticism, maladaptive schemas according to Young's model (5) and perfectionism as measured by Concern over Mistakes, Personal standards, and Doubts About Actions subscales of Frost Multidimensional Perfectionism Scale (6).

Structural equation modeling showed a direct relationship between parent's excessive expectations, and criticism and perfectionism. Schemas of Disconnection/Rejection domain mediated the relationship between parent's attachment to the child and perfectionism. The relationship between neuroticism and perfectionism was found to be mediated by schemas of Disconnection/Rejection. Boone et al. (7) also found significant association between perfectionistic concerns as measured by the Concern over Mistakes and Doubts about action subscales (6) and schemas of Disconnection/Rejection, Impaired Autonomy and Performance, Other Directedness, and Over-vigilance and Inhibition in a sample of eating disorder women. In contrast, Boone et al. (7) found that Personal Standard subscale (6) had a significant association with Over Vigilance and Inhibition. The results of this study showed that only Perfectionistic Concerns significantly mediated the relationship between schemas of Disconnection/Rejection, Other Directedness and body image concerns. However, further research is required to more thoroughly examine the relationship between perfectionistic strivings and perfectionistic concerns and early maladaptive schemas to understand the relationship between these schemas and perfectionism.

Another process which may be useful to examine in relation to perfectionism is avoidant or overcompensation coping styles. According to early maladaptive schema theory (5), when individuals use avoidance as a coping style, "they try to arrange their lives so that the schema is never activated" (p 34).

When individuals overcompensate, “they fight the schema by thinking, feeling, behaving, and relating as though the opposite of the schema were true” (p34). Reinforcement Sensitivity Theory (8) may potentially be useful on examining why individuals choose a specific avoidance or overcompensation behavior or coping style.

Reinforcement Sensitivity Theory states that Behavioral Approach System (BAS), Behavioral Inhibition System (BIS), and Fight, Flight and Freeze System control emotion and behavior. The Behavioral Approach System is activated by conditional/unconditional reinforcement or relief from punishment, and evokes approach behaviors. Behavioral Inhibition System activates in the face of conflictual situations (approach-avoidance). Fight, Flight, and Freeze System is related to fear. In relation to perfectionism, it seems that when individuals perceive the achievement of perfectionistic goals as impossible (aversive stimulus), the Behavioral Inhibition System is activated and provokes avoidant behaviors such as avoidance, procrastination, and abandonment of unfinished tasks. Some studies confirm this hypothesis. Warnke et al. (9) reported that experiential avoidance serving as the mediator between behavior inhibition sensitivity and [post-traumatic stress](#). Williams et al. (10) also found that BIS system correlated with emotion- and avoidance-focused coping strategies and this relationship was mediated by cognitive appraisal.

On the contrary, in situations where it is possible to achieve ambitious goals (reinforcement stimulus), the Behavioral Approach System activates approach behaviors. Also, in the time of achieving the goals, the Behavioral Approach System resets new and more ambitious goals. Although evidence on relationship between Behavioral Inhibition System and avoidant behaviors are promising, no published study has been done on the relationship of Behavioral Approach System and overcompensation behaviors. Therefore, in the present study we aimed to explore the relationship between Behavioral Approach/Inhibition Systems and avoidance and overcompensation coping styles in the context of perfectionism.

The aim of this study was to examine various processes which may be related to perfectionism in both a non-clinical and clinical sample in order to inform future treatment research. Perceived parenting, early maladaptive schemas, avoidance and overcompensation coping styles, and Behavior Inhibition/Approach Systems were examined in relation to perfectionism in community and clinical (patients with Major Depressive Disorder, Obsessive-Compulsive Disorder, Social Anxiety Disorder, and Eating Disorders) samples. Specifically, a model was tested where perceived maladaptive parenting styles (e.g. affectless, perfectionistic/ punitive, emotionally deprivating, permissive, overprotective parenting) were hypothesized to be associated with schemas of Disconnection/ Rejection, Impaired Autonomy and Performance, which in turn were associated with Perfectionistic Strivings and Perfectionistic Concerns. Also, we hypothesized Perfectionistic strivings predict overcompensation coping style through Behavioral Approach System. And, Perfectionistic Concerns predict avoidance coping style through Behavioral Inhibition System. Avoidance coping and overcompensation coping styles will be associated with psychological distress. Based on the Young Schema theory (5), the direct effect between early maladaptive schemas and overcompensation and avoidance styles and psychological distress was freed within the model (see figure 1).

Methods

Participants

The present study was part of a larger cross-sectional project investigating the etiological and maintaining mechanisms of perfectionism through structural equation modeling. Therefore, some parts of the method section are identical to previously published articles(11-13).Participants were recruited from the general population and clinics. The general population sample included 403 participants (204 women) in Tehran, Iran. They were selected via proportional quota sampling based on the last census data of Statistical Center of Iran (2011). Inclusion criteria were being between 18- and 50-yearsold, having completed high school in order to sure that they understand the content of the items accurately, and living in Tehran for at least 6 years. Nineteen participants had skipped more than 10% of the items. Therefore, the data of 384 subjects were analyzed. The mean age of the general population was 33.03 ($SD= 9.38$).

The clinical sample consisted of individuals who met the DSM 5 criteria for MDD ($n=40$, 65% women), OCD ($n= 39$, 61.5% women), SAD ($n= 35$, 74% women), or EDs ($n= 38$ women, 81.5% bulimia nervosa, 18.5% anorexia nervosa). The mean age of the four clinical groups were as follow: MDD = 29.87 ($SD= 5.94$); OCD = 31.25 ($SD= 5.52$); SAD = 28.37 ($SD= 6.37$); and EDs = 30.38 ($SD= 5.55$).

Measures

Clinical Perfectionism Questionnaire (CPQ)

The CPQ (14) assesses cognitive, emotional and behavioral components of clinical perfectionism over the past month by means of 10 items that are rated on a four-point Likert scale (from “not at all” to “all of the time”). Moloodi et al. (11) demonstrated the validity and reliability of the Persian version of the CPQ and reported that the CPQ captures two factors named Personal Standards (PS) and Evaluative Concern (EC).

Perfectionism Inventory (PI)

Hill et al. (15) developed a 59-item Perfectionism Inventory where participants respond on a 5-point scale from strongly disagree to strongly agree. Jamshidi et al. (16) reported satisfactory structural validity, convergent validity, and internal consistency for the Persian version of PI. We used Organization, Planfulness, and Striving for Excellence subscales of Perfectionism Inventory and Personal Standards subscale of Clinical Perfectionism Questionnaire (14) to measure Perfectionistic strivings. We utilized Concern over Mistakes, Need for Approval, and Rumination subscales of Perfectionism Inventory and Evaluative Concerns subscale of Clinical Perfectionism Questionnaire (14) to assess Perfectionistic Concerns.

Depression Anxiety Stress Scales-21 (DASS-21)

The DASS-21 is a self-report instrument consisted of three subscales that measure symptoms of depression, anxiety, and stress over the past week. Participants were asked to answer the items using a 0 (did not apply to me at all) to 3 (apply to me very much) scale. The Persian version of the DASS-21 has acceptable construct and convergent validity as well as internal consistency (17).

Young Parenting Inventory (YPI)

The YPI is a 72 item questionnaire which assesses developmental origins of early maladaptive schemas and perceived parenting. Participants were asked to rank their parent's behaviors separately using a 6 Likert scale (1 = Completely untrue, to 6 = Describes him/her perfectly). Validity and reliability of the YPI has been established in Western population (18). To our knowledge, there is no study that investigate factor structure of the YPI in Iranian population. Thus, we explored factor structure of the YPI in the current samples. The result of exploratory factor analysis on data of both mothers and fathers revealed a five-factor solution including affectless parenting, perfectionistic/ punitive parenting, emotional deprivation parenting, permissive parenting, and overprotective parenting. These factors showed good internal consistency.

Young Schema Questionnaire-Short form (YSQ-short form)

This measure was developed by Young (19) in order to assess 18 early maladaptive schemas. The YSQ-short form has acceptable construct validity, internal consistency, reliability, and discriminative validity in Iranian population (20). In the present study, we used unconditional schema subscales (e.g. Disconnection/ Rejection, and Impaired Autonomy and Performance Domains).

Cognitive Behavioral Avoidance Scale (CBAS)

The CBAS was developed in order to assess behavioral and cognitive avoidance. This scale consists of 31 items and 4 subscales. The CBAS showed good validity and reliability in Western (21) and Iranian populations (13).

Behavioral Inhibition/ Behavioral Activation Scales (BIS/ BAS)

Carver and White (1994) developed the BIS/BAS 20-item scale that assesses reactivity to aversive stimuli, reward responsiveness, drive, and fun seeking. The items are scored using a 4-Likert scale (1 = completely agree to 4 = completely disagree). It possesses good validity and reliability among Iranian and western population (22).

Young Compensation Inventory (YCI)

The YCI consists of 48 items that assess overcompensation coping style using a 6-Likert scale (23). Exploratory factor analysis of the current data revealed 6 factors including status seeking and control, rebellion, counter dependency, egocentrism, and intolerance of criticism, and emotional inhibition.

Procedure

The research procedure was approved by Ethical Review Board of University of Social welfare and Rehabilitation Sciences (94/801/T/ 26318) and all procedures of the research were done in accordance with the [Declaration of Helsinki](#). All participants provided written consent. In order to gather data from general population sample, five social workers selected participants according to quota sampling matrix from visitors in health centers, parks, and/or cultural houses of Tehran.

For the clinical sample, psychiatrists or clinical psychologists referred the patients to the first author (R.M.) for an evaluation using the Structured Clinical Interview for DSM-IV (SCID). Those who met the inclusion criteria and agreed to participate in the study, were instructed about the questionnaires and requested to complete them in one week. As previously mentioned, some parts of the method section are identical to previously published articles(11-13).

Statistical analysis

We applied path analysis with maximum likelihood estimation using AMOS 23. To establish the fit of the model, we considered the χ^2/df -ratio less than 3, as well as goodness-of-fit index (GFI), adjusted goodness-of-fit index (AGFI), incremental fit index (IFI), comparative fit index (CFI) with cut off $\geq .95$ as acceptable (24). We Also considered the root mean square error of approximation (RMSEA), and standardized root mean square residual (SRMR) with values $\leq .08$ indicating adequate fit (24).

Results

Correlations in general population

Table 1 presents correlation coefficients between the variables in the sample from the general population. Consistent with our prediction, most correlations between measured variables were significant. However, there was no significant relationship between early maladaptive schemas and Perfectionistic Strivings, between Behavioral Inhibition System and avoidance coping style, and overcompensation coping style and psychological distress.

Please insert table 1 here

Correlations in clinical sample

Pearson correlation coefficients of the measured variables in the clinical sample is shown in Table 2. Consistent with our prediction, there were significant relationships between all variables.

Please insert table 2 here

Measurement Model

A confirmatory factor analysis was conducted for each variable in the measurement model (behavioral approach system, behavioral inhibition system, avoidance, overcompensation coping styles, psychological distress, early maladaptive schemas, perfectionistic concerns, Perfectionistic Strivings, and parenting) to test the dimensionality of each variable (Table 3). All factor loadings of the models were significant.

Please insert table 3 here

Path analysis

Path analysis of the model in the general population

The goodness-of-fit indices showed that the model had good fit in the general population sample (χ^2/df -ratio = 2.36, $GFI = .97$, $AGFI = .93$, $IFI = .97$, $CFI = .97$, $TLI = .94$, $RMSEA = .06$, 90% CI [0.04, 0.08]), $SRMR = .04$) (Figure 2).

Consistent with theory, significant paths were observed between most of the variables (e.g. perceived mother and father's poor parenting and early maladaptive schemas; early maladaptive schemas and perfectionistic concerns; Perfectionistic Strivings and perfectionistic concerns, etc.). However, early maladaptive schemas were not associated with Perfectionistic Strivings. Perfectionistic concerns did not significantly correlate with avoidance coping style, and overcompensation coping style did not significantly correlate with psychological distress (see figure 2).

Path analysis of the model in the clinical sample

Similar to the general population, goodness-of-fit indices confirmed that the model of perfectionism indicated good fit with data of clinical sample (χ^2/df -ratio = 1.73, $GFI = .94$, $AGFI = .88$, $IFI = .95$, $CFI = .95$, $TLI = .92$, $RMSEA = .07$, 90% CI [0.03, 0.10]), $SRMR = .06$ (Figure 3).

Consistent with theory, significant paths were observed between most variables (e.g. perceived mother and father's poor parenting and early maladaptive schemas and early maladaptive schemas and perfectionistic concerns) (see Figure 3). However, overcompensation coping style was not associated with psychological distress. Also, Behavioral Inhibition System did not correlate with avoidance coping style.

Discussion

The proposed model showed a good fit with data from both clinical and community samples. The results are congruent with Maloney et al. (4) who found that perfectionistic and affectless parenting significantly explain early maladaptive schemas, which mediates the relationship between parenting style and perfectionism.

The pathways showed that perceived mothers' and fathers' parenting explain variance in early maladaptive schemas. These findings are in line with schema theory (5). Also, these results are congruent with previous research, which demonstrates significant relationships between perceived parenting and schema formation (25). These studies generally show that perfectionistic and violent parenting significantly explain variances of early maladaptive schemas.

The results of path analysis showed that in clinical and community samples early maladaptive schemas explained variance in Perfectionistic Concerns. These findings are in line with Maloney et al. (4) who found that schemas of Rejection/ Disconnection mediated the relationship between parent's attachment to the child and perfectionism. Boone et al. (26) also showed that among women with eating disorders there was a significant correlation between perfectionistic concerns and schemas of Rejection/ Disconnection, Impaired Autonomy/Performance, Other-Directedness and Over vigilance/Inhibition Domains.

The relationship between early maladaptive schemas and perfectionistic strivings were different between general population and clinical sample. In the clinical sample, early maladaptive schemas significantly predicted perfectionistic strivings, but not in the general population. As the participants in the general population reported significantly lower defectiveness/ shame, failure, and vulnerability to harm and illness schemas, individuals in the general population demonstrated low levels of early maladaptive schemas, which might explain the lack of relationship to perfectionistic strivings. However, patients with psychological disorders may set high standards in order to neutralize activated early maladaptive schemas (Young et al., 2006). In other words, in the clinical groups, the early maladaptive schemas are active and thus they set high standards for themselves in order to feel lovable or capable (5, 27). However, according to cognitive behavior theory (27) and early maladaptive schema theory (5) it is virtually impossible to reach such high standards. Thus schemas of those individuals will remain active.

In both the clinical and community samples Perfectionistic Strivings significantly explained Perfectionistic Concerns. Interpretation of the results would be that when a person sets very ambitious goals and standards for herself, she simultaneously understands that achieving these goals will be very difficult or even impossible. Therefore, fear of failure which is core component of perfectionist concerns will arise.

The findings showed that Perfectionistic Concerns in clinical and community samples significantly explain Behavioral Inhibition System. These findings are in line with Reinforcement Sensitivity Theory. The RST argue that aversive situations provoke the Behavioral Inhibition System (28).

Although previous studies have documented a significant correlation between Behavioral Inhibition System and experiential avoidance (29), we did not find a significant relationship between Behavioral Inhibition

System and avoidance coping style. Experiential avoidance is a different concept than avoidance coping and they are operationalized and measured in different ways. In previous studies, the target concept was experiential avoidance, which was measured by Acceptance and Action Questionnaire (30), but in the present study, the avoidance coping style concept was measured by Cognitive-Behavioral Avoidance Scale (21). Experiential avoidance refers to one's unwillingness to relate to personal experiences. These experiences include feeling, thoughts, somatic symptoms, and memories. However, avoidance as a behavioral coping style refers to behaviors that keep away a person from stressful situations (31). Consequently, future research should investigate relationship between Behavioral Inhibition System and avoidance coping styles and experiential avoidance, simultaneously.

Our findings indicated that in both clinical and community samples Perfectionistic Strivings significantly predict changes in Behavioral Approach System. The present findings are consistent with Reinforcement Sensitivity Theory (8). According to the Theory, Behavioral Approach System is sensitive to the stimulus that promise reward and behavioral approach system evokes motivational behaviors. The studied model showed that in both clinical and community samples Behavioral Approach System significantly predicts changes in overcompensation coping style. This finding is consistent with the predictions of the present study. The present study is based on the assumption that in a situation where ambitious goals are likely to be achieved (incentive stimulus), Behavioral Approach System activates behaviors for achieving goals (incentive behaviors). When goals are achieved or approached, behavioral approach system again sets new ambitious goals.

However, in both samples, overcompensation coping style did not predict variance of psychological distress. Several explanations come to mind to explain this finding. First and most, it could be concluded that avoidance coping style has more fundamental role than overcompensation in the maintenance of depressive disorders, obsessive-compulsive disorder, social anxiety disorder and eating disorders. Second, according to Early Maladaptive schema theory (5), overcompensation coping style is the healthiest form of coping with early maladaptive schemas. However, when person uses overcompensation coping style rigidly and frequently, negative consequences will occur. Third, overcompensation coping style expresses with behaviors such as dominating, controlling, exploitation others, or manipulating of others' feelings. It is important to note that these behaviors probably have more negative effects on interpersonal relationships than intrapersonal variables (e.g. anxiety and depression). However, we did not assess interpersonal problems in the current study. Therefore, future research should focus on the role of overcompensation coping style in interpersonal problems.

Finally, our results showed that early maladaptive schemas significantly predict changes in avoidance and overcompensation coping styles, and psychological distress. These results are congruent with the literature. Studies have shown that early maladaptive schemas significantly explain avoidance coping style (32), overcompensation coping style (18), and depression and anxiety symptoms (33). These results are also congruent with early maladaptive schemas theory (5).

There were several limitations of the study. First, the cross-sectional design study prevents being able to infer causation. Second, self-report was used to measure perceived parenting style which may be

contaminated by recall bias. It is necessary to do longitudinal research to study the role of developmental factors in perfectionism more precisely. Third, in the present study experiential avoidance was not included. Future studies should investigate the relationship pattern between Behavioral Inhibition System and experiential avoidance and avoidance coping style, simultaneously.

Conclusion

In summary, the study provided evidence for associations of a range of variables with perfectionism in clinical and community samples of Iran. Future research should examine the validity of these associations according to the proposed model using longitudinal data.

Abbreviations

Obsessive Compulsive Disorder = OCD, depression and Eating Disorders = EDs, Behavioral Approach System = BAS, Behavioral Inhibition System = BIS, Major Depressive Disorder = MDD, Clinical Perfectionism Questionnaire = CPQ, Personal Standards = PS, Evaluative Concern = EC, Perfectionism Inventory = PI, Depression Anxiety Stress Scales-21 = DASS-21, *Young Parenting Inventory = YPI*, *Young Schema Questionnaire-Short form = YSQ-short form*, *Cognitive Behavioral Avoidance Scale = CBAS*, *Behavioral Inhibition/ Behavioral Activation Scales = BIS/ BAS*, *Young Compensation Inventory (YCI)*, Structured Clinical Interview for DSM-IV = SCID, Goodness-of-Fit Index = GFI, Adjusted Goodness-of-Fit Index = AGFI, Incremental Fit Index = IFI, Comparative Fit Index = CFI, Root Mean Square Error of Approximation (RMSEA), Standardized Root Mean Square Residual = SRMR, Confidence Interval = CI.

Declarations

Ethics approval and consent to participate

All methods were carried out in accordance with the Declaration of Helsinki, with appropriate ethics approval and participant consent. Ethics approval was received University of Social Welfare and Rehabilitation Sciences, Tehran, Iran (94/81/T/ 26318). All participants signed a written consent.

Consent for publication

Identifiable demographic information has been removed from this manuscript to ensure anonymity. Thus, the consent to publish is not applicable.

Availability of the data

University of Social Welfare and Rehabilitation Sciences has approved and supported that only researchers of the manuscript will have access to the dataset, so the data used in this study is not available for public view. Still, requests can be written officially to the Abbas Purshahbaz: a.pourshahbaz@uswr.ac.ir.

Competing Interest

The authors have no actual or potential conflicts of interest including any financial, personal or other relationships with other people or organizations within three years of beginning the work submitted that could inappropriately influence their work.

Funding

University of Social Welfare and Rehabilitation Sciences financially supported this research, grant number 94/801/T/ 26318. However, the university had no role in designing, gathering and analyzing the data, and preparing the manuscript.

Authors' Contribution

RM, AP, PM, LF, and AG designed and supervised the research. RM conducted the study. Also, RM and MB wrote the manuscript. SE edited the manuscript. All authors have read and approved the manuscript.

Acknowledgements

The authors thank the participants.

References

1. Egan SJ, Wade TD, Shafran R. Perfectionism as a transdiagnostic process: A clinical review. *Clinical psychology review*. 2011 Mar 1;31(2):203-12.
2. Limburg K, Watson HJ, Hagger MS, Egan SJ. The relationship between perfectionism and psychopathology: A meta-analysis. *Journal of clinical psychology*. 2017 Oct;73(10):1301-26.
3. Robinson K, Wade TD. Perfectionism interventions targeting disordered eating: A systematic review and meta-analysis. *International Journal of Eating Disorders*. 2021 Apr;54(4):473-87.
4. Maloney GK, Egan SJ, Kane RT, Rees CS. An etiological model of perfectionism. *PloS one*. 2014 May 1;9(5): e94757.
5. Young JE, Klosko JS, Weishaar ME. *Schema therapy: A practitioner's guide*. Guilford Press; 2006 Nov 1.
6. Frost RO, Marten P, Lahart C, Rosenblate R. The dimensions of perfectionism. *Cognitive therapy and research*. 1990 Oct;14(5):449-68.
7. Boone L, Braet C, Vandereycken W, Claes L. Are maladaptive schema domains and perfectionism related to body image concerns in eating disorder patients?. *European Eating Disorders Review*. 2013 Jan;21(1):45-51.
8. Bijttebier P, Beck I, Claes L, Vandereycken W. Gray's Reinforcement Sensitivity Theory as a framework for research on personality–psychopathology associations. *Clinical psychology review*. 2009 Jul

- 1;29(5):421-30.
9. Warnke AS, Nagy SM, Pickett SM, Jarrett NL, Hunsanger JA. The examination of behavior inhibition system sensitivity, experiential avoidance, and sex in relation to post-traumatic stress symptom severity: Comparison of a moderated versus mediated model. *Personality and Individual Differences*. 2018 Oct 1;132:60-5.
 10. Williams AM, Hundt NE, Nelson-Gray R. BIS and cognitive appraisals in predicting coping strategies. *Personality and Individual Differences*. 2014 Mar 1;59:60-4.
 11. Moloodi R, Pourshahbaz A, Mohammadkhani P, Fata L, Ghaderi A. Psychometric properties of the Persian version of Clinical Perfectionism Questionnaire: findings from a clinical and non-clinical sample in Iran. *Personality and Individual Differences*. 2017 Dec 1;119:141-6.
 12. Moloodi R, Pourshahbaz A, Mohammadkhani P, Fata L, Ghaderi A. Two-factor higher-order model of perfectionism in Iranian general and clinical samples. *BMC psychology*. 2021 Dec;9(1):1-1.
 13. Moloodi R, Dobson K, Fata L, Pourshahbaz A, Mohammadkhani P, Mootabi F, Kami M, Ziai K, Ghaderi A. Psychometric properties of Persian version of Cognitive Behavioural Avoidance Scale: results from student, general population and clinical samples in Iran. *Behavioural and cognitive psychotherapy*. 2020 Nov;48(6):705-16.
 14. Fairburn CG, Cooper Z, Shafran R. *The Clinical Perfectionism Questionnaire*. 2003. Oxford.
 15. Hill RW, Huelsman TJ, Furr RM, Kibler J, Vicente BB, Kennedy C. A new measure of perfectionism: The Perfectionism Inventory. *Journal of personality assessment*. 2004 Feb 1;82(1):80-91.
 16. Jamshidy B, Hosseinchari M, Haghightat S, Razmi R. Validation of new measure of perfectionism. *Journal of Behavioral Sciences*. 2009; 3(1): 35-43.
 17. Sahebi A, Asghari M J, Salari, R S. Validation of Depression, Anxiety and Strees Scale (DASS-21) for an Iranian Population. *Developmental Pscychology*. 2006; 4: 299-312.
 18. Sheffield A, Waller G, Emanuelli F, Murray J, Meyer C. Do schema processes mediate links between parenting and eating pathology?. *European Eating Disorders Review: The Professional Journal of the Eating Disorders Association*. 2009 Jul;17(4):290-300.
 19. Young J. E. *Young Schema Questionniare*. 2005. New Yourk: Schema Therapy Institute.
 20. Sadoughi Z, AGUILAR VM, RASOULZADEH TS, Esfahanian N. Factor analysis of the young schema questionnaire-short form in a nonclinical Iranian sample. 2008: 214-219.
 21. Ottenbreit ND, Dobson KS. Avoidance and depression: the construction of the Cognitive–Behavioral Avoidance Scale. *Behaviour research and therapy*. 2004 Mar 1;42(3):293-313.
 22. Carver CS, White TL. Behavioral inhibition, behavioral activation, and affective responses to impending reward and punishment: the BIS/BAS scales. *Journal of personality and social psychology*. 1994 Aug;67(2):319.
 23. Young JE.. *Young Compensatory Inventory (YCI)*. 1995
 24. Brown TA. *Confirmatory factor analysis for applied research*. Guilford publications; 2015 Jan 7.
 25. Basso LA, Fortes AB, Steinhorst E, Wainer R. The effects of parental rearing styles and early maladaptive schemas in the development of personality: a systematic review. *Trends in psychiatry and*

- psychotherapy. 2019 Sep;41(3):301-13.
26. Boone L, Braet C, Vandereycken W, Claes L. Are maladaptive schema domains and perfectionism related to body image concerns in eating disorder patients?. *European Eating Disorders Review*. 2013 Jan;21(1):45-51.
 27. Beck JS, Beck AT. *Cognitive behavior therapy: Basics and beyond*. 2011.
 28. Bijttebier P, Beck I, Claes L, Vandereycken W. Gray's Reinforcement Sensitivity Theory as a framework for research on personality–psychopathology associations. *Clinical psychology review*. 2009 Jul 1;29(5):421-30.
 29. Warnke AS, Nagy SM, Pickett SM, Jarrett NL, Hunsanger JA. The examination of behavior inhibition system sensitivity, experiential avoidance, and sex in relation to post-traumatic stress symptom severity: Comparison of a moderated versus mediated model. *Personality and Individual Differences*. 2018 Oct 1;132:60-5.
 30. Bond FW, Hayes SC, Baer RA, Carpenter KM, Guenole N, Orcutt HK, Waltz T, Zettle RD. Preliminary psychometric properties of the Acceptance and Action Questionnaire–II: A revised measure of psychological inflexibility and experiential avoidance. *Behavior therapy*. 2011 Dec 1;42(4):676-88.
 31. Goldberger L, Breznitz S, editors. *Handbook of stress*. Simon and Schuster; 2010 Jun 15.
 32. Ke T, Barlas J. Thinking about feeling: Using trait emotional intelligence in understanding the associations between early maladaptive schemas and coping styles. *Psychology and Psychotherapy: theory, research and practice*. 2020 Mar;93(1):1-20.
 33. Gong J, Chan RC. Early maladaptive schemas as mediators between childhood maltreatment and later psychological distress among Chinese college students. *Psychiatry Research*. 2018 Jan 1;259:493-500.

Tables

Table 1

Correlation of variables in the sample from the general population

		1	2	3	4	5	6	7	8	9
1	Father's Perceived Parenting									
2	Mother's Perceived Parenting	.62**								
3	Early Maladaptive Schemas	.51**	.47**							
4	Perfectionistic Strivings	-.09	-.14	-.01						
5	Perfectionistic Concerns	.16	.16	.56**	.20*					
6	Behavioral Approach System	-.04	-.09	-.13	.42**	.02				
7	Behavioral Inhibition System	.08	.07	.30**	.12	.49**	.39**			
8	Avoidance Coping Style	.29*	.29*	.59**	-.29*	.34**	-.36**	.11		
9	Counterattack Coping Style	.17	.08	.23*	.12	.20	.26*	.17	.04	
10	Psychological Distress	.32**	.32**	.55**	.21*	.39**	-.24*	.21*	.58**	.11
*p < .05, ** p < .01										

Table 2
Correlation of measured variables in the clinical sample

		1	2	3	4	5	6	7	8	9
1	Father's Perceived Parenting									
2	Mother's Perceived Parenting	.32**								
3	Early Maladaptive Schemas	.32**	.39**							
4	Perfectionistic Striving	.18	.13	.17*						
5	Perfectionistic Concerns	.08	.28*	.65**	.45**					
6	Behavioral Approach System	.19	.04	-.01	.33**	.14				
7	Behavioral Inhibition System	.20*	.10	.37**	.26*	.56**	.48**			
8	Avoidant Coping Style	.16	.32**	.62**	.02	.45**	-.15	.20*		
9	Counterattack Coping Style	.28*	.27*	.42**	.11	.36**	.19*	.23*	.29*	
10	Psychological Distress	.12	.24*	.56**	.11	.40**	.02	.31**	.56**	.28*
*p < .05, ** p < .01										

Table 3

Measurement model and McDonald's Omega coefficient of subscales

Subscales	General population (n = 384)	Clinical sample (n=152)
	Fit indices	Fit indices
Behavioral Approach System	$\chi^2/df = 3.19$ <i>GF</i> = .95 <i>TLI</i> = .95 <i>IFI</i> = .95 <i>CFI</i> = .95 <i>RMSEA</i> = .07 SRMR = 0.05	$\chi^2/df = 1.47$ <i>GF</i> = .94 <i>TLI</i> = .95 <i>IFI</i> = .97 <i>CFI</i> = .96 <i>RMSEA</i> = .05 SRMR = 0.03
Behavioral Inhibition System	$\chi^2/df = 1.71$ <i>GF</i> = .99 <i>TLI</i> = .97 <i>IFI</i> = .98 <i>CFI</i> = .98 <i>RMSEA</i> = .04 SRMR = 0.02	$\chi^2/df = 1.14$ <i>GF</i> = .98 <i>TLI</i> = .99 <i>IFI</i> = .99 <i>CFI</i> = .99 <i>RMSEA</i> = .03 SRMR = 0.02
Avoidance Coping Style	$\chi^2/df = 2.78$ <i>GF</i> = .99 <i>TLI</i> = .98 <i>IFI</i> = .99 <i>CFI</i> = .99 <i>RMSEA</i> = .06 SRMR = 0.001	$\chi^2/df = 0.07$ <i>GF</i> = .99 <i>TLI</i> = .99 <i>IFI</i> = .99 <i>CFI</i> = .99 <i>RMSEA</i> = .0001 SRMR = 0.001
CounterAttack Coping Style	$\chi^2/df = 0.99$ <i>GF</i> = .99 <i>TLI</i> = 1.00 <i>IFI</i> = 1.00 <i>CFI</i> = 1.00 <i>RMSEA</i> = .0001 SRMR = 0.01	$\chi^2/df = 1.27$ <i>GF</i> = .98 <i>TLI</i> = .98 <i>IFI</i> = .99 <i>CFI</i> = .99 <i>RMSEA</i> = .04 SRMR = 0.03

Psychological Distress	$\chi^2/df = .80$ GFI= .99 TLI = 1.00 IFI = 1.00 CFI = 1.00 RMSEA = .0001 SRMR= 0.01	$\chi^2/df = .80$ GFI= .99 TLI = 1.00 IFI = 1.00 CFI = 1.00 RMSEA = .0001 SRMR= 0.01
Early Maladaptive Schema	$\chi^2/df = 2.26$ GFI= .97 TLI = .94 IFI = .96 CFI = .96 RMSEA = .05 SRMR= 0.04	$\chi^2/df = 1.46$ GFI= .95 TLI = .95 IFI = .97 CFI = .96 RMSEA = .05 SRMR= 0.04
Perfectionistic Strivings	$\chi^2/df = 2.46$ GFI= .99 TLI = .98 IFI = .99 CFI = .99 RMSEA = .06 SRMR= 0.01	$\chi^2/df = 0.79$ GFI= .99 TLI = 1.00 IFI = 1.00 CFI = 1.00 RMSEA = .0001 SRMR= 0.01
Perfectionistic Concerns	$\chi^2/df = 1.74$ GFI= .99 TLI = .98 IFI = .99 CFI = .99 RMSEA = .04 SRMR= 0.02	$\chi^2/df = 0.29$ GFI= .99 TLI = 1.00 IFI = 1.00 CFI = 1.00 RMSEA = .0001 SRMR= 0.01
Perceived mother's Parenting	$\chi^2/df\text{-ratio} = 0.94$ GFI= .99	$\chi^2/df\text{-ratio} = 1.08$ GFI= .99

		<i>TLI = 1.00</i>	<i>TLI = .99</i>
		<i>IFI = 1.00</i>	<i>IFI = .99</i>
		<i>CFI = 1.00</i>	<i>CFI = .99</i>
		<i>RMSEA = .00</i>	<i>RMSEA = .02</i>
		<i>SRMR = .01</i>	<i>SRMR = 0.02</i>
Percived father's parenting		<i>χ^2/df-ratio = 0.94</i>	<i>χ^2/df-ratio = 3.03</i>
		<i>GF = .99</i>	<i>GF = .99</i>
		<i>TLI = 1.00</i>	<i>TLI = .97</i>
		<i>IFI = 1.00</i>	<i>IFI = .97</i>
		<i>CFI = 1.00</i>	<i>CFI = .97</i>
		<i>RMSEA = .00</i>	<i>RMSEA = .11</i>
		<i>SRMR = .01</i>	<i>SRMR = .03</i>

Figures

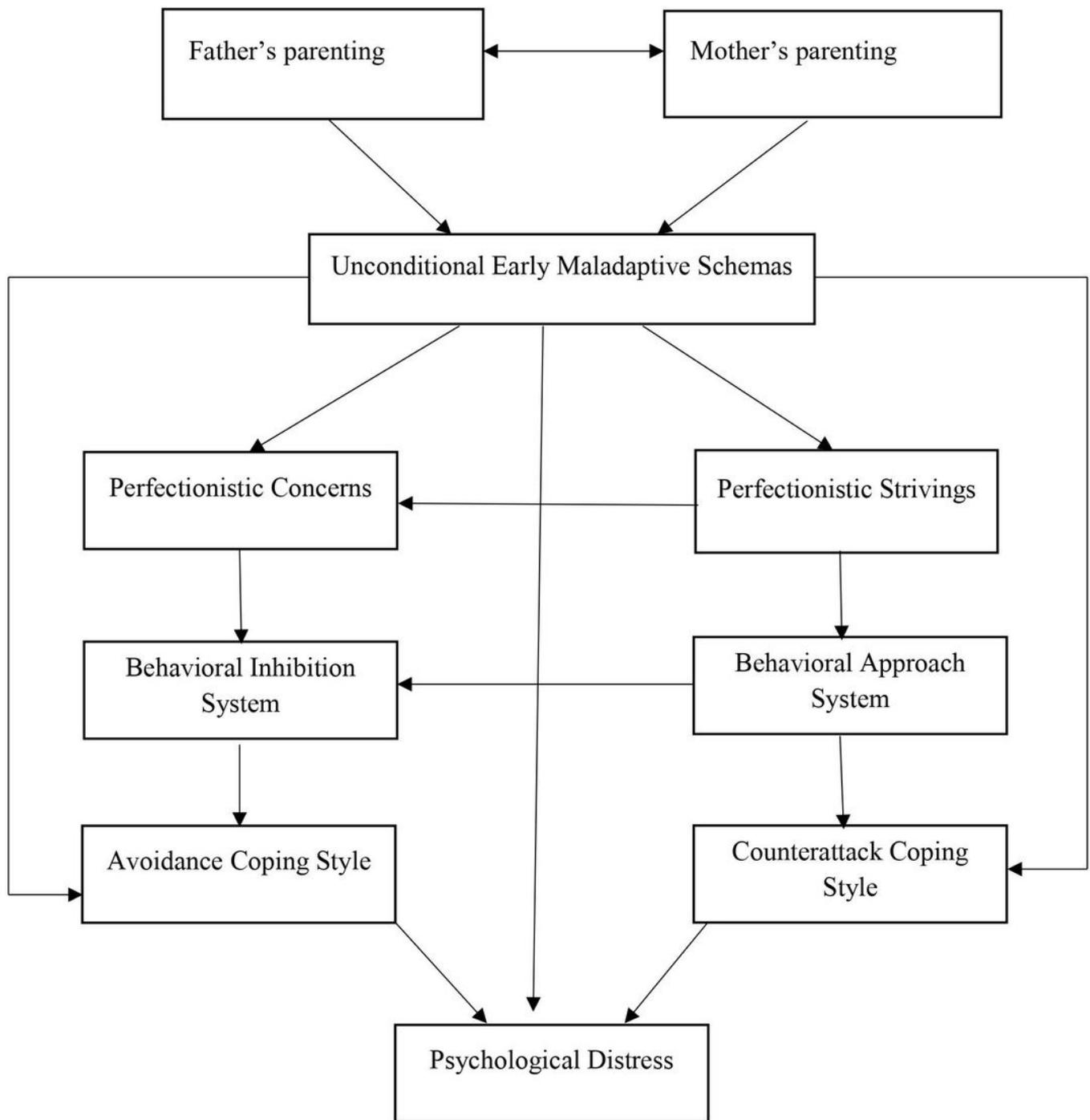


Figure 1

proposed conceptual cognitive behavioral model of perfectionism

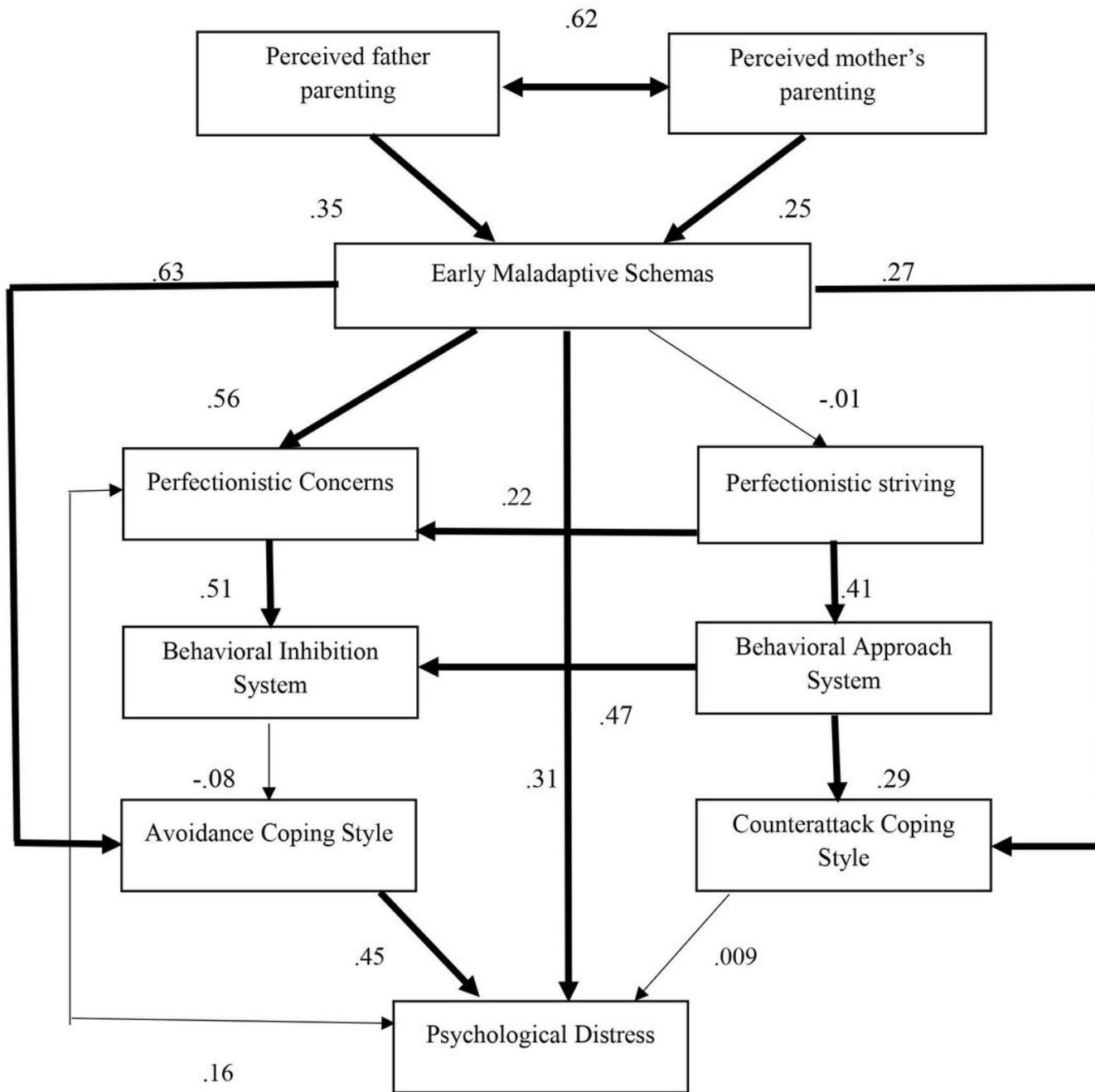


Figure 2

Transdiagnostic model of perfectionism in general population

Note: The bold paths are significant, while the regular paths are not Significant

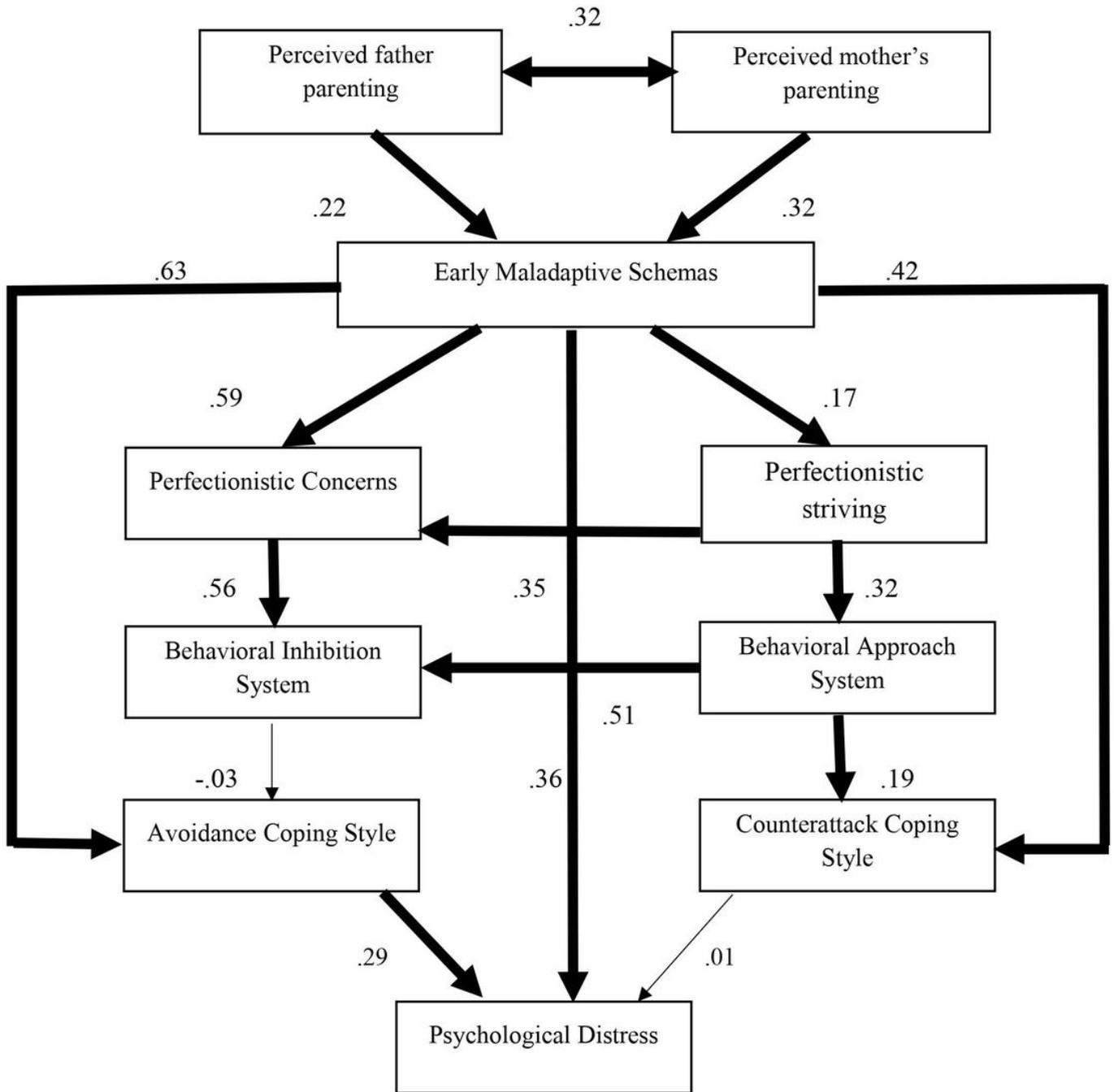


Figure 3

Transdiagnostic model of perfectionism in clinical sample

Note: The bold paths are significant, while the regular paths are not Significant