

Relation Between Self-esteem, Perfectionism, and Orthorexia Nervosa

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Abstract. Orthorexia Nervosa (ON) is a dietary phenomenon that has garnered significant attention in recent years. Its core characteristic is an excessive preoccupation with healthy eating, manifesting as strict dietary restrictions and frequently accompanied by psychological distress. The study uses a review method for literature from different cultures, fields and theoretical literature, in which the relationship between and the impact of self-esteem and perfectionism on ON were examined. And this review can show the vital role of self-esteem and perfectionism for the mechanism of ON in terms of comparing the design of the study, sample of study and findings of the study with its limitations. It is very apparent from the findings that almost every study points out that lower self-esteem is related to high ON tendencies. However, cross-sectional research, such as that which was performed on both the Australian sample and the American sample, did not show any association that was meaningful. In fact, it went so far as to show that ON individuals were better in terms of their self-respect. In addition, many studies have shown a strong positive relationship between perfectionism and ON, with maladaptive perfectionism having the strongest relationship. It is more important that perfectionism not merely directly predict the development of ON but also may indirectly predict ON through perfectionism-related psychosocial and behavioural characteristics. All these results together indicate that self-esteem and perfectionism play an important role in the psychological processes of ON. Nevertheless, there are differences between studies. In addition, most studies use cross-sectional designs with specific samples and therefore rely mainly on correlational findings to make causal inferences. Future studies should use longitudinal and cross-cultural designs, including extra conceivable mediating and moderating variables so as to more completely describe the ways in which self-esteem and perfectionism influence ON.

Keywords: Self-esteem, Perfectionism, Orthorexia Nervosa

1. Introduction

Around the world, “how to eat healthily” has become one of the main lifestyle topics. Healthy eating is deemed as a very important element to keep healthy, and by society, it has become more and more popular among different kinds of people. However, an excessive pursuit of healthy eating may yield adverse effects. The most talked about phenomenon is Orthorexia Nervosa (ON), which was found by Bratman [1]. It is mainly manifested as an extreme pursuit of “purity”, a pathological pursuit of

purity. Although ON is not included in diagnostic systems, it is receiving increasing attention both in academic research and popular culture. This control over dietary quality is too much, which creates obstacles for good dietary culture and public health education, and it makes studying the psychological reasons behind this valuable. Of all potential psychological factors, self-esteem and perfectionism appear to have a significant association with ON. But due to the different designs of studies, samples, and methods, there is no consistent conclusion. This paper adopts a systematic literature review approach to incorporate empirical studies and theoretical research about self-esteem, perfectionism, and ON from recent years. The review aims to clarify the mechanisms through which self-esteem and perfectionism influence ON, summarise commonalities and differences across studies, evaluate existing research limitations, and propose directions for future research and practical interventions.

2. Core concept

2.1. Self-esteem

Self-esteem refers to the subjective positive evaluation of one's overall worth (relevance: in explaining vulnerability to ON). As an important part of affecting self-concept, it is usually based on social comparisons or norms, most often appearing as a kind of cognitive appraisal. As a relatively stable psychological characteristic, self-esteem mainly reflects the way people evaluate or feel about their own abilities and qualities, and it relates greatly to their lives, mental health, and well-being. Although some scholars question the positive effects of self-esteem, suggesting its influence is limited and that excessive self-evaluation may yield adverse outcomes, substantial empirical evidence broadly supports the association between self-esteem and positive results, including positive emotions, favourable interpersonal relationships, and greater life satisfaction [2]. The other side is low self-esteem, and it has been seen as a risk indicator for a large number of different types of mental health issues. Notably, in relation to the cross-diagnostic model of eating disorders, it is seen as a central feature in both the onset and upkeep [3].

2.2. Perfectionism

Perfectionism is a multidimensional construct, which is widely defined as an individual's excessive self-criticism and sensitivity to errors when he or she strives to have high standards [4]. It has its major characteristics such as setting very high standards for oneself, being overly concerned with mistakes and being afraid of others judging him/her and having a strong self-criticizing tendency [5]. Clinically, perfectionism refers to evaluating oneself as one must keep up one's extremely high standards in at least one really important area, even if it goes badly [6]. Perfectionism comprises adaptive aspects (e.g., achievement striving) and maladaptive aspects (e.g., excessive concern for errors), and it is closely linked to mental health problems such as those mentioned [7].

2.3. Orthorexia Nervosa (ON)

Orthorexia nervosa is typically defined by an excessive preoccupation with "pure" and "healthy" eating. Unlike anorexia or bulimia, which centre on the amount of food consumed, ON is primarily concerned with the perceived quality or purity of food [8]. People who have O-type blood make up detailed food guidelines for themselves and are very watchful over what they eat in terms of where the food comes from, how it is prepared and the nutrients found in it [9]. Those with ON have intense discomfort and reproach themselves for deviating from their dietary standards imposed on

themselves. 1 Initially ON maybe seen as a healthy eating choice. However, because there is a lot of time and energy devoted to trying to choose healthy foods, and avoid unhealthy foods, this is an obsession and can result in serious nutritional issues, serious social isolation and a less fulfilling quality of life [9]. All the research that has been carried out points to the fact that ON is a multi-faceted eating disorder. Its pathophysiology is connected to lots of things, such as personality features, anxiety levels, and also the sociocultural setting.

Regarding the prevalence of ON, current literature reports significant variation from as low as 6.9% in Italian samples to as high as 88.7% among dieting students in Brazil [10]. Prevalence rates are higher in specific groups. For instance, a Turkish study found that 56.4% of artistic workers scored below 40 points, with opera singers exhibiting the highest prevalence (81.8%), followed by ballet dancers (32.1%) and symphony orchestra musicians (36.4%) [11]. Associations also exist between social media dependency and ON. One study found 62.2% of addicts exhibited ON tendencies, with 31.0% still displaying such tendencies among those with severe dependency ($p < 0.05$) [12]. Overall, the occurrence of ON in the general population is still inconclusive, though specific occupational groups and individuals with particular dietary habits exhibit heightened susceptibility. Notably, due to variations in measurement tools (ORTO-15, DOS, ONI, EHQ, etc.) and inconsistent interpretative methodologies, comparability between studies is limited. Nevertheless, the prevailing trend indicates significantly higher ON risk within specific cohorts compared to the general population.

3. Self-esteem and Orthorexia Nervosa

In recent years there has been a considerable amount of scholarly discussion on ON (in the psychological/psychopathological space). Due to the fact that ON has not been fully integrated into the diagnosis of existing eating disorders or obsessive-compulsive disorder, the study of its underlying causes and related factors requires independent examination. Self-esteem might not just be a main motivator behind ON behaviors, but it could also be a major piece of the maintenance puzzle. Consequently, systematically reviewing empirical research on self-esteem and ON not only deepens the understanding of its psychological mechanisms but also provides crucial guidance for developing effective clinical intervention strategies.

A good few cross-sectional looks into the good of On in terms of self-worth. For example, Zacharias et al. did an online study on 274 Turkish university undergrads, 76.6% of them being female; most were between 21 - 25 years old, at 45.3% of the group. The Test of Orthorexia Nervosa (TON-17) and Rosenberg Self-Esteem (RSE) scales were used, showing a positive connection between self-esteem and ON (odds ratio = 1.0741, $p = .0379$) [13]. From the regression analysis, low levels of self-esteem is an important predictor of ON so they concluded that it was possible that people with lower self-esteem could be attempting to find value by sticking to diets, and using their eating behaviours to compensate for or raise self-esteem (or vice versa). In an analogous way, Bona et al. created an essential inverse affiliation between self-esteem and orthorexic dispositions in Hungarian adults [14]. That implies persons may lessen their existential worry and improve their self-respect with radical health-focused eating. However, what looks like the more positive health behaviours may be potential risk factors for ON. The previous study has the strengths of using a multi-dimensional measure and incorporating non-academic practice literature to make sense of its findings around society valuing healthy eating. However, the study was limited as some people may not be representative of the sample and also the use of self-reporting questions and it cannot prove that there is causality. They all collectively show that self-esteem levels might become important predictors of tendencies for anorexia nervosa.

Most of the current empirical studies of ON and of self-esteem use a cross-sectional design, but longitudinal studies conducted within this area of research have also found self-esteem to be important. Take Krauss et al. for example; they did a meta-analysis with 48 longitudinal samples, N was 19,187. There was a significant bidirectional relationship between self-esteem and eating disorder – lower self-esteem predicted more severe future levels of eating disorder symptoms, and greater current levels of eating disorder symptoms predicted poorer self-esteem in the future [3]. These findings point to a reciprocal model, that is, it's clear that self-esteem works as both a risk factor and a construction that can be eroded further as the illness progresses. ON has not been officially included in traditional eating disorders diagnostic criteria but these results indicate that self-esteem might be universally involved in the development and perpetuation of eating-related distress. Study limitations include sample heterogeneity within the analyses. Around 79% of participants were female and mainly European, with most samples being from the US (n = 26), whereas only very few came from other countries such as Switzerland, Australia and Spain. Not only that, a lot of them came from communities or clinical settings as opposed to a nationally representative cohort. This demographic and cultural concentration will limit the external validity of the study, and combined with the small effect sizes, needs further clinical longitudinal trials to validate.

But not, they got there all at once. Also relevant cross-sectional research from the States and Australia found that self-esteem has little or no association to neurotic health food obsession and is not a strong predictor of it [15]. There is consistent support to suggest that there is a link between ON and lower self-esteem, but conflicting findings exist as well. Some studies show higher self-esteem for those ON. This is probably due to the fact that they maintained good eating habits and controlled themselves. This counterexample shows that self-esteem might play dual roles—both as a risk factor and a compensatory measure. It stresses the need for customised treatment for ON. And the pattern of influence is going to show some inconsistencies due to the differences of culture and methods.

A review of previous studies shows that most cross-sectional studies show a very strong negative correlation between self-esteem and ON. Low self-esteem is strongly correlated with greater degrees of ON. This conclusion has also been verified by different countries (Turkey, Hungary, US, and Switzerland) and research methods (questionnaire, interview, longitudinal survey). However, findings are mixed, as some studies did not find an independent predictive model of self-esteem, other studies have found higher self-esteem in ON, which could be compensatory self-worth from healthy eating. So this means the self-esteem might be playing double roles for ON at the same time, it's both risk and an opportunity.

However, there are still many limitations in previous literature, especially when it comes to the use of methodology and cultural generalizability. Firstly, most studies mainly use self-report questionnaires as research instruments, which can lead to social desirability effects and response bias. Secondly, the limited number of existing longitudinal studies, predominantly concentrated within specific cultural contexts, has to some extent hindered a comprehensive understanding of the developmental trajectory of ON and its cross-cultural universality. Thirdly, some studies did not adequately control for confounding variables like anxiety, obsession, and socioeconomic conditions, which to interfere with the independent interpretation of the relationship between self-esteem and ON. Finally, because there is a lack of experimentation, its understanding remains very shallow.

4. Perfectionism and Orthorexia Nervosa

Moreover, out of a plethora of possible psychological factors, it is assumed that perfectionism is strongly related to the occurrence as well as the continuity of ON. According to the research, those who have a healthy obsession towards food are perfectionists. In ON, people are very obsessed with what they eat and strictly abide by the rules, and this obsession with "perfect" eating may reflect their perfectionist personality. Most of the existing empirical studies use cross-sectional questionnaires to study the interaction between individuals' perfectionism levels and ON tendencies. A greater ON tendency is considerably linked to more perfectionism; this has been shown in a lot of studies. Further mediation analysis showed that perfectionistic tendencies not only directly predicted a higher level of ON (i.e., perfectionism increased the likelihood of ON), but also indirectly promoted an increased risk of ON by decreasing mindfulness and self-compassion. In a similar way, Novara et al. compared differences on the basis of high and low ON propensity in an Italian sample [16]. Based on the results it is evident that high ON tendencies scored higher across the board to perfectionist scores when compared to people scoring low on ON tendencies. This gap was especially apparent in the non-dieting group. It highlights perfectionism as an essential part of ON, so treatment should go after perfectionist ideas, with different parts like aiming for perfection in oneself and blaming oneself too much, working together to create ON. While obsessive-compulsive symptoms account for some of the variance in ON, perfectionism is the strongest independent predictor. This accounted for 8.3% of the variance in ON but served as a mediator between obsessive-compulsive symptoms and ON. Obsessive-compulsive symptoms were strongly related to ON only at high levels of perfectionism. When these studies are taken together, they both support a substantial association between perfectionism and ON, as well as the idea that perfectionism serves a dual role, both as a risk factor and a mediator, so this supports the notion that perfectionism should be considered as a central aspect of ON and as an important intervention target.

Meanwhile, there is also another study with a different perspective. From the research, we can see that more perfectionism will make people eat "more rationally" [17]. The researchers explained this through two theoretical models proposed by Hewitt et al. On one hand, perfectionism might lead to eating problems because one's body isn't meeting up to some desired criteria; on another aspect, worry over making errors could make people stay away from "imperfect" eating so they adhere closely to healthy dietary habits. Supports the latter. Additionally, by Yung and Tabri we see perfectionism's impact on ON could be indirectly through a "health-centred self-concept" [18]. From this research, it seems that perfectionism in ON is not a single risk factor, but rather, shows two results: it will promote the pathological development of healthy eating obsession and under certain conditions, also reinforce a healthy diet norm.

The existing research is all in accord with a strong connection between perfectionism and ON. More emphasis has been put on the manifestation of maladaptive perfectionism, which is more evident, namely in the aspects of socially prescribed perfectionism and fear of mistakes in ON [16]. Secondly, perfectionism is not only a direct predictor role, it might also affect ON by playing a mediatory or moderating role. The nature of perfectionism's role changes from study to study. Most studies point out that perfectionism is a risk factor directly or indirectly aggravating ON, but some indicate that perfectionism may lead to more rational eating behaviour by avoiding errors. Therefore, it is not necessary that perfectionism can be considered a totally negative item for ON, when it matches with reasonable dietary control. And they also use cross-sectional research designs so they can't make causal claims for sure. Different measurements scales are also not easy to compare. Also, confounders are present between studies, which would call out for a multivariate

model that controls for those. If they were not controlled for, it might bias the perception of how much perfectionism does or does not predict.

5. Discussion and suggestion

In short, this review paper focuses on the relations between self-esteem, perfectionism and orthorexia nervosa. Self-esteem and perfectionism both play large roles in the beginning and continued progression of ON. Low self-esteem had a higher level of ON and more symptoms of dietary pathology. Perfectionism was constantly related to strong symptoms of ON. Many amounts of actual research has found out a negative correlation between the self-respect level and ON trend. In particular, it is more likely for people who have less self-esteem to show a fixation on eating well. The unhealthy tendency to eat healthily can cause a vicious cycle that affects people's self-esteem, which then becomes even worse. In addition to this, other researchers have reached different conclusions, so one might receive payback for their own self-respect.

At the same time, there is a very large positive correlation between perfectionism and ON tendencies, especially when perfectionism's negative part corresponds well with the increase in the level of ON. It's important to note that perfectionism can have dual, pathological and adaptive, on ON. So, self-esteem and perfectionism together make risk patterns for those with bulimia nervosa, so low self-esteem and high obsessive-compulsive traits may be a dangerous combination. This is congruent with the literature on the role of perfectionism, self-esteem in eating disorders.

The whole systematic review of the role of self-esteem and perfectionism in ON shows the complex interaction between these 3 factors and also gives practical directions and ideas for future research and clinical work. In addition, there exist only cross-sectional studies, so causality cannot be stated. Though there are inconsistencies in measurement tools and operational definitions as well, study design limitations are more worthy of attention. Future studies should have better study designs, increase longitudinal experimental studies, and standardise research scales. And they focus mainly on women and Western cultures. The sample can be widened in terms of culture, gender and occupation to improve generalisability. Secondly, more studies will be done on how self-esteem and perfectionism interact and on what other important variables, like anxiety and different types of parenting, influence things. In terms of application, this kind of evaluation regards self-appraised worth and self-perceived perfection as important psychological orientations toward ON. They become aims for prevention and the earlier discoveries made; they offer a point of comparison for interventions that may follow. And also helps us understand their methods of operation so we can avoid pathologizing tendencies in public health education and media campaigns around "eating healthy".

6. Conclusion

This work systematically reviews self-esteem, perfectionism, and ON research. Low self-esteem and maladaptive perfectionism keep coming up in several cross-educational empirical studies when it comes to having more of ON. Nevertheless, there are some studies still not consistent. Though it exists some shortcomings concerning design and sample, the current research still emphasises the considerable significance of the two mental traits in ON. Moreover, it should have its related research mostly as well cross-sectional and focused on specific samples, so the opportunity for inference making and a cross-cultural application is lacking. However, there is much evidence that has been reviewed which are important about self - esteem and perfectionism about understandings of psychological factors of ON. It means that further studies will have to adopt a longitudinal design

and other samples in order to explain more mechanisms like this, to provide a better theory for clinical intervention and public health education.

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