

EDITORIAL

Risk factors for eating disorders: a work in progress

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A risk factor is any attribute, characteristic or exposure that increases the likelihood that an individual will develop a disorder or injury. Risk factors involve two essential characteristics: a) they occur before the outcome; and b) they can be used to divide the population into high risk and low risk subgroups.¹ When they cannot be changed (characteristics like ethnicity, birth date, etc.) they are considered *fixed markers*, and when they can be changed (spontaneously or following an intervention) they are called *variable risk factors*. Furthermore, when a variable risk factor modifies the probability of an outcome it is called a *causal risk factor*. This distinction is especially important because preventive interventions require the identification of causal risk factors.² However, identifying causal risk factors is complex and encompasses the systematic study of several potential variables in large longitudinal studies.

Risk factors for mental disorders are multidimensional and are characterized by an interplay between different degrees of genetic and environmental factors. In recent years, a growing body of evidence has elucidated some of the risk factors that predispose individuals to mental disorders. The combined action of aggregated alleles or the effects of rare pathogenic variants in combination with environmental risk factors increases the risk of mental disorders. Of note, most environmental risk factors are characterized by small effect sizes and, despite increasing susceptibility, they are insufficient to explain the condition(s).³

Anorexia nervosa (AN), bulimia nervosa (BN) and binge eating disorder (BED), the major eating disorders (ED), are a group of common multifaceted mental disorders with a high personal and social burden, as well as high morbidity and mortality. They are characterized by changes in eating-related behavior that lead to altered consumption/absorption of food and impaired physical/psychological health. From early family/twin studies to more recent genome wide studies, a growing body of evidence suggests that these conditions are heritable and have a polygenic nature.⁴ In AN, candidate gene studies have found associations with neurotransmitters, metabolic hormones, neuroendocrine and immune systems, and inflammatory response. In BN, positive findings have been found for polymorphisms in metabolic hormones,

cannabinoid receptors and obesity genes. In BED, positive findings have been found regarding neurotransmission in serotonin, dopamine, and opioid systems. In terms of environmental variables, several longitudinal studies have identified factors that increase the risk of eating pathologies, including perceived pressure to be thin, thin-ideal internalization, body dissatisfaction, dietary restraint, and negative affect.⁵

Some reviews and systematic reviews have tried to summarize current knowledge about risk factors for ED.^{4,6} In this issue of BJP, Solmi et al.⁷ performed an umbrella review of meta-analyses on risk factors for AN, BN and BED. Umbrella reviews provide one of the highest levels of evidence in medical knowledge, reviewing previously published meta-analyses and repeating them through a standardized approach for all factors, which allows their comparison and stratification. Using this strategy, Solmi et al. demonstrated that no association of risk factors for ED was supported by convincing evidence. Highly suggestive evidence of moderate quality supported the association between childhood sexual abuse and BN and between appearance-related teasing and any ED. The authors concluded that the evidence about ED risk factors is less developed than that of other mental disorders and that the risk factors they did find, such as sexual abuse, were not specific to EDs. They commented that the lack of established risk factors for ED could be due to either limited research in this field or to the heterogeneity of clinical syndromes, which have common characteristics with other mental disorders.

Beyond demonstrating the paucity of markers with robust associations, this study provided insights for future research and echoed the findings of researchers dedicated to the study of risk factors for ED.^{5,6} For example, only suggestive evidence of an association with ED was found for several risk factors, such as body dissatisfaction, pressure to be thin or to diet, etc., and these factors may not have been explored in depth. Thus, there is an urgent need for further collaborative studies with large samples on the genetic and environmental risk factors for ED. Several initial findings should be replicated and confirmed by different groups of researchers. Finally, potential risk factors must be tested in interventional randomized controlled trials to be confirmed.

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Finally, identifying the risk factors for a specific disorder is a fundamental step toward developing a successful prevention strategy. In a systematic review, Le et al.,⁸ identified a small number of promising preventive interventions for ED risk factors, including media literacy and cognitive dissonance. They found that these interventions had small-to-moderate effect sizes on the occurrence of ED risk factors or symptoms over three years of follow up, although no intervention reduced the incidence of an ED. Solmi et al.'s⁷ umbrella review has highlighted the importance of empirical research for identifying remedial risk factors, which could lead to more successful interventions to prevent these common and debilitating mental disorders.

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References

- 1 Offord DR, Kraemer HC. Risk factors and prevention. *Evid Based Ment Health*. 2000;3:70-1.
- 2 Institute of Medicine (US) Committee on Prevention of Mental Disorders; Mrazek PJ, Haggerty RJ. Risk and protective factors for the onset of mental disorders. Washington: National Academies Press; 1994.
- 3 Arango C, Díaz-Caneja CM, McGorry PD, Rapoport J, Sommer IE, Vorstman JA, et al. Preventive strategies for mental health. *Lancet Psychiatry*. 2018;5:591-604.
- 4 Himmerich H, Bentley J, Kan C, Treasure J. Genetic risk factors for eating disorders: an update and insights into pathophysiology. *Ther Adv Psychopharmacol*. 2019;9:2045125318814734.
- 5 Stice E, Johnson S, Turgon R. Eating disorder prevention. *Psychiatr Clin North Am*. 2019;42:309-18.
- 6 Bulik CM, Blake L, Austin J. Genetics of eating disorders: what the clinician needs to know. *Psychiatr Clin North Am*. 2019;42:59-73.
- 7 Solmi M, Radua J, Stubbs B, Ricca V, Moretti D, Busatta D, et al. Risk factors for eating disorders: an umbrella review of published meta-analyses. *Braz J Psychiatry*. 2020;43:314-23.
- 8 Le LKD, Barendregt JJ, Hay P, Mihalopoulos C. Prevention of eating disorders: a systematic review and meta-analysis. *Clin Psychol Rev*. 2017;53:46-58.