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Scoping Review Protocol

ADMINISTRATIVE INFORMATION:

Title:

Impacts of emotional regulation and inhibition on Emotional Eating (EE) and Binge Eating Disorder (BED): Protocol for a scoping review.

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INTRODUCTION:

Background / Rationale

Our scoping review mainly focuses on Emotional Eating (EE) and Binge Eating Disorder (BED). EE is an eating behavior, it might be defined as “the tendency to overeat in response to negative emotions such as anxiety or irritability” (van Strien et al., 2007, p. 106) but in a nonpathological way. It differs from BED, which has been formally indexed in 2013 in the DSM-5 as a discrete eating disorder. BED symptoms include recurrent binge-eating episodes (i.e. eating a larger amount of food than most people do during a discrete period of time, with at least one episode per week for three months), “a sense of lack of control over eating during the episode” and “marked distress regarding binge eating”, but without compensatory behaviors as in anorexia nervosa or bulimia nervosa (American Psychiatric Association, 2013).

Although different, both EE and BED appear to be affected by deficits in emotional regulation and inhibition (Crockett et al., 2015; Dingemans et al., 2017; Ferrell et al., 2020; Giel et al., 2017; Leehr et al., 2015; Waltmann et al., 2021; Zhang et al., 2020). Indeed, both individuals with EE and BED present with overeating behaviors caused by emotion regulation difficulties and a lack of inhibition/greater impulsivity. For example, it has been shown that negative

emotions act as a trigger for binge-eating episodes in BED (Greeno et al., 2000; Leerh et al., 2015; Nicholls, 2016). Binge eating is then used as a way to regulate negative emotions (but it is yet uncertain if this strategy successfully improves mood, see Leehr et al., 2015 and Stein et al., 2007).

Objectives

The objectives of the present scoping review are multiple. The first question we would like to address is the possible existence of a continuum between EE (nonpathological eating behavior) and BED (pathological eating behavior). Moreover, as EE and BED both show deficits in emotion regulation and inhibition, our second question relates to the possibility of a gradation of the deficits in emotion regulation and inhibition. The third question we would like to address in this scoping review is about the ill-defined concept of overeating. Indeed, is overeating a symptom, an eating behavior, a synonym concept of EE or a synonym for binge eating? Finally, this scoping review will hopefully enable to identify gaps in knowledge.

METHOD:

This scoping review will be conducted following the PRISMA-ScR statements which are described in the Preferred Reporting Items for Systematic reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR, Tricco et al, 2018).

Eligibility criteria (inclusion and exclusion criteria)

Studies will be selected based on the following criteria:

PICO criteria / keywords:

Participants: People (adult human subjects, 18 years and +) with Binge Eating Disorder (BED) (and meeting full DSM-IV-TR or DSM-5 criteria for BED) or subthreshold BED, and people (adults human subjects, 18 years and +) presenting with Emotional Eating (EE) or Emotional Overeating (EO).

Interventions: Our review will focus on the impact of “emotional regulation” and “inhibitory control” on BED and EE.

Comparisons: Our review will not focus on studies with specific comparisons.

Outcomes: Our review will consider all types of outcomes related to emotion regulation and inhibitory control in BED, EE and EO (e.g. deficit, level of attention, response impairment, degree of compulsivity...).

Studies: All types of journal articles, published in peer-reviewed scientific journals, except all types of reviews, book chapters, preprints, and thesis.

Languages: English and French

Period / context: Only papers published between January 2009 and January 2022 were eligible for inclusion. The Binge Eating Disorder's MeSH (Medical Subject Headings) was introduced in 2010. Nevertheless, 2009 was chosen because it was a "year of transition" between the previous indexing as Bulimia Nervosa and the BED MeSH introduction in 2010.

Exclusion criteria: No reviews, book chapters, preprints, and thesis.

Information sources

Bibliographic databases: PubMed and PsycINFO.

The literature search will be limited to the eligibility criteria outlined above.

Date of search: January 2022.

Search strategy

The search strategy focused on articles published between January 2009 and January 2022. The following search equation was used in both databases: ("Binge-Eating Disorder"[Mesh] OR BED OR Binge eater OR Emotional Eating OR Emotional Overeating OR Overeater OR Emotional eater OR Overeating) AND ("Emotional Regulation"[Mesh] OR Emotion regulation OR Reappraisal OR Rumination OR Attentional deployment OR Mood regulation OR "Inhibition, Psychological"[Mesh] OR Inhibitory control).

Duplicates will be removed, and all references will be imported on Rayyan, an online application for systematic reviews.

Study selection process

1st step (screening): Using Rayyan, an online IA software (<https://www.rayyan.ai/>) (Ouzzani et al, 2016), the screening will be conducted by at least two reviewers (MA, and SC or PEB) up to four reviewers (i.e. MA, SC, PEB, MCB). Discrepancies will be resolved by a third, or even fourth investigator(s). On this screening step, for each paper, inclusion criteria described in the *Eligibility criteria (inclusion and exclusion criteria)* section will be applied on both title and abstract.

2nd step (eligibility): Eligibility will be conducted by at least two reviewers (MA, and SC or PEB) (up to four reviewers, i.e. MA, SC, PEB, MCB). Discrepancies will be resolved by a third or even fourth investigator(s). On this screening for eligibility step, for each paper, inclusion criteria described in the *Eligibility criteria (inclusion and exclusion criteria)* section will be applied on the complete reading of the article.

At least two reviewers (up to four reviewers) will work on steps 2 and 3. In case of disagreement regarding the selection of an article for the next step, one or two more reviewers will be called on and discussions will take place between the reviewers.

In order to identify articles missed from the selection process, a final search will be conducted on the references lists / bibliographies of the included studies.

Screening and eligibility steps will be performed using Rayyan web app for systematic reviews (Ouzzani et al, 2016).

Data extraction

The investigators (MA, and SC or PEB) will extract the following data for each study: authors, title, year, country of the study, journal, type of study, study design/method, populations and samples sizes, type of interventions, possible comparisons, outcomes/results.

The data will be presented in a form of a table, presenting the main summarized characteristics, PICO criteria and summary of the findings, for each selected study in step 2. This table will be included in the final manuscript of the Scoping Review.

Data analysis

Data will be analyzed qualitatively. In particular, a distinction between the type of population (BED, EE or EO) will be done first in order to evaluate the degree of emotion regulation and of inhibition depending on the type of population. Then, a distinction between interventions (inhibitory control or emotion regulation) will be performed. If relevant, a description of the methodology (questionnaires, EEG...) will also be presented and discussed.

Critical appraisal

Critical appraisal is not planned at the moment. However, an evaluation of the methodologies will be conducted in case of significant discrepancies regarding the conclusions of the different papers.

Competing of interest

None

Authors' contributions

Mahé Arexis (PhD in cognitive psychology) is the Research Associate on this project, she reads all the articles and writes the article/Scoping review. Pierre-Édouard Billot (PhD in neurosciences / Research Associate) reads all the articles and contributes to the writing of the article/scoping review. Gilles Feron (Research Director) was trained with SLR and Scoping reviews. He participated in the meetings of this project. Marie-Claude Brindisi (Professor in Nutrition and Hospital Practitioner) works on nutrition and obesity and participated in the

meetings of this project. Stéphanie Chambaron (PhD in cognitive psychology, Research Director) works on cognition and nutrition. She participated in the meetings, read a part of the articles, managed and funded this project with the ANR JCJC (ANR-17-CE21-0001).

Appendices

None

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