Review

Daily symptom ratings for studying premenstrual dysphoric disorder: A review

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ABSTRACT

Background: To review how daily symptom ratings have been used in research into premenstrual dysphoric disorder (PMDD), and to discuss opportunities for the future.
Methods: PsycINFO and Medline were systematically searched, resulting in the inclusion of 75 studies in which (1) participants met the diagnostic criteria for late luteal phase dysphoric disorder (LLPDD) or PMDD and (2) diaries were used to study LLPDD/PMDD.
Results: To date, diaries have been used to gain insight into the aetiology and phenomenology of PMDD, to examine associated biological factors, and to assess treatment efficacy. We found low consistency among the diaries used, and often only part of the menstrual cycle was analysed instead of the whole menstrual cycle. We also observed that there was substantial variability in diagnostic procedures and criteria.
Limitations: This review excluded diary studies conducted in women with premenstrual syndrome, women seeking help for premenstrual complaints without a clear diagnosis, and women without premenstrual complaints.
Conclusions: Prospective daily ratings of symptoms and related variables provide a valuable and important tool in the study of PMDD. This paper addresses some options for improving the use of diaries and proposes the use of experience sampling and ecological momentary assessment to investigate within-person variability in symptoms in more detail.

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1. Introduction

The menstrual cycle is often characterized by somatic and psychological changes. Women show variation in the extent to which they experience these changes and are distressed or impaired by them. Premenstrual symptoms are thought to adversely affect a significant proportion of women, but the prevalence of premenstrual disorder depends on the diagnostic criteria used to assess it. For example, premenstrual syndrome (PMS) is thought to affect around one in four premenopausal women (Steiner et al., 2003). PMS is a gynaecological condition characterized by psychological as well as somatic symptoms (American College of Obstetricians and Gynaecologists, 2000; Royal College of Obstetricians and Gynaecologists, 2007). Functional impairment in PMS may be mild and related to either somatic or psychological symptoms.

In contrast, according to the current Diagnostic and Statistical Manual of Mental Disorders (DSM-5), a diagnosis of premenstrual dysphoric disorder (PMDD) requires the presence of at least one marked psychological symptom (i.e. affective lability, irritability, depressed mood, or anxiety) and at least four additional psychological, somatic, or behavioural symptoms which interfere with daily life (American Psychiatric Association, 2013). Depending on the study method and assessed population, the prevalence of PMDD in premenopausal women varies between 2–8% (Epperson et al., 2012; European Medicines Agency, 2012). PMDD was first added to the DSM-III-R in the Appendix, under the name late luteal phase dysphoric disorder (LLPDD). In the DSM-IV, PMDD remained in the Appendix under its current name. In the DSM-5, PMDD has been classified as a depressive disorder. To confirm a PMDD diagnosis, the DSM-5 requires at least two consecutive months of daily symptom ratings. These prospective ratings are used to determine symptom cyclicity, thus differentiating PMDD from other depressive disorders such as major depressive disorder (MDD) (American Psychiatric Association, 2013; Epperson et al., 2012; Rapkin et al., 2002).

Compared to retrospective assessments such as the Premenstrual Assessment Form (PAF) (Allen et al., 1991) and the Premenstrual Symptoms Screening Tool (PSST) (Steiner et al., 2003), diaries are more time consuming and more demanding for both patient and clinician. However, retrospective assessments tend to result in an overestimation of symptoms (Haywood et al., 2002). This is explained by intrinsic differences between the two measurement approaches. Firstly, retrospective assessments rely on the recall of memories. As memories are not exact reflections of the past, they can be biased, for example by previous experience and by the context in which retrieval occurs (Conner and Barrett, 2012; Eich, 1980). Therefore, memory-distorting factors are more likely to play a role in retrospective assessment than in assessment by diary (Conner and Barrett, 2012; Schwarz, 2012; Shiffman et al., 2008). Secondly, variability of symptoms is harder to assess in retrospect than mean levels of symptoms (Ebner-Priemer and Trull, 2012). This is very relevant for the diagnosis of PMDD, which includes affective lability as a characteristic psychological symptom. To accurately examine this symptom, it appears necessary to assess positive and negative affect repeatedly.

There may be benefits beyond diagnosis when asking women, who are seeking help for premenstrual discomfort, to keep a diary for two months. First, daily ratings of symptoms and other self-report variables may contribute to insights into the phenomenology of PMDD and into the aetiology and impact of premenstrual symptoms. Second, daily symptom ratings may be linked to levels of various biomarkers, thus providing insight into the biology of PMDD. Third, diaries may yield important information about the efficacy of and mechanisms underlying PMDD treatment. Fourth, within-person processes can be studied in addition to between-person differences (Molenaar, 2004; Molenaar and Campbell, 2009).

The present review had two major aims. As indicated in the previous paragraph, there are at least four different ways in which PMDD diaries can be applied in research. By reviewing the extent to which this has been done to date, we aimed to uncover lacunae in the PMDD literature. Additionally, we reviewed the type of diary and data extraction used in the various studies. This was done to promote methodological consensus across future diary studies on PMDD. In the Discussion, we also discuss how standardisation of PMDD diaries might benefit clinical practise.

2. Methods

We conducted a search in PsycINFO and Medline using the following string of search terms: "("LLPDD" OR "late luteal phase dysphoric disorder" OR "PMDD" OR "PMS" OR "premenstrual") AND ("diary" OR "diaries" OR "daily" OR "prospective" OR "momentary assessment" OR "experience sampling"). In August 2015 this resulted in a total of 1444 hits.

We formulated the following study selection criteria: (1) Publication as an empirical article in an English-language journal; (2) A majority of study participants met the diagnostic criteria of LLPDD or PMDD according to a validated retrospective measure such as the PAF or the PSST (Allen et al., 1991; Steiner et al., 2003) in combination with at least two months of daily symptom ratings; (3) Daily ratings were not solely used for diagnostic purposes but also as an outcome measure, i.e. daily ratings were included in the statistical analysis as a dependent variable and the outcomes of the analysis were described in the result Section; (4) Daily ratings that were used as an outcome measure were provided at least once a day for at least one month.

In accordance with the PRISMA guidelines (Menzies, 2011; Moher et al., 2009), studies were subsequently selected by two independent reviewers (RCB and SEJ) via a three-stage procedure. In the first stage, studies were selected based on title. After excluding studies for which the title clearly indicated that the study did not meet the selection criteria, 420 studies remained. In the second stage, the abstracts of the remaining studies were read. Studies were excluded based on their abstract when the abstract stated that participants had no diagnosis, or a diagnosis other than PMDD/LLPDD (236 studies); when the abstract did not mention the use of daily ratings (13 studies); when the abstract indicated that daily ratings were only used to assess the diagnosis (7 studies), or when the abstract revealed e.g. a review or commentary (44 studies). After completing this stage, 120 studies remained. In the final stage, studies were selected by reading their methods and, if it remained unclear whether daily ratings were included in the statistical analyses as an outcome variable, the result section was read. Disagreements between the reviewers were solved by reaching consensus through discussion.