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Review

Is dream recall underestimated by retrospective measures and enhanced by keeping a logbook? A review

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ABSTRACT

There are two methods commonly used to measure dream recall in the home setting. The retrospective method involves asking participants to estimate their dream recall in response to a single question and the logbook method involves keeping a daily record of one's dream recall. Until recently, the implicit assumption has been that these measures are largely equivalent. However, this is challenged by the tendency for retrospective measures to yield significantly lower dream recall rates than logbooks. A common explanation for this is that retrospective measures underestimate dream recall. Another is that keeping a logbook enhances it. If retrospective measures underestimate dream recall and if logbooks enhance it they are both unlikely to reflect typical dream recall rates and may be confounded with variables associated with the underestimation and enhancement effects. To date, this issue has received insufficient attention. The present review addresses this gap in the literature.

Contents

1. Introduction

There are two widely used methods for measuring dream recall in the home setting. The logbook method requires research participants to record their dream recall each morning using a logbook (AKA diary or journal), typically for a period

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of several weeks. Using this method, dream recall is most commonly operationalised as *Dream Recall Frequency* (DRF), which refers to the number of mornings in a given time period on which some amount of dream content is recalled. Participants are sometimes asked to record the number of separate dreams recalled each morning, which permits an alternative operationalisation referred to as *Dream Count* (DC) in the present review. Logbooks may also require participants to provide written narratives of their dreams, allowing additional operationalisations of dream recall such as the number of words per dream narrative. These logbooks are referred to as *narrative logbooks* in the present review as opposed to *checklist logbooks*, which do not require participants to write out their dreams. The primary alternative to the logbook method is the retrospective method, which involves asking participants to report their dream recall in response to a single question. These questions take a variety of forms but are typically either open-ended (e.g. "How many dreams do you recall per week?") or involve reporting one's DC or DRF by selecting one of several fixed response options (e.g. "almost every morning", "several times a week", "about once a week", etc.). Until recently, the implicit assumption has been that the choice between using retrospective or logbook measures is of little consequence and that the two are essentially equivalent (Beaulieu-Prévost & Zadra, 2007). However, this assumption is challenged by numerous studies that have used both measures in the same sample and found that retrospective measures yield significantly lower dream recall rates than logbook measures.

This retrospective-logbook disparity has two principal explanations. One of these is that retrospective dream recall measures have a tendency to underestimate true dream recall rates (Beaulieu-Prévost & Zadra, 2007; Schredl, 2002; Zadra & Robert, 2012). The other is that keeping a logbook tends to enhance dream recall (Beaulieu-Prévost & Zadra, 2007; Cohen, 1969; Cory, Ormiston, Simmel, & Dainoff, 1975; Goodenough, 1991; Schredl, 2002). If retrospective measures underestimate dream recall, they may provide a poor reflection of true dream recall rates and could be confounded with other variables related to underestimation (for example, participants with poorer long-term memory function may be more prone to underestimation). Similarly, if logbooks have a tendency to enhance dream recall, they may also fail to provide an accurate reflection of typical (unaltered) dream recall rates and may be confounded with variables related to the enhancement effect (for example, highly motivated participants may spend more time trying to recall dreams prior to making logbook entries and experience greater enhancements in dream recall as a consequence). It may even be the case that the retrospective-logbook disparity is due to a combination of both retrospective underestimation *and* logbook enhancement. If this is correct, *both* measures may be of limited validity. This might even explain why most studies on correlates of home dream recall have found only weak relationships and inconsistent or even contradictory findings (for reviews, see Beaulieu-Prévost & Zadra, 2007; Blagrove & Pace-Schott, 2010; Goodenough, 1991; Schredl & Montasser, 1996/1997a, 1996/1997b; Schredl, Wittmann, Ciric, & Götz, 2003; Zadra & Robert, 2012). Clearly then, the retrospective-logbook disparity is an important issue that has potentially far-reaching implications for research on home dream recall. However, as several authors have noted this issue has received insufficient attention and the cause of the disparity remains uncertain (Beaulieu-Prévost & Zadra, 2007; Schredl, 2002; Schredl & Fulda, 2005; Zadra & Robert, 2012). The purpose of the present review is to address this gap in the literature and raise awareness of psychometric issues related to the measurement of dream recall in the home setting.

2. Literature search

An extensive literature search was conducted to identify studies in which a retrospective-logbook disparity for general dream recall was reported or could be calculated. The primary search strategy was to identify studies in which logbooks were used and examine them to see if retrospective measures were also used. A secondary strategy was to identify and check the measures used in studies that were specifically about dream recall. Titles and abstracts were searched in the electronic databases Embase, MEDLINE, PsycINFO, and Scopus using the following search terms: *dream* AND (recall OR dream journal* OR diar* OR log*)*. Studies were excluded if they were not published in English, if they were not published in a peer-reviewed journal, if logbook dream recall was measured in a laboratory or non-home setting, if they were case studies or if they were non-controlled studies that involved an intervention during the logbook period likely to affect dream recall. The literature search was conducted in August–September 2014 and initially yielded 211 results from Embase, 418 from Medline, 1058 from PsycINFO and 246 from Scopus. Based on a preliminary reading of titles and abstracts, 235 studies that did not meet any of the exclusion criteria were identified as potentially relevant. Full texts of these studies were examined and a total of 24 studies were found in which a retrospective-logbook disparity was reported. Two studies (Antrobus, Dement, & Fisher, 1964; Cory et al., 1975) were excluded because there was insufficient data to calculate the size of the disparity and one study (Paulson & Parker, 2006) was excluded because it involved a lucid dreaming training program that may have affected logbook dream recall rates. Four studies (Schredl, 2004a, 2008, 2009b, 2010) were discarded because they were based on the same dataset as an earlier study that also reported a disparity (Schredl et al., 2003). Details of the remaining 17 studies are presented in Table 1. In all cases, disparities are expressed as percentages of the retrospective dream recall rates (i.e. logbook rate minus retrospective rate divided by retrospective rate).

The majority of studies (77%) included in Table 1 observed a retrospective-logbook disparity of between 10% and 610% and the mean (unweighted) disparity for all 17 studies was 115%. In several studies dream recall was operationalised as DC but mistakenly referred to as DRF and in all such cases this has been corrected. With only one exception, the operationalisation of dream recall was consistent for both retrospective and logbook measures. However, the disparity reported by Redfering and Keller (1974) may have been inflated due to retrospective-DRF being compared to logbook-DC.