



# Relations among peritraumatic dissociation and posttraumatic stress: A meta-analysis

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## ABSTRACT

A meta-analysis was performed on the empirical literature which addressed the relationship of peritraumatic dissociation to posttraumatic stress (PTS). Extensive literature searches were conducted to identify as many relevant studies as possible, and revealed 59 independent eligible studies. All studies were coded using a detailed code sheet that included effect measures, variables that indicated the methodological quality of the studies, and substantial variables that might theoretically affect the relationship between peritraumatic dissociation and PTS. A significant positive relation between peritraumatic dissociation and PTS was found. Differences in the methodological rigor between studies – time elapsed since peritraumatic dissociation, design, sample type, and study type – significantly and sufficiently explained the variability in effect sizes between studies. Theoretical variables did not explain such variability. Although results underline earlier findings, due to designs of the reviewed studies no conclusions could be drawn as to causal relations between peritraumatic dissociation and PTS.

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Individuals exposed to (potentially) traumatizing events may report dissociative reactions during or immediately following such events, referred to as *peritraumatic dissociation* (Marmar et al., 1994, 1999). Many authors have argued that the immediate effects of peritraumatic dissociation are adaptive, i.e., protect the individual from intense emotional states such as helplessness, horror, and fear, but that in the long-run, peritraumatic dissociation increases the risk of general psychopathology and of posttraumatic stress disorder (PTSD) in particular (Bennet & Hacker, 2003; Bremner, 1997; Briere, Scott, & Weathers, 2005; Van der Kolk, Van der Hart, & Marmar, 1996; Marmar, Weiss, & Metzler, 1998). In the first meta-analysis of studies on the relationship between peritraumatic dissociation and PTSD following different forms of trauma, Ozer, Best, Lipsey, and Weiss (2003) found that peritraumatic dissociation was the strongest predictor for PTSD and related symptoms compared to other common predictor variables. And in the most recent meta-analysis by Breh and Seidler (2007), a significant effect size of .36 was found. Breh and Seidler compared 34 studies and found the results to be homogenous, indicating no “real” differences between studies; thus, the overall effect size could be computed across all studies. Despite this robust conclusion, Breh and Seidler then conducted two separate meta-analyses, one on studies using quasi-prospective designs, the other on studies with retrospective designs. They made this categorical distinction between designs because retrospective studies resulted in a correlate between peritraumatic dissociation and PTSD, where quasi-prospective studies resulted in an outcome that can be interpreted as a risk factor. Although no formal test on differences between these outcomes was conducted, the fact that results were homogenous across studies implies that no statistical differences between both groups can be found.

The homogeneity that Breh and Seidler (2007) found is remarkable and in contrast to our own conclusions, based on a narrative analysis, that methodological quality of the study and differences in substantive variables results in differences in outcomes between studies (Van der Hart, Van Ochten, Van Son, Steele, & Lensvelt-Mulders, *in press*). A narrative inspection of the studies on the relation between peritraumatic dissociation and PTS showed a large variability in study results. Even though a majority of studies consistently demonstrated a positive relationship between peritraumatic dissociation and posttraumatic stress (PTS), a significant group of studies failed to replicate this relationship, or found that the relationship between peritraumatic dissociation and PTS disappeared or significantly diminished after other variables were taken into account (Holeva & Tarrier, 2001; Marshall & Schell, 2002; Marx & Sloan, 2005). Candell and Merckelbach (2004) posited that conflicting results of peritraumatic dissociation as a predictor of PTSD could be due to the significant limitations of self-report methodologies on which studies of peritraumatic dissociation rely, because people find it difficult to give accurate descriptions of past emotional states as a general rule (Candell & Merckelbach, 2004).

In the same narrative review we also described the large differences in the methodological quality between studies (Van der Hart et al., *in press*): differences as to the measurement of peritraumatic dissociation and posttraumatic stress (including stress reactions, symptoms, and disorder) (PTS); the design of the study; and the very loose identification of the temporal boundaries of the study, which is also related to the large differences between studies of the first measure point of PTS. Such differences are known to affect the validity of data and to result in different outcomes between studies. Moreover, Van der Hart et al. (*in press*) reported differences in the ways peritraumatic dissociation and PTS are defined, differences between the types of trauma investigated, and differences in age and gender between samples: these may all affect study results. In addition, we identified differences in whether victims perceived traumatizing events as intentionally directed at them, or as a chance of nature. All these differences among studies made it difficult for us to understand how results across studies could have been found to be homogeneous and that a meaningful overall effect size could be computed. Therefore, we decided to extend our narrative review to a meta-analysis.

Meta-analysis or quantitative synthesis encompasses a set of methods for the systematic combination of information from different sources. Meta-analysis therefore provides a statistical summary of what is common, and analyses what is different across a set of independent studies. It provides researchers with a quantifiable summary that may be used to evaluate past research and can help identify gaps in knowledge found in the published literature. Therefore, meta-analysis is both an effective tool to summarize what is known about the relation between peritraumatic dissociation and of PTS and to suggest future research in this field.

The goal of this study is to explore the evidence for and against the predicted relation between peritraumatic dissociation and PTS. Our meta-analysis follows, where possible, the recommendations of the Cochrane Collaboration for systematic reviews and meta-analyses (Cochrane Collaboration, 2006).

## 1. Method

### 1.1. Retrieval and selection of studies

Between January and May 2007 we conducted a comprehensive search for empirical studies on the predictive relation between peritraumatic dissociation and PTS(D). A systematic computer search was performed using the international silver platter system of the library of Utrecht University, which included the bibliographical databases of JSTOR (Journal Storage Archive), OMEGA, PsychINFO, PUBMED (including MEDLINE and PreMedline), and SSCI (Social Sciences Citation Index). We also searched the PILOTS database, an electronic index to traumatic stress literature, produced and maintained by the National Centre for PTSD (Lerner, 2007). Finally, to acquire as many unpublished papers and reports as possible we contacted known scholars in the field and organizations, such as the Cochrane foundation, the Campbell Collaboration and the National Center for PTSD, with an appeal for help.

Keywords included peritraumatic dissociation, peritraumatic emotional responses, peritraumatic distress, posttraumatic stress, and posttraumatic stress disorder, used individually as well as in search strings. Once an initial pool of articles was obtained, a snow ball search was conducted from the reference section of every article.

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