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# Prolonged exposure in patients with chronic PTSD: predictors of treatment outcome and dropout

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## Abstract

The present study investigated predictors of treatment outcome and dropout in two samples of PTSD-patients with mixed traumas treated using prolonged imaginal exposure. Possible predictors were analysed in both samples separately, in order to replicate in one sample findings found in the other. The only stable finding across the two groups was that patients who showed more PTSD-symptoms at pre-treatment, showed more PTSD-symptoms at post-treatment and follow-up. Indications were found that benzodiazepine use was related to both treatment outcome and dropout, and alcohol use to dropout. Demographic variables, depression and general anxiety, personality, trauma characteristics, feelings of anger, guilt, and shame and nonspecific variables regarding therapy were not related to either treatment outcome or dropout, disconfirming generally held beliefs about these factors as contra-indications for exposure therapy. It is concluded that it is difficult to use pre-treatment variables as a powerful and reliable tool for predicting treatment outcome or dropout. Clinically seen, it is therefore argued that exclusion of PTSD-patients from prolonged exposure treatment on the basis of pre-treatment characteristics is not justified. © 2002 Elsevier Science Ltd. All rights reserved.

*Keywords:* PTSD; Prolonged exposure; Prediction; Treatment outcome; Dropout

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## 1. Introduction

In several controlled studies, prolonged exposure techniques have been demonstrated to be effective in the treatment of post-traumatic stress disorder (PTSD; Boudewyns & Hyer, 1990; Cooper & Clum, 1989; Foa et al., 1999; Keane, Fairbank, Caddell, & Zimering, 1989; Marks,

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Lovell, Noshirvani, Livanou, & Thrasher, 1998; Tarrrier et al., 1999). Foa and Meadows (1997) concluded that “given the state of art (...), prolonged exposure might be considered the treatment of choice for PTSD”. Nevertheless, studies show that a considerable number of PTSD patients, about 25 to 45%, still fulfil diagnostic criteria for PTSD at the end of treatment, indicating that exposure therapy may lead to improvement, but not to recovery in all cases.

Enhancing knowledge of the prognostic features which affect treatment outcome is important for several reasons. First, this knowledge can be helpful in indicating treatments of choice, especially since other effective treatments, such as cognitive restructuring therapy, are available (Foa et al., 1999; Marks et al., 1998; Tarrrier et al., 1999). Second, increased knowledge about the factors associated with exposure treatment failure may lead to insight into the fundamental processes underlying exposure, and eventually to adaptations in the exposure treatment procedures, in order to improve the patients’ prognosis. Third, an early identification of possible treatment dropouts enables the therapist to adjust treatment delivery and planning, in order to prevent dropout.

Before presenting our study, an overview is offered of research findings regarding prognostic factors of development or maintenance of PTSD-symptoms. With regard to (1) *demographic variables*, several studies revealed that younger people were more prone to develop PTSD than older people (Norris, 1992; Van der Kolk, 1987; Wolfe, Erickson, Sharkansky, King, & King, 1999). It is assumed that younger people have more trouble recovering from a trauma, due to their underdevelopment in neurological paths (McFarlane, 1989; Van der Kolk, 1987). In treatment outcome studies, age and outcome tended to be unrelated (Ehlers et al., 1998; Foa, Rothbaum, Riggs, & Murdock, 1991; Jaycox, Foa, & Morral, 1998; Marks et al., 1998; Munley, Bains, Frazee, & Schwartz, 1994; Tarrrier, Sommerfield, Pilgrim, & Faragher, 2000). Several studies indicated that the risk of developing PTSD following exposure to a traumatic event was greater in women than in men (Breslau, Davis, Andreski, & Peterson, 1991; Norris, 1992; Wolfe et al., 1999). This finding may have resulted partly from the fact that women are more prone to sexual assault, traumas known to have a high risk for subsequent pathology development. Tarrrier et al. (2000) found females to have better treatment outcomes. In other treatment outcome studies, however, no sex differences were found (Jaycox et al., 1998; Marks et al., 1998). Other demographic variables such as marital status, employment, level of education (Ehlers et al., 1998; Foa et al., 1991; Tarrrier et al., 2000), and IQ (Munley et al., 1994) were found to be unrelated to treatment outcome. In one study, people who did not work were more liable to drop out of treatment than those who did (Foa et al., 1999), but in other studies no differences were found in demographic variables between dropouts and completers (Marks et al., 1998; Tarrrier et al., 1999).

Several studies found (2) *substance abuse* (alcohol, marihuana, benzodiazepines or heroine) to be associated with the development of PTSD (Fischer, 1991; Reifmann & Windle, 1996; Ruzek, Polusny, & Abueg, 1998). Pitman et al. (1991) found that alcohol abuse may cause severe complications during exposure therapy. It is assumed that alcohol or drugs abuse interferes with treatment outcome or is predictive of noncompliance and eventually of dropout (Perconte & Griger, 1991). Nevertheless, Tarrrier et al. (2000) found no relationship between the use of psychotropic medication and treatment outcome. With regard to (3) *severity of symptoms*, conflicting results are reported. One study (Perconte & Griger, 1991) found a relationship between a greater number of PTSD symptoms at pre-treatment and poor treatment outcome, whilst another (Foa, Riggs, Massie, & Yarczower, 1995) found that this related to a better outcome. In the latter study, patients

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