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## Blood–injury–injection phobia and dental phobia

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### Abstract

The present study was carried out to explore the relation between BII phobia and dental phobia. An additional aim was to determine the fainting tendency of dental phobics and BII phobics during an invasive treatment procedure. Participants were 63 patients undergoing treatment in a dental fear clinic, and 173 patients undergoing dental surgery in a university hospital. They completed measures on fears of particular medical and dental stimuli, fainting history, general trait anxiety, dental anxiety, BII anxiety, BII avoidance, and a questionnaire aimed to define a phobia based on DSM-IV criteria. Immediately after treatment information was obtained on exposures to blood or injections, state anxiety, and feelings of faintness during treatment. The results did not indicate any significant relationship between measures of dental anxiety and BII anxiety or BII avoidance. However, 57% of the dental phobic patients could also be classified as BII phobic. The proportion of dental phobics who reported fainting episodes in their past was similar to that of the BII phobics (37%), but none of the participants fainted during treatment. It is concluded that, albeit the level of co-occurrence for both types of phobias is high, dental phobia should be considered as a specific phobia, independent of the BII subtype within DSM-IV. Further, the findings are inconsistent with the notion that individuals with BII phobia have a remarkably high tendency to faint in the presence of their phobic stimuli. © 1998 Elsevier Science Ltd. All rights reserved.

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### 1. Introduction

According to DSM-IV (APA, 1994) criteria exhibiting a high level of irrational or excessive fear and avoidance on exposures to blood, injury, injections or other conceptually related medical stimuli is indicative of blood–injury–injection (BII) phobia. Blood–injury phobia is

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fairly common within community samples, with proportions of about 3% (Agras et al., 1969; Fredrikson et al., 1996). Much less is known about the prevalence of injection phobia. In an American study, Agras et al. (1969) reported only ‘common fear’ of injections, which was 12% of the 10- and 20 year-old in the general population. There are indications that injection phobia is a more circumscribed form of blood phobia (Öst, 1992).

One situation in which one would expect BII fears to be highly prevalent is the dental situation. During dental treatment patients are frequently confronted with medical paraphernalia and invasive procedures (e.g., needle injections and extractions), which can easily lead to pain, and acquisition of fear and phobia. Indeed, population surveys show that more than 5% of the people absolutely avoid dental care, whereas 20 to 30% dislike visits to the dentist so much that they use dental services only in case of considerable discomfort or pain (Kleinknecht et al., 1973; Schuurs et al., 1984; Milgrom et al., 1988; Stouthard & Hoogstraten, 1990).

In reviews of the literature on fears related to expected medical treatments or investigations, BII fears and dental fears are often dealt with together. For example, Edelman (1992) considers dental phobia as a subtype of blood–injury phobia, while Fredrikson et al. (1996) group phobias of injections, dentists and injuries all into one single category of ‘mutilation phobia’. Although it seems reasonable to argue that a large part of the people suffering from dental phobia avoid dental treatment due to fear of exposure to blood, injections, or bodily mutilation, studies investigating the relation between dental fear and BII fears have yielded mixed results. For example, subjects who were exposed to threat-relevant slides rated slides showing blood and decayed teeth as significantly more frightening than those depicting dental instruments or other typical dental situations (De Jongh et al., 1995a). In the same study a significant positive correlation ( $r = 0.55$ ) was found between a measure of dental anxiety, and the total score of the five BII items of the Fear Questionnaire (FQ; Marks & Mathews, 1979). This finding, and the fact that 37% of a group of 109 anxious dental patients (Berggren et al., 1995) rated the FSS-II item “hypodermic needles” as highly anxiety provoking (ranked third, after “suffocating” and “death of a loved one”) suggest a significant co-occurrence of dental fear with BII fears. Other studies, however, found only a small overlap between these fears. For example, a recent community survey by Locker et al. (1997) showed that only 16% of the subjects that were classified as dentally anxious could also be classified as blood–injury fearful. Similarly, Öst (1992) found that less than 10% of a group of 81 primary blood phobics, and less than 20% of 59 injection phobics, also indicated a strong fear of the dental situation. The present study was carried out to explore further the relation between dental phobia and BII phobia. We determined the relationship between characteristics of dental fear and BII fears among dental phobic patients. In addition, we explored the degree of overlap between dental phobia and BII phobia on the basis of DSM-IV criteria among patients who had to undergo an invasive treatment procedure.

The literature on BII phobia suggests that this condition is uniquely associated with fainting in phobic situations (Connolly et al., 1976; Öst et al., 1984a; Thyer et al., 1985; APA, 1994, p. 407; Page, 1994). This highly specific response is considered to be the result of a diphasic pattern consisting of a transitory increase in heart rate and blood pressure, followed by a marked decrease in these parameters, thereby setting the stage for a vasovagal syncope (Graham et al., 1961). Estimates of the frequency of fainting in the presence of blood and injury

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