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The Role of Self-Directed *In Vivo* Exposure in Combination with Cognitive Therapy, Relaxation Training, or Therapist-Assisted Exposure in the Treatment of Panic Disorder with Agoraphobia

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Abstract—The effects of self-directed *in vivo* exposure in the treatment of panic disorder with agoraphobia were examined. Seventy-four chronic and severe agoraphobic subjects were randomly assigned to Cognitive Therapy plus graded exposure, Relaxation Training plus graded exposure, or therapist-assisted graded exposure alone. Treatment consisted of 16 weekly 2.5-hour sessions. All subjects received programmed practice instructions for engaging in self-directed exposure as a concomitant strategy to their primary treatment. All subjects were instructed to keep systematic behavioral diary recordings of all self-directed exposure practice. The diary data were analyzed across and within treatments and assessment phases. Statistically significant findings were obtained across all diary measure domains with powerful repeated measures effects observed across all treatments. Significant between group effects and treatment × repeated measures interactions were obtained across the diary measure domains. Multiple linear regressions of *in vivo* anxiety levels and, to a lesser extent, frequency of self-directed exposure practice were found to be significantly associated with global assessment of severity at posttreatment and 3-month follow-up assessments. Furthermore, depression and marital satisfaction were significantly associated with *in vivo* anxiety. These and other findings are discussed with regard to their conceptual and clinical implications.

This study is dedicated to Martin Murphy, whose spirit touched all who knew him.

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Panic disorder with agoraphobia (PDA) is a chronic and disabling disorder. According to National Institutes of Mental Health (NIMH) prevalence studies, PDA is estimated to affect between 5 and 10 million Americans (Myers et al., 1984). The course of untreated anxiety disorders in general, including PDA, is chronic, usually with little or no remission (Barlow, 1988; Michelson, 1987). Furthermore, PDA has been shown to be associated with increased risk for psychiatric comorbidity, medical disorders, and economic hardship (Weisman, Klerman, Makowitz, & Ouellette, 1989).

In recent years a number of treatment modalities have been examined in comparative outcome studies. Specifically, cognitive, behavioral, and psychopharmacological modalities have been shown to be beneficial in treating PDA. Self-directed, graded, *in vivo* exposure (SDE) to phobic stimuli is a treatment strategy that has been typically combined with these interventions to facilitate improvement. In self-directed exposure (also known as programmed practice, exposure homework, or self-exposure), the client gradually enters increasingly more phobic situations to foster habituation.

Several studies in the late 1970s and early 1980s demonstrated that SDE alone could effect moderate reductions in agoraphobic symptomatology and, for a small percentage of clients, could effect complete amelioration (Greist, Marks, Berlin, Gournay, & Noshirvani, 1980; Mathews, Teasdale, Munby, Johnston, & Shaw, 1977;). Later studies indicated that when combined with a single active treatment, such as behavior therapy or pharmacotherapy, SDE acts as a catalyst for effecting enhanced improvement when compared to behavior therapy or pharmacotherapy alone (Mavissakalian & Michelson, 1983; Telch, Agras, Taylor, Roth, & Gallen, 1985).

While SDE has been shown to be an important componet in the treatment of PDA, as a singular modality, SDE appears to be an inadequate treatment for PDA. Therapeutic approaches based exclusively on the exposure principle may be incomplete by themselves because several phenomena may interfere with habituation. Elevated levels of psychophysiological arousal (Lader & Mathews, 1968), cognitive interference, such as self-defeating thoughts, perceived external locus of control (Foa & Kozak, 1986; Michelson, Mavissakalian, & Marchione, 1988), worry (Borkovec, 1985), and/or negative mood state (Foa & Kozak, 1986), can interfere with habituation processes during exposure. While SDE alone may provide presentation of phobic cues, it does not appear to reduce or stabilize some of these phenomena that interfere with habituation during exposure and may be incomplete as a unitary treatment strategy for PDA (Mavissakalian & Michelson, 1983).

In a pilot study, Marchione, Michelson, Greenwald, and Dancu (1987) investigated treatment strategies that may reduce or eliminate these obstacles to exposure and habituation for PDA clients. In this preliminary work, they found that two treatment modalities, cognitive therapy combined with therapist-directed graduated exposure (CT + GE) and relaxation training combined with therapist-directed graduated exposure (RT + GE), effected reductions and stabilization