## The Transtheoretical Model and Stress Management Practices in Women at Risk for, or Infected With, HIV

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Although scientific inquiry using the Transtheoretical Model of Behavior (TTM) supports various behavior changes in multiple samples, no research was found that examined this model with women already infected with HIV. This article provides a brief overview of the related literature and describes a pilot study that evaluated TTM concepts in women at risk for, or infected with, HIV. The pilot study examined preliminary psychometrics of the research measures in women at risk for (n = 9), or infected with, HIV (n =10), and examined predicted differences in situational confidence and stress management practices by HIV serostatus (positive vs. negative) and stage of change (precontemplation and contemplation vs. preparation, action, and maintenance) implied by the TTM. This pilot study supports use of the TTM to examine readiness to use stress management behavior in women regardless of their HIV serostatus. Further TTM stress management inquiry is encouraged to extend the knowledge base needed in caring for this vulnerable population.

**Key words:** HIV-positive women, Transtheoretical Model, stress management

Stress is well documented in HIV-positive people (Franke, Jager, Thomann, & Beyer, 1992; Pergami et al., 1993; Semple et al., 1993; van Servellen et al., 1998) and acts as a cofactor to HIV disease progression (Biondi & Zannino, 1997; Goodkin, Fuchs, Feaster, Leeka, & Rishel, 1992; Kemeny, 1994a, 1994b; McCain & Cella, 1995; Thomason, Jones,

McClure, & Brantley, 1996). Stress is hypothesized to negatively affect health in HIV-positive people in at least three ways (Chesney & Folkman, 1994). The first pathway concerns the effect that stress has on immunologic parameters such as CD4 and CD8 lymphocyte counts. Research has found that as stress increases, functional immune parameters change, contributing to disease progression and other negative health outcomes in HIV-positive people (Cole & Kemeny, 1997). Second, psychological distress may lead to changes in immune-modulating health behaviors (Leiberich et al., 1997; Stevens & Tighe Doerr, 1997; Thomason et al., 1996). For example, stress may induce insomnia or other inadequate sleeping patterns. Psychological distress may also enhance inappropriate coping responses, such as the consumption of drugs and alcohol, in attempts to avoid or manage stress. Therefore, health-promoting behaviors typically tend to decrease as stress increases. Third, psychological distress may interfere with adherence to prescribed treatment regimens (Chesney & Folkman, 1994; Singh et al., 1996). As stress increases, people may pay less attention to prescribed medical regimens. They may engage in alternative therapies exclusively to treat their HIV infection. In general, there are both

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direct and indirect negative effects of stress on health in HIV-positive people.

A preliminary body of research indicates that stress management practices may mediate stress and improve diverse health outcomes in HIV-positive people (Andrews, 1995; Antoni et al., 1991; Barroso, 1995; LaPerriere et al., 1997; Lutgendorf et al., 1997; McCain, Zeller, Cella, Urbanski, & Novak, 1996; Taylor, 1995). Stress management techniques may be categorized according to the component of the stress process they tend to affect, including techniques to reduce physiologic arousal elicited by stress and techniques to reduce the appraisal of stress or to enhance coping skills (Zakowski, Hall, & Baum, 1992). Thus, stress management is actually composed of diverse health-promoting practices that may work singly or in concert to produce stress reduction. For example, relaxation techniques such as guided imagery, meditation, and self-hypnosis have been used to manage expected and acute stressors and may also be beneficial in relieving the discomfort caused by symptom distress (Taylor, 1995; Zakowski et al., 1992). Coping and social support, as cognitive behavioral components of stress management, have served to lower anxiety and mood disturbance in HIV-positive individuals (Andrews, 1995; Barroso, 1995; Lutgendorf et al., 1998). Furthermore, behavioral approaches to stress management such as aerobic exercising have been found to mediate stress-induced immune depression in HIV-positive individuals (LaPerriere et al., 1997). Therefore, an important goal of nurses who wish to enhance the overall health of HIV-positive people should be to include the use of strategies to increase health-promoting stress management practices. However, though research demonstrates the health benefits of stress management practices for HIV-positive people, research targeted toward assisting HIV-positive people to actually adopt those practices is lacking.

The Transtheoretical Model of Behavior Change (TTM) (Prochaska & DiClemente, 1982) provides an integrative framework for understanding and facilitating behavior change. The TTM proposes that successful behavior change is most likely when the following indicators of change are present: a personal readiness to change one's behavior (stage of change) (Prochaska & DiClemente, 1982), a personal belief that one can carry out the proposed behavior change in various

settings or situations (situational confidence) (Di-Clemente, Prochaska, & Gibertini, 1985; Velicer, DiClemente, Rossi, & Prochaska, 1990), and a personal belief that the pros outweigh the cons of the proposed behavior change (decisional balance) (Velicer, DiClemente, Prochaska, & Brandenburg, 1985). Although many individuals may not be ready to adopt a new behavior, the TTM postulates that the behavior change process can still progress by helping those individuals in an early stage of change (precontemplation or contemplation) move ahead one stage at a time until they are ready to actually change their behavior. The TTM also postulates that specific processes of change facilitate movement through these stages of change (Prochaska, Velicer, DiClemente, & Fava, 1988).

To date, scientific inquiry using the TTM has focused on describing and facilitating behavior change in a variety of areas including the adoption of healthy behaviors such as mammography screening (Rakowski, Fulton, & Feldman, 1993), smoking cessation (Prochaska, DiClemente, Velicer, & Rossi, 1993), healthier dietary patterns (Rossi et al., 1993), exercise (Marcus, Rossi, Selby, Niaura, & Abrams, 1992), and safer sexual practices (e.g., condom use) for preventing transmission of HIV (Prochaska, Redding, Harlow, Rossi, & Velicer, 1994). However, no published studies were found that evaluated TTM concepts with people already infected with HIV. Furthermore, although preliminary TTM stress management research efforts have been initiated (Velicer, Prochaska, Fava, Norman, & Redding, 1998), information was needed to determine the suitability of the developed TTM stress management research measures for people at risk for, or infected with, HIV. Therefore, the purposes of this descriptive pilot study were to examine preliminary psychometrics of the research measures in women at risk for, or infected with, HIV, and to explore differences in self-efficacy and stress management by HIV serostatus (positive vs. negative) and by stage of change (precontemplation and contemplation vs. preparation, action, and maintenance).

This pilot study was limited to women at risk for, or infected with, HIV for several reasons. First, women now account for a greater proportion of AIDS cases then ever before (Centers for Disease Control and Prevention, 1998; Wortley & Fleming, 1997), and

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