Physical Fitness and Enhanced Psychological Health

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A great deal of attention has been given to the association between physical fitness and psychological health. The purpose of this view is to examine recent developments in the burgeoning exercise and psychological health literature and to explore avenues for future research. The current review focuses on research that has examined enhancement of psychological health and well-being among nonclinical populations since 1980. Four areas of psychological functioning are reviewed: (1) psychological well-being and mood, (2) personality and self-concept, (3) physiological stress responsivity and (4) cognition. Exercise appears to improve mood and psychological well-being as well as enhancing self-concept and self-esteem. Exercise appears to do little for personality functioning. Furthermore, mixed empirical support exists to suggest that exercise influences stress responsivity and cognitive functioning. However better research designs and procedures are still needed. Theories regarding the connection between exercise and psychological functioning as well as suggestions for future research are offered.

A great deal of attention has been given to the role of physical fitness and exercise in the enhancement of psychological health and well-being. Numerous articles have been published in both the professional and popular presses extolling the virtues of regular physical exercise. The exercise "boom" of the 1970s saw a substantial increase in the number of people engaged in aerobic exercise, such as running and aerobic dancing (Cooper, 1982). The exercise craze, which has continued into the 1990s, is a multibillion-dollar-a-year business. Health clubs, corporate fitness programs, video work-outs, and triathlons were the hallmarks of the 1980s.

Numerous businesses in the United States have implemented some type of program to promote physical fitness among their employees (Falkenberg, 1987). They range from company-paid memberships at private health and fitness clubs to complete work-site fitness facilities. These programs have been developed not only to improve and maintain employee health, but also to promote psychological well-being and productivity, and reduce absenteeism, insurance claims, and stress. Numerous articles have appeared in various business and management magazines concerning fitness as an avenue towards improving employee work behaviors (e.g., Edmondson, 1987; Gelb, 1985; Howard, 1987; Klock, 1985). The popular notion that not only will exercise improve appearance and health but also enhance mood, self-concept, and general

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psychological well-being, has perpetuated the exercise craze. People commonly report a reliance on exercise as a means of maintaining a wealth of physical and psychological benefits. The present article considers the nature of the scientific evidence for these claims.

CURRENT STATE OF THE PROFESSIONAL AND POPULAR LITERATURE

Well over 1,000 articles have been published in scientific journals on the psychological effects of exercise (Hughes, 1984). In preparation for this review, more than 200 published articles were located in the professional literature since 1980 alone. The number of articles and reports published in popular magazines on this topic is staggering. According to the *Reader's Guide to Periodical Literature*, over 150 articles were published on exercise in 1986 alone. The vast majority of popular magazine articles that focus on the psychological benefits of regular exercise highlight its tension and stress-reducing effects.

A number of articles reviewing the exercise and psychological health literature have also appeared during the past decade (Browman, 1981; Doan & Scherman, 1987; Folkins & Sime, 1981; Hales & Travis,1987; Hughes, 1984; Ledwidge, 1980; Martinsen, 1989; Mobily, 1982; Oberman, 1984; Phelps, 1987; Ransford, 1982; Rippe, Ward, Porcari, & Freedson, 1988; Sachs, 1982; Simons, Epstein, McGowan, & Kupfer, 1985; Sonstroem, 1984; Taylor, Sallis, & Neddle, 1985; Tomporowski & Ellis, 1986). Most of these reviews, however, have focused on narrow, very specific aspects of the exercise and psychological health connection or on specific populations. For example, some of these reviews have highlighted the role of exercise in treating anxiety and/or depressive disorders (e.g., Hales & Travis, 1987; Ledwidge, 1980; Martinsen, 1989; Ransford, 1982; Simons et al., 1985). Some have discussed physical health effects with only a brief overview of the effects of exercise on mental health (e.g., Oberman, 1984; Phelps, 1987; Rippe et al., 1988). Other reviews have focused only on aerobic exercise (e.g., Hughes, 1984; Sachs, 1982) while others have examined the role of exercise on only cognitive processes (e.g., Tomporowski & Ellis, 1986), self-esteem (Sonstroem, 1984), or personality (Doan & Scherman, 1987).

The last comprehensive and extensive review of the exercise and psychological health literature was the 1981 article by Folkins and Sime which appeared in the *American Psychologist.* This excellent review examined the literature on the effects of exercise on cognition, perception, work behavior, sleep, social behavior, affect, personality, and self-concept. These authors concluded that exercise leads to improved mood, self-concept, and work behavior as well as improved cognitive functioning during and immediately following exercise. The authors also concluded that except for self-concept, personality is not affected by improvements in physical fitness. Folkins and Sime (1981) also examined the extensive methodological problems in the exercise and psychological health literature. Only 15% of the studies they reviewed employed true experimental designs and the majority of these studies were conducted using clinical populations only. Of those experiments using normal subjects, almost