Predictors of exercise participation in female hospital nurses

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Aim. This paper presents a study to ascertain the relationship between exercise participation and selected personal factors, perceived benefits of and barriers to exercise, perceived self-efficacy, perceived social support, job demands and motivation. Factors that were the best predictors of exercise participation among Thai female hospital nurses were examined.
Background. Although current evidence demonstrates positive outcomes from participation in exercise, most individuals do not engage in regular exercise. Perceptions of benefits have been shown to facilitate adoption of exercise. If individuals do not perceive their health to be threatened, they may not see the need to exercise, even though they may believe that exercise improves health. Perceived barriers to exercise, including work, lack of social support, inaccessibility of exercise facilities, the cost of exercise, lack of energy and health reasons also have been shown to affect participation in exercise. Most studies have found that perceived self-efficacy and social support were statistically significant predictors of exercise participation, especially social support from family and friends.
Methods. A correlational cross-sectional study was conducted at a hospital located in Thailand. Social cognitive theory and the Health Promotion Model guided this study. Thai language translations of the questionnaire were distributed to all Thai female nurses. The data were collected in 2002.
Results. The response was 87% and resulted in 970 completed questionnaires. There was a statistically significant relationship between exercise participation and the set of selected personal factors, perceived benefits of and barriers to exercise, perceived self-efficacy, and perceived social support ($r^2 = 0.17$, $P < 0.0001$). The addition of job demands and its interactions did not contribute statistically significantly to the prediction of exercise participation. The addition of motivation contributed statistically significantly to the prediction of exercise participation, $t(947, 0.975) = 2.81$, $P < 0.01$ (two-tailed). Not all variables included in

the models were statistically significant independent predictors of exercise participation.

Conclusions. The results indicate that increased exercise participation is dependent on the nurses' perceptions of exercise, self-efficacy and social support as well as their motivation to participate in exercise. Occupational variables, such as occupational stress and work assignment, should be investigated in future studies, to examine their influence on nurses' participation in exercise.

Keywords: correlational cross-sectional design, empirical research report, exercise, female nurses, motivation, questionnaires, self-efficacy

Introduction

Lack of exercise among employees is a predisposing factor for obesity and a risk factor for numerous negative health conditions, particularly work-related back injury, which routinely occurs among nurses in healthcare settings (Goldman *et al.* 2000, Health and Safety Executive 2006). Less physically fit nurses may tire rapidly and become more susceptible to work-related injury when performing their tasks (Blue 1996).

Although the benefits of exercise are well-known, sedentary lifestyles and their consequences are a major concern worldwide (Leslie *et al.* 1999, Booth *et al.* 2000, Cheng *et al.* 2003). Recent studies conducted in Australia, Europe and Asia demonstrate the global need to investigate risk factors for back pain in nurses (Alexopoulos *et al.* 2003, Smedley *et al.* 2003, Smith *et al.* 2003, Smith & Leggat 2004, Yip 2004). In the United Kingdom (UK), the lifetime prevalence rate and 1-year period prevalence rate (in the previous 12 months) of back injuries among nurses have been reported as 60% and 45% respectively (Smedley *et al.* 1995). In addition, the prevalence of back pain symptoms in UK nurses over the 10-year-period, 1983–1993, has increased almost 40% compared with results obtained in a similar study in the previous decade (Leighton & Reilly 1995).

In Asia, studies have been reported on back pain among nurses in Hong Kong, Japan and Thailand, but more research is needed on predictors of back pain (Chavalitnitikul *et al.* 1996, Smith *et al.* 2003, Yip 2004). A study conducted in Thailand demonstrated that 89·2% of nurses in the sample had musculoskeletal problems, and that low back pain was their most frequent complaint (54·5%) (Chavalitnitikul *et al.* 1996). The researchers reported that approximately 43% of Thai nurses performed exercise occasionally, and 37% never performed exercise. Another study conducted in 2001 with staff at a Thai hospital found that approximately half of female personnel (51%) reported no exercise during the previous 3 months (Surawongsin 2002). Of this number, the majority of those were physicians or nurses.

To prevent the incidence of work-related injury and to reduce the resultant costs, exercise participation should be encouraged. Several factors influence engagement in exercise. Understanding factors related to exercise participation among hospital nurses would provide a basis for establishing programmes to promote exercise behaviour.

Literature review

Self-efficacy

Social cognitive theory (SCT; Bandura 1977a, 1977b) and the Health Promotion Model (HPM; Pender 1996) were used to guide this study. Social cognitive theory and the HPM provided a guide for explaining the biopsychosocial process that motivates an individual to engage in exercise behaviour. According to the SCT, change in behaviour is influenced by self-beliefs and outcome expectations. Self-efficacy, an important self-belief, is assigned a central role in analysing behaviour change (Bandura 1977a). Perceived self-efficacy refers to confidence in one's ability to perform successfully a specific behaviour in a variety of situations (Bandura 1986). Promoting behaviour change and maintenance of that behaviour derived from the SCT focuses on a function of expectations about one's ability to perform a certain behaviour (self-efficacy or efficacy expectation) and the expectation of the outcome resulting from performing that behaviour.

Studies have found that self-efficacy was positively related to physical activity participation (Piazza *et al.* 2001, Nies & Kershaw 2002). In Thailand, however, most studies investigating self-efficacy and exercise have focused on older adult populations or on chronically ill individuals and only a limited number of studies have examined the relationships between perceived self-efficacy and exercise participation in the Thai working population (V. Charoenkitkarn, unpublished information; S. Ngaosomkul, unpublished information).

Perceived self-efficacy is also a central construct in the HPM proposed by Pender (1996). The HPM, derived from