



Effects of exercise programs on depressive symptoms, quality of life, and self-esteem in older people: A systematic review of randomized controlled trials



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ABSTRACT

Objective: This study attempted to show evidence of exercise programs as intervention to decrease depressive symptoms and to improve quality of life and self-esteem in older people.

Design: Systematic review of randomized controlled trials.

Data sources: Electronic databases of KoreaMed, Korea Scientific and Technological Intelligence Center, Korean Society of Nursing Science, Korean Academy of Psychiatric Mental Health Nursing, Ovid-Medline and Embase were searched up to May 25th, 2012 for relevant articles.

Review: We searched studies of randomized controlled trials involving exercise programs administered to participants aged 65 years or over. Of 461 publications identified, 18 met the inclusion criteria for the meta-analysis. Quality assessment of the studies utilized Cochrane's Risk of Bias.

Results: Exercise therapy in older people was effective, as evidenced by a decrease in depressive symptoms [standardized mean difference (SMD) -0.36 ; 95% confidence interval (CI) -0.64 , -0.08], and improvements in quality of life (SMD 0.86 ; 95% CI 0.11 , 1.62) and self-esteem (SMD 0.49 ; 95% CI 0.09 , 0.88). The changes were significant statistically, with no heterogeneity.

Conclusions: Exercise programs in older people are effective in improving depressive symptoms, quality of life and self-esteem. Development and efficient use of tailored exercise programs for elderly people is a prudent strategy.

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1. Introduction

Advances of science and medicine resulted in an increase of life expectancy and consequent increase in the proportion of older people (Eyigor, Karapolat, Durmaz, Ibisoglu, and Cakir, 2009). This is one of global phenomenon, and in case of Korea, already became an aging society with 7.1% in the proportion of the elderly population in 2001 and, also, as Korea will be predicted to be an aged society by 2018 and a super aging society in 2026 (Statistics Korea, 2012). In case of UK, the projected rise in the proportion of population over 65 from 16% in 2001 to 21% in 2026 will increase this number (Brittle et al., 2009). An aging society is a problem all over the world.

These demographic changes of the social structure have increased the needs for elderly population-associated social interests. The life expectancy among the phenomenon of social interests became important because of the quality of life in the extended life time especially after retirement. According to the U.S. National Center for Health Statistics (1993), about 15 percent of human life stays unhealthy, and the causing factors are age-associated dysfunction, injury, disease and so on. What elderly people really want is spending the rest of their

lives to stay healthy, and one of the most important requirements is regular, active, and physical activity in order to maintain independent lives. The definition of health for the older individuals is, in general, the maintenance of functional independence until death.

The exercise may promote physical function which is a key factor for daily healthy life and prevent chronic disease and a fall for older people (Shon, 2010; Sattin, Easley, Wolf, Chen, & Kutner, 2005; Sjosten et al., 2008). Regular exercise increases the social contact, improves the physical and mental health, and plays the important role to diminish chronic disease risk factors and to maintain body functions for older people (Ko and Lee, 2012). It also prevents physical exhaustion by enhancing cardiovascular function, central nervous system, immune system, and the endocrine system. And in spiritual element, it reduces depressive symptoms and promotes self-efficacy (Chung, 2008). It is reported that there are effects on the immune system against disease, psychological well-being, self-respect, and sense of accomplishment (Tsang, Fung, Chan, Lee, and Chan, 2006).

The goal of regular daily exercise is to promote older people's stamina, to reduce depressive symptoms and anxiety from disease associated with aging by aging prevention, and to have positive thinking about their own aging process (Cho and Rho, 2009). However, there were some studies suggested that exercise had no direct effects on depressive symptoms (Brenes et al., 2007;

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Conradsson et al., 2010). Thus, studies of the effects of physical exercise on depressive symptoms, quality of life, and self-esteem have reported conflicting results, considering these discrepancies in the literature the need of the present study was to examine these researches critically and to validate practical application.

Recently, discussion for evidence based practice discussions are activated in healthcare setting, and the examination of practical application through the systematic review is suggested (Kim et al., 2011). Therefore, this study is conducted to suggest evidence for the exercise programs as nursing intervention to reduce depressive symptoms and to improve the quality of life and self-esteem from a systematic review based on the results of randomized controlled trials (RCTs).

2. Methods

2.1. Research design

This study was a systematic review and meta-analysis of RCTs examining the effects of exercise programs on the depressive symptoms, quality of life and self-esteem of elderly patients 65 years and greater (Lee, 2008).

2.2. Search strategy

2.2.1. Key question

- Participants: Elderly people are aged 65 years or over who did not have disorders of orientation and who were capable of independent living.

- Interventions: Any type of exercise program designed for the elderly defined as muscle strengthening training, walking, qigong physical exercise, tai chi and dance etc.
- Comparisons: Routine conservative treatment such as no treatment/placebo or any other type of non-exercising intervention including routine nursing care, counseling and health education (Pakkala et al., 2008).
- Outcomes: The main outcomes were measured depression symptom level, quality of life and self-esteem.
- Types of studies: RCTs were only included.

2.2.2. Data sources and study selection

The literature review utilized Internet-based electronic databases. Ovid-Medline and Embase, KoreaMed, and the National Discovery for Science Leaders (NDSL) were used as the main search database (Bidwell & Jensen, 2004). Additionally, the websites of the Korean Society of Nursing Science and the Korean Academy of Psychiatric Mental Health Nursing were searched to include all Korean academic journals that deal with associated fields. The data were retrieved in May 25th, 2013.

The keywords were derived from participants and interventions which were components of key question. The keywords for the search in Korean DBs (KoreaMed and NDSL) were selected in consideration of the search function of each DB. Mainly, 'depression' and 'exercise' were used integrated with 'the elderly with age over 65 years old' (Kim & Park, 2011). Studies search in KoreaMed were limited to randomized controlled trials. The search terms for the international databases were those used in the systematic review on the depression and exercise program by the Cochrane Collaboration (Dong et al.,

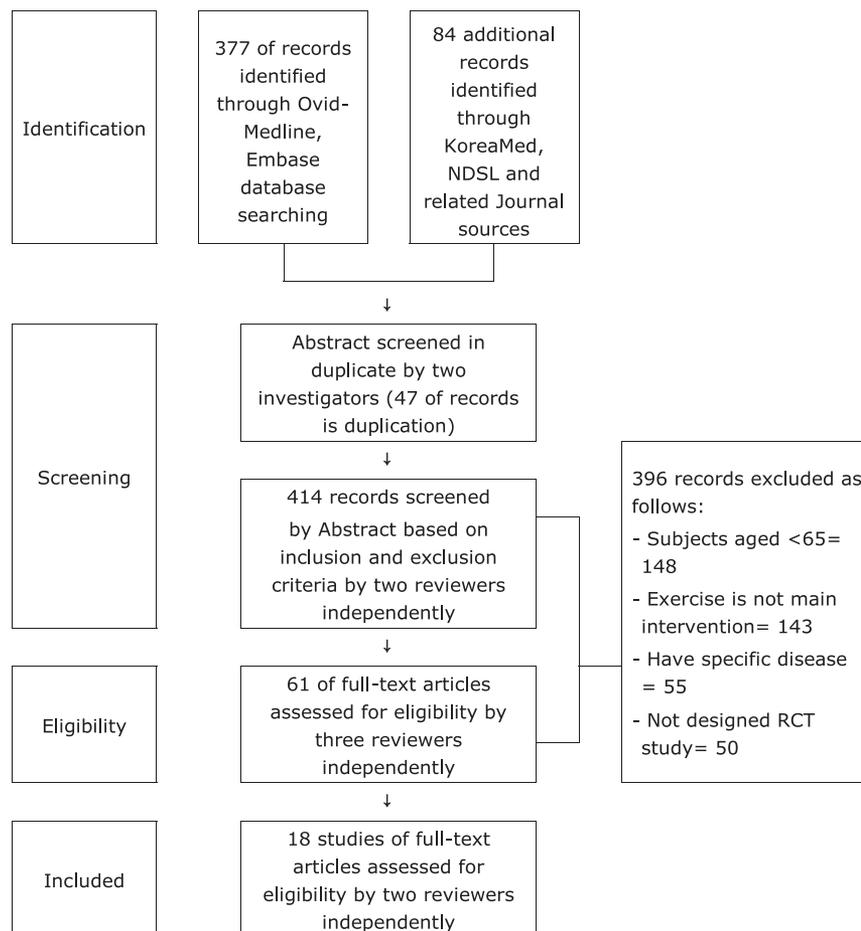


Fig. 1. Flow chart of study selection.

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