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Factors affecting self-care behavior in Koreans with COPD

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ABSTRACT

Background: Despite the importance of self-care in people with COPD, little is known about the effect of symptoms and symptom clusters on self-care behavior in people with exacerbated COPD. This study was designed to describe their level of self-care and to examine factors associated with self-care behavior, including symptoms and symptom clusters.

Methods: For this cross-sectional descriptive study, the researcher recruited Koreans with exacerbated COPD (N = 71) from three tertiary care hospitals. Self-care behavior was measured with Alberto Chronic Obstructive Pulmonary Disease Self-care Behavior Inventory. Descriptive and inferential statistics were used to analyze the data from structured interviews, questionnaires, and clinical measures.

Results: Mean score of self-care behavior was 119.30. Level of education, comorbidities, emergency department visits during past year, general health perception, and education about exacerbation and symptom management explained 43.9% of total variance in self-care behavior. When individual symptoms were added to the regression model, anxiety accounted for the largest change in total variance in self-care behavior. When a symptom cluster group variable was added to the regression model, change in total variance in self-care behavior was significantly greater than change in variance from individual symptoms.

Conclusion: Study results indicate that nurses should assess level of self-care in people with COPD and provide them with appropriate education to improve their self-care behavior. Further, it will remind nurses to heed symptom levels and other variables that affect self-care behavior. COPD patients with a lower level of multiple symptoms should be targeted for intervention to improve self-care.

1. Introduction

The prevalence of chronic obstructive pulmonary disease (COPD) has been estimated to be 11.7% worldwide (Adeloye et al., 2015). The Korean National Health and Nutrition Examination Survey (2007 to 2009) estimated the prevalence of COPD in Korea to be 12.9% (Hwang et al., 2011). Currently, COPD is the third leading cause of death worldwide (Lozano et al., 2012). In Korea, chronic lower respiratory diseases were the seventh leading cause of death in 2014, although mortality caused by COPD was not reported (Statistics Korea, 2015).

Despite advancements in treatment, COPD remains an irreversible disease, and its prognosis is poor. People with COPD will experience not only progressive dyspnea, physical limitation due to dyspnea, and exacerbations but also psychological and social problems (Disler et al., 2014; Miravitlles et al., 2014; Panagioti, Scott, Blakemore, & Coventry, 2014). Because COPD is progressive and long-term and its impact is psychological and social, patients must learn to care for themselves and take the responsibility to manage their disease every day (Kralik, Price, & Telford, 2010; Lorig & Holman, 2003). Connelly (1993) defined self-care to be “behaviors to promote health, prevent illness, and treat and cope with health problems” (p. 248). Effective self-care in managing COPD cannot be underestimated: Evidence has shown that self-care can improve quality of life and reduce the risk of respiratory-related and all-cause hospital admissions (Zwerink et al., 2014). Self-care behavior may be based on recommendations from nurses or behavior that patients have found helpful and should have been doing all along (Clari, Matarese, Ivziku, & De Marinis, 2017). Nurses play an essential role in assessing patients' current level of self-care and motivating and educating patients who perform poor self-care to intensify their efforts, which will eventually lead to better health-related outcomes (Baker & Fatoye, 2017; Clari et al., 2017). Despite the fact that people with COPD needs life-long self-care, few studies have examined self-care in people with exacerbated COPD. Such individuals may have poor self-care behavior. For this reason, nurses must understand how people with exacerbated COPD managed their disease. Examining how such people care for themselves may give nurses insight into their patients' current practices.

In the literature on COPD, age, health beliefs, knowledge about disease, self-efficacy, and family support may have positive or negative effects on self-care (Alberto & Joyner, 2008; Kara Kaşikçi & Alberto,

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2007; Wang, Sung, Yang, Chiang, & Perng, 2012). However, few studies have examined symptoms as a factor associated with self-care in people with COPD. The relationship between symptoms and self-care behavior has been examined in people with other chronic diseases (Kessing, Denollet, Widdershoven, & Kupper, 2016; Mut-Vitcu, Timar, Timar, Oancea, & Citu, 2016). In the literature on heart failure, the relationship between psychological symptoms (i.e., anxiety and depression) and self-care was found to be inconsistent (Kessing et al., 2016). However, the negative effect of depression on self-care has been reported in people with diabetes (Mut-Vitcu et al., 2016). Symptoms are well-known to have a great impact on people with COPD in various ways (Ekici, Bulcun, Karakoc, Senturk, & Ekici, 2015; Schembri et al., 2009). They may well affect self-care in people with COPD as they do in people with other chronic diseases. To develop effective interventions to facilitate self-care in people with COPD, one must understand how those with symptoms care for themselves. For this reason, this study examined self-care behavior and associated factors in people with exacerbated COPD, including symptoms.

1.1. Theoretical framework

Two theories guided this study of self-care behaviors and factors affecting self-care in people with COPD: the model of self-care in chronic illness (Connelly, 1993) and the theory of unpleasant symptoms (Lenz, Pugh, Milligan, Gift, & Suppe, 1997). The former describes factors that might affect self-care behavior in chronically ill patients (Connelly, 1987, 1993). According to this theoretical framework, self-care behavior is influenced by a series of predisposing variables (i.e., self-concept, health motivation, perception of seriousness, vulnerability, and efficacy) and enabling variables (i.e., patients' characteristics, psychological status, regimen features, social support, and system characteristics; Connelly, 1993). Self-care behavior is not viewed as a self-care outcome. Rather, several factors interact with and affect each other. The theory of unpleasant symptoms (Lenz et al., 1997) describes the experience of patient symptoms with the following components: influencing factors and performance. Influencing factors include physiological (i.e., pathological conditions), psychological (i.e., anxiety or depression), and situational factors (i.e., aspects of social and physical environment). Performance, which is viewed as an outcome, has a reciprocal relationship with symptom experience. This theory emphasizes coexisting symptoms and their multiplicative rather than additive effect on patient performance (Lenz et al., 1997). This study examined predisposing and enabling factors, including a single symptom and multiple symptoms, to self-care behavior in people with exacerbated COPD who exhibited poor self-care behavior. General health perception and self-efficacy were examined as predisposing factors; patient characteristics (e.g., spirometry, dyspnea, and physical functioning), anxiety, depression, and social support were examined as enabling factors for self-care behavior in this study.

1.2. Literature review

Self-care behavior in people with COPD has been widely reported in the literature. People with stable COPD in support groups have reported high levels of self-care (Alberto & Joyner, 2008). Although Chinese people with stable COPD were reported to practice adequate self-care behavior with regard to compliance with medication and smoking cessation, they exhibited inadequate self-care behavior in such areas as participation in recreational activities, involvement in activities other than medical management, or practice on breathing techniques (Xiaolian et al., 2002). Seventy-three percent of Turkish people with stable COPD also exhibited adequate self-care behavior in most areas except the lack of an emergency plan and failure to attend pulmonary rehabilitation or a support group (Kara Kaşikçi & Alberto, 2007). In their study that used scenario-based interviews, Dowson, Town, Frampton, and Mulder (2004) found that people with stable COPD regularly focused on medication compliance and exercising; when their symptoms got worse, they telephoned their physician, visited his or her office, or went to the hospital. Overall, however, little is known about self-care behavior in people with exacerbated COPD.

Few studies have explored the factors related to self-care behavior in people with COPD.

Older age, higher levels of health beliefs, and disease-related knowledge have been positively associated with self-care behavior (Wang et al., 2012). A significant positive relationship was found between self-efficacy and self-care behavior in Turkish (Kara Kaşikçi & Alberto, 2007) and Taiwanese people with COPD (Wang et al., 2012). In addition, hope and optimism were found to have a protective effect on self-care behavior in community-residing people with COPD (Alberto & Joyner, 2008). Family support has also been positively associated with self-care behavior in Turkish (Kara Kaşikçi & Alberto, 2007) and Chinese people with stable COPD (Xiaolian et al., 2002). In contrast, a study of Taiwanese people with COPD (Wang et al., 2012) found that patients' self-care behavior was negatively correlated with family caregivers' behavior. With regard to psychological factors, self-care behavior in people with exacerbated COPD has been found to be negatively influenced by depression and previous alcohol dependency (Dowson et al., 2004). Overall, few studies have examined the relationship of symptoms to self-care behavior in people with COPD.

Dyspnea is reported to be the principal disabling symptom in people with COPD, although anxiety and depression frequently coexist (Kunik et al., 2005; Negewo, McDonald, & Gibson, 2015; Schnell et al., 2012). The prevalence of dyspnea, anxiety, and depression in people with COPD was 90.8%, 10–55%, and 24.6%, respectively (Matte et al., 2016; Park & Larson, 2016; Willgoss & Yohannes, 2013). The significant effects of these symptoms on quality of life, health care utilization, and mortality in people with COPD have been reported in the literature (Blakemore et al., 2014; Park & Larson, 2014). However, their effect on self-care behavior in people with COPD has not been explored in depth in the past.

The relationship between symptoms and self-care behavior has been examined in people with other chronic diseases (Gonzalez et al., 2008; Kessing et al., 2016; Riegel et al., 2009). The literature on heart failure reveals that anxiety and depression have a decidedly negative effect on self-care (Kessing et al., 2016; Riegel et al., 2009). Depression was significantly associated with nonadherence to diabetes treatment regimens in 47 independent samples (Gonzalez et al., 2008) and poor self-care activities in people with type 2 diabetes (Mut-Vitcu et al., 2016). Anxiety is thought to impair cognition, energy, and motivation but to act differently on self-care, depending on the type of anxiety (DiMatteo, Lepper, & Croghan, 2000). Some types of anxiety may lead to vigilance and thus be treatment compliant, others may not (Bauer et al., 2012; DiMatteo et al., 2000). Depression too is known to impair cognition, concentration, energy, and motivation (Bauer et al., 2012; DiMatteo et al., 2000). As a result, it may interfere with the ability to learn, notice symptoms, and make decisions on how to deal with worsening symptoms (Bauer et al., 2012; Riegel et al., 2009). Examining how anxiety and depression affect self-care in people with COPD is imperative, given the negative impact these symptoms have on people with other chronic diseases. Of the various symptoms experienced by people with COPD, this study examined only three (dyspnea, anxiety, and depression) because of their high prevalence.

In addition to single symptoms, symptom clusters, defined as two or more related symptoms that occur together (Kim, McGuire, Tulman, & Barsevick, 2005), were examined. Symptoms rarely occur in isolation; people with COPD experience multiple symptoms (Park & Larson, 2016). Symptom clusters have a more significant effect on social functioning and mortality than single symptoms, but little is known about the relationship between symptoms, as a cluster, and self-care in people with COPD (Park & Larson, 2014; Park, Meldrum, & Larson, 2013). Clearly, interventions that improve groups