Research Article

Confrontation as a Mediator between Sense of Coherence and Self-management Behaviors among Elderly Patients with Coronary Heart Disease in North China

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SUMMARY

Purpose: Self-management is critical to improve health outcomes of elderly patients with coronary heart disease (CHD). Sense of coherence (SOC) is found to be linked with self-management behaviors. However, their deeper relationship is not clear. The purposes of this study were to investigate the association between SOC and self-management behaviors among elderly CHD patients in China, and whether confrontation mediates this association.
Methods: A cross-sectional design was used. A total of 275 elderly patients with CHD recruited from the cardiology department in a general hospital in North China were surveyed from October 2015 to April 2016. SOC, confrontation, and self-management behaviors were measured using the Chinese version of the SOC scale, subscale of Medical Coping Modes Questionnaire—Confrontation, and the CHD self-management scale, respectively. Correlation analysis and path analysis were conducted to analyze the data.
Results: The mean (±standard deviation) scores of SOC, confrontation, and self-management behaviors were 62.20 (±9.61), 19.55 (±3.15), and 76.17 (±10.63), respectively. Correlation analysis showed that SOC, confrontation, and self-management behaviors were significantly correlated with each other. Path analysis indicated that SOC exerted a direct effect on self-management behaviors, whereas could affect self-management indirectly via confrontation. Bootstrap test result showed that confrontation played a mediating role ($\beta = .20$, $p < .001$) in the relationship between SOC and self-management behaviors.
Conclusion: SOC was related to self-management behaviors, whereas confrontation mediated the effect of SOC on self-management behaviors. In practice, the role of confrontation coping should be valued when developing strategies to strengthen SOC and to improve self-management practice among elderly CHD patients.

Introduction

Coronary heart disease (CHD) is one of the leading causes of death worldwide, and it has negative impacts on patients' quality of life, well-being, and functioning. The World Health Organization report shows that in 2012, about 7.4 million people died of CHD in the world [1]. In China, there was an increase in CHD mortality from 2002 to 2013. In 2013, the mortality of CHD was 100.86 of 100,000 in urban areas and 98.68 of 100,000 in rural areas in China [2]. Older adults are at increasing risk of CHD, and age is one of the predictors of the risk of mortality among CHD patients [3]. Hence, the health of elderly CHD patients warrants attention.

Unhealthy lifestyle behaviors (e.g., physical inactivity, smoking, excessive alcohol consumption, and inadequate intake of fruits and vegetables) were risk factors of CHD mortality [4]. Effective self-management behaviors can change the unhealthy lifestyle of CHD patients [5]. Therefore, identifying the associated factors of self-management behaviors among elderly CHD patients and investigating into the relationships among the factors are important for health professionals practice.

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Self-management refers to an individual's abilities to manage the symptoms, treatment, physical and psychosocial consequences of chronic diseases and make unhealthy lifestyle changes [6]. Self-management behaviors can reduce symptom aggravation and the recurrent rate of cardiac events, and improve the quality of life for patients [5]. For CHD patients, self-management involves a range of behaviors including daily life management, disease medical management, and emotion management [7]. These behaviors need the patients to insist on performing them for a long time, whereas many CHD patients could not keep self-management behaviors well [8].

Self-management behaviors among CHD patients are affected by various factors, such as perceived control of health, family support, self-efficacy [8], and sense of coherence (SOC) [9]. Research has showed that SOC was associated with improved self-care, health, and quality of life among older people [10]. In Antonovsky's Salutogenic Model (SM), SOC is identified as an important determinant for maintaining health and for the movement toward healthy aging [11]. In the SM, Antonovsky states that SOC leads one to engage in health promoting behaviors. Studies have demonstrated that SOC could predict health-related behaviors among CHD patients [9] and was directly related to self-management behaviors among older patients with chronic diseases [12]. Therefore, the SM and empirical studies indicate a relationship between SOC and self-management behaviors. However, the mechanism through which SOC affects self-management behaviors among CHD patients is not well understood.

In the SM, SOC is a core construct in understanding stress coping and health outcomes [11]. SOC represents individuals' salutogenic potential and abilities to use resilience resources to help them cope with stressors. SOC is defined as a person's orientation to life and an enduring tendency to see the world as comprehensive, manageable, and meaningful [13]. A well-developed SOC enhances health through reducing exposure of the body to repeatedly stressful emotions and maintaining physiological homeostasis [11]. Furthermore, SM focuses on how individuals effectively manage and cope with adverse situations to maintain their health by using generalized resistance resources (GRRs) [14]. GRRs are defined as the characteristics of an individual, a group, or the environment that can promote effective tension management. In particular, GRRs include a variety of resources ranging from material to virtual spiritual dimensions of the mind, processes, and psychological mechanisms, such as materials, knowledge/intelligence, social support, and coping strategy [15]. Antonovsky proposes that SOC leads individuals to search their repertoire for GRRs that are appropriate for the specific situation [15]. In other words, the level of SOC can contribute to individuals mobilizing and activating GRRs to confront problems and tension. Coping strategies is one of the GRRs and thus may be correlated with SOC.

Previous research has consistently proved the correlation between SOC and coping strategies. For instance, patients with a stronger SOC adopted more positive coping styles [16]. Positive coping styles were found to directly influence health behaviors, such as promoting patients with diabetes to implement self-management behaviors [17]. Furthermore, coping have been found to function as mediators of the relationship between SOC and stress reactions among adolescents [18]. In particular, positive coping style (solution-focused coping) played a significant mediating role between hope level and health outcomes among Chinese empty-nest elderly in urban community [19]. In medical coping modes, confrontation is a major positive style of cognitive-behavioral, illness-related coping to manage diseases, with characteristics of taking direct action [20]. Confrontation coping style was revealed to be a mediator in the relationship between psychological factors (e.g., self-esteem and internal health locus of control) and health-promoting behaviors in Chinese patients with CHD [21]. Following these studies and drawing on the propositions of SM, we hypothesized that confrontation could be a mediating factor in the relationship between SOC and self-management behaviors among elderly CHD patients.

In brief, SOC and positive coping styles have impacts on self-management behaviors [9,17]. However, their combined effect on self-management behaviors has not been reported. Attention to the role of confrontation as a positive coping style may facilitate a better understanding of the relationship between SOC and self-management behaviors among elderly patients with CHD. Using SM as a theoretical framework and based on literature review, the present study aimed to explore the association among SOC, confrontation, and self-management behaviors among elderly CHD patients in China. Another purpose of the study was to identify whether confrontation has mediating effects on the relationship between SOC and self-management behaviors of CHD patients.

Methods

Study design and sample

A cross-sectional design was used in this study. Participants were recruited from the cardiology department of a general hospital in North China from October 2015 to April 2016. The inclusion criteria of participants were: (1) diagnosed with CHD by coronary angiography; (2) aged 60 years or over; (3) having normal cognitive function; and (4) willing to participate. Patients were deemed ineligible if they had other severe primary diseases (e.g., cardiopulmonary insufficiency, arrhythmia, liver and kidney system disease), or were in a critical condition needing for complete bed rest. The sample size was estimated based on the rule of thumb for structural equation modeling, i.e., at least 10 to 15 cases per measured variable or empirical indicator were required [22]. There were 20 empirical indicators, resulting in a required sample size of 200 to 300 cases for this study. In total, 280 elderly CHD inpatients participated in this study, whereas five inpatients were excluded because of missing data. Thus, the sample consisted of 275 patients.

Questionnaires and measurements

The patients completed a demographic and clinical data sheet, including age, gender, marital status, education level, living arrangement, and duration of CHD, together with other three scales via face-to-face interviews by the researchers. The scales were used to measure SOC, confrontation, and self-management behaviors, respectively, among elderly patients with CHD. Permission of using the three instruments was obtained from the authors through contacting them by email before investigation in this study.

Sense of coherence

The 13-items SOC scale developed by Antonovsky [13] can be used to evaluate individuals' SOC. The scale consists of 13 items and includes three dimensions of comprehensibility, manageability, and meaningfulness. Each item was rated on a seven-point Likert scale from 1 (never) to 7 (always). The total score ranges from 13 to 91, with higher scores suggesting higher levels of SOC. A score of 13 to 63 points indicates a low level of SOC, 64 to 79 indicating a moderate SOC level, and 80 to 91 indicating a high SOC level. The original English scale was translated into Chinese, modified by Chinese scholars, and was named as C-SOC [23]. The C-SOC has been tested to be of good validity and reliability [23], and was applied to assess SOC of elderly CHD patients. The Cronbach α coefficient of C-SOC for the present study was .89.