



# Effects of a nurse-led transitional care program on clinical outcomes, health-related knowledge, physical and mental health status among Chinese patients with coronary artery disease: A randomized controlled trial



Pan Zhang<sup>a,1</sup>, Yu-ding Hu<sup>a,1</sup>, Feng-Mei Xing<sup>a,\*</sup>, Chang-Zai Li<sup>b</sup>, Wang-Feng Lan<sup>a,b</sup>, Xiao-Li Zhang<sup>a,b</sup>

<sup>a</sup> College of Nursing and Rehabilitation, North China University of Science and Technology, Tangshan, Hebei, China

<sup>b</sup> Department of Oncological Surgery, North China University of Science and Technology Affiliated Hospital, Tangshan, Hebei, China

## ARTICLE INFO

### Keywords:

Clinical outcome  
Coronary artery disease  
Knowledge  
Mental health status  
Physical health status  
Randomized control trial  
Transitional care

## ABSTRACT

**Background:** Coronary artery disease is a major cause of morbidity and mortality among adults worldwide, including China. After a hospital stay, transitional care could help to ensure improved patient care and outcomes, and reduce Medicare costs. Nevertheless, the results of the existing transitional care are not always satisfactory and our knowledge of how to perform effective transitional care for patients with coronary artery disease is limited in mainland China.

**Objectives:** To examine the effectiveness of a nurse-led transitional care program on clinical outcomes, health-related knowledge, and physical and mental health status among Chinese patients with coronary artery disease.

**Design:** Randomized controlled trial.

**Methods:** The Omaha system and Pender's health promoting model were employed in planning and implementing this nurse-led transitional care program. The sample was comprised of 199 Chinese patients with coronary artery disease. The experimental group ( $n = 100$ ) received nurse-led transitional care intervention in addition to routine care. The nurse-led transitional care intervention included a structured assessment and health education, followed by 7 months of individual teaching and coaching (home visits, telephone follow-up and group activity). The control group ( $n = 99$ ) received a comparable length routine care and follow-up contacts. Evaluations were conducted at baseline and completion of the interventions using the perceived knowledge scale for coronary heart disease, the medical outcomes study 36-item short-form health survey and clinical measures (blood pressure, blood glucose, lipids, body mass index). Data were collected between March and October 2014.

**Results:** Compared with the control group, participants in the experimental group showed significant better clinical outcomes (systolic blood pressure,  $t = 5.762$ ,  $P = 0.000$ ; diastolic blood pressure,  $t = 4.250$ ,  $P = 0.000$ ; fasting blood glucose,  $t = 2.249$ ,  $P = 0.027$ ; total cholesterol,  $t = 4.362$ ,  $P = 0.000$ ; triglyceride,  $t = 3.147$ ,  $P = 0.002$ ; low density lipoprotein cholesterol,  $t = 2.399$ ,  $P = 0.018$ ; and body mass index,  $t = 3.166$ ,  $P = 0.002$ ), higher knowledge scores for coronary artery disease (total knowledge score,  $t = -7.099$ ,  $P = 0.000$ ), better physical health status ( $t = -2.503$ ,  $P = 0.014$ ) and mental health status ( $t = -2.950$ ,  $P = 0.004$ ).

**Conclusions:** This study provides evidence for the value of a nurse-led transitional care program using both the Omaha system and Pender's health promoting model as its theoretical framework. The structured interventions in this nurse-led transitional care program facilitate the use of this program in other settings.

### What is already known about the topic?

- The risk for coronary artery disease is increasing worldwide and is associated with high health care utilization and disease burden.
- Appropriate disease management and transitional care programs improve health outcomes among patients with coronary artery

disease.

- Decreased hospital stay and the increasing complexity of post-discharge care emphasize the importance of transitional care models.

### What this paper adds

\* Corresponding author at: College of Nursing and Rehabilitation, North China University of Science and Technology, 57 Jianshe South Road, Tangshan 063000, Hebei, China.

E-mail address: [fengmeixing@ncst.edu.cn](mailto:fengmeixing@ncst.edu.cn) (F.-M. Xing).

<sup>1</sup> Both authors contributed equally to this study.

- This study describes the testing of a nurse-led transitional care program using the theoretical underpinnings of the Omaha system and Pender's health promoting model.
- Chinese patients with coronary artery disease receiving the nurse-led transitional care program demonstrated significant improvements in clinical outcomes, knowledge level, physical and mental health status compared to those in the control group.
- Findings of this randomized controlled trial support the feasibility and positive outcomes of implementing a nurse-led transitional care intervention in mainland China.

## 1. Introduction

The global burden of disease has experienced a dramatic epidemiological transition, shifting from communicable, maternal, and nutritional causes to noncommunicable diseases, including cardiovascular diseases (Fuster, 2014). By 2020, cardiovascular diseases will become the leading cause of death and disability worldwide (Fuster, 2014). The World Health Organization (WHO) estimates projected annual cardiovascular events are predicted to increase by 73% between 2010 and 2030 in China (WHO, 2016). Among cardiovascular diseases, coronary artery disease (CAD) is a major cause of morbidity and mortality among adults in China and brings a heavy burden for the patients and their families (Zhang et al., 2008).

Previous studies have shown that controlling risk factors, improving knowledge on CAD and promoting physical and mental health behaviors may contribute to the cardiovascular health (Lloyd-Jones et al., 2010; Weibel et al., 2016; Yan et al., 2012). However, the fact is that patients with CAD are often lack of knowledge on CAD, how to control its risk factors and how to maintain physical and mental health status at discharge (Baberg et al., 2005; Scrutinio, 2010; Wartak et al., 2011). One possible reason is that the ever-shorter hospital stays and increasing complexity of post-discharge care make the patients and their families confront lots of challenges during the transition process from hospital to home or other care settings (Donald et al., 2015).

Appropriate disease management and transitional care programs involving discharge plans and follow-ups are important in reducing health care costs and improving CAD patients' health outcomes (Wong et al., 2015; Zhao and Wong, 2009). Transitional care is defined as a broad range of time-limited actions that are designed to ensure at-risk populations receive continuous services, avoid preventable poor outcomes and promote the safe and timely transfer from one type of setting to another (Naylor et al., 2011). Transitional care ensures timely patient follow-up, provides patient or caregiver education and support, and coordinates health professionals involved in the transition (Deniger et al., 2015; Feltner et al., 2014). The traditional cardiac transitional care programs usually adopt at least one of the following strategies: home visits, telephone follow-up, health education and group activity (Prvu Bettger et al., 2012; Vedel and Khanassov, 2015). Recent studies undertaken with Western population have shown that traditional cardiac transitions programs are effective in reducing the length of stay in hospital, increasing the quality of life and satisfaction of discharged patients and decreasing the healthcare costs (Hall et al., 2012; Stamp et al., 2014).

Although successful in Western populations, traditional cardiac transitions programs are yet to be widely used in mainland China. The research on transitional care in China has been performed in relatively developed provinces and most of them tend to be qualitative or cross-sectional studies conducted in mainland China (Shi et al., 2010; Ye et al., 2016; Zhang et al., 2014). In addition, despite the benefits mentioned above, the results of transitional care are not always satisfactory. In an integrated literature review by Bahr et al. (2014), the evidence is inconclusive as to the benefits of transitional care in decreasing readmission, emergency department use, scheduled and unscheduled follow-up, patient satisfaction, and physical and emotional well-being (Bahr et al., 2014). In another review paper, although Prvu

Bettger et al. (2012) pointed out that hospital-initiated transitional care can improve some outcomes in patients with myocardial infarction, the conclusion was made based on low-quality studies (Prvu Bettger et al., 2012). Besides, the ever-shorter hospital stays and increasing complexity of post-discharge care make the patients and their families confront lots of challenges when transferring to different care settings because of the need to adjust their lifestyle; acquire new supports, additional services, and an expanded care team (Donald et al., 2015; Prvu Bettger et al., 2012). Thus, it is critical to formulate and implement an effective transitional care plan in a complex care setting for CAD patients on the basis of a high quality randomized controlled trial in mainland China.

Inspired by previous studies on the management of patients with chronic diseases, a successful care model should be patient-centered, focus on the motivation of patients' initiative and include the following key ingredients, such as comprehensive assessment of patient's needs, patient-centered processes, perceived self-efficacy, and interpersonal influences (such as social support), and so on (Chow and Wong, 2014; Jackson et al., 2014). A review paper by Albert (2016) also indicated that engagement in self-care and active role in health care may minimize exacerbation and rehospitalization (Albert, 2016). However, our review of previous studies found that transitional care program had a tendency to put health professionals in a dominant position over patients but did not pay sufficient attention to patients' initiatives (Ursan et al., 2016; White et al., 2015). Thus such program's efficacy may have been compromised. This study aimed to correct this situation by performing a nurse-led transitional care program using the Omaha system (Omaha System, 2016) and Pender's health promoting model as the theoretical underpinnings (Pender et al., 2011).

Comparing with routine care, we have chosen the Omaha system and Pender's health promoting model as the theoretical frameworks of the current nurse-led transitional care program for the following reasons. First, the Omaha system can provide comprehensive patient-centered assessments and interventions which are needed by a successful nursing management plan illustrated by the study of Chow and Wong (2014). Second, the Pender's health promoting model could identify the various barriers to quality care from the patient's perspective and motivate patients' initiative which are also proved to be important in an effective nursing care plan (Jackson et al., 2014).

### 1.1. Aim and hypotheses of the study

The aim of this randomized controlled trial was to examine the effectiveness of a nurse-led transitional care program on clinical outcomes, health-related knowledge, and physical and mental health status among patients with coronary artery disease in mainland China.

The research questions and hypotheses were as follows:

Question 1: Does the study group achieve better clinical outcomes than the control group?

Hypothesis 1: The CAD patients in the nurse-led transitional care program will have significantly better clinical outcomes than those with usual care only.

Question 2: Does the study group demonstrate higher knowledge level related to CAD than the control group?

Hypothesis 2: The CAD patients in the nurse-led transitional care program will demonstrate higher knowledge level related to CAD than those with usual care only.

Question 3: Does the study group have better physical and mental health status than the control group?

Hypothesis 3: The CAD patients in the nurse-led transitional care program will have better physical and mental health status than those with usual care only.

متن کامل مقاله

دریافت فوری ←

**ISI**Articles

مرجع مقالات تخصصی ایران

- ✓ امکان دانلود نسخه تمام متن مقالات انگلیسی
- ✓ امکان دانلود نسخه ترجمه شده مقالات
- ✓ پذیرش سفارش ترجمه تخصصی
- ✓ امکان جستجو در آرشیو جامعی از صدها موضوع و هزاران مقاله
- ✓ امکان دانلود رایگان ۲ صفحه اول هر مقاله
- ✓ امکان پرداخت اینترنتی با کلیه کارت های عضو شتاب
- ✓ دانلود فوری مقاله پس از پرداخت آنلاین
- ✓ پشتیبانی کامل خرید با بهره مندی از سیستم هوشمند رهگیری سفارشات