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Nurse-led cancer care: A scope review of the past years (2003-2016)

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1. Introduction

Nursing practice has been expanded greatly with time passing by. One innovative form of nursing practice is nurse-led care. The term "nurse-led care/service" has been introduced in nursing discipline for years as early as in 1960s [1]. Later, several nurse-led services were reported in 1980s and 1990s [2–7]. The common characteristics in these units were that the nurses provided additional things to improve patients' care, and the standard of practice was extremely high [8].

The accelerating development of nurse-led care was triggered by the health care system reform in United Kingdom (UK) around 2000. In 1999, the UK government document 'Making a difference' was published [9], under the pressure of redesigning services to reduce waiting time and medical cost and to meet shortfalls in junior medical staffing [10]. Since then, nurse-led care has been reported in increasing studies [11].

The nurse-led care in cancer community has been developed with the cancer care reform as well. Under the pressure of increasing cancer patients, treatment delivery has changed a lot. Early discharge after surgery and outpatient-based or home-based adjuvant treatment have been widely used [12]. Under such health care reform, nurse-led care is one possible solution to improve the quality of cancer care, which has been highly recommended [13]. A previous review suggests that the nurse-led cancer care is effective, safe and acceptable by patients with higher satisfaction, compared with conventional care model [12].

Although encouraging outcomes of nurse-led care were reported both in cancer area and other areas, the researchers are interested to know how the encouraging outcomes have achieved. What are the effective components of nurse-led care? Corner (2003) indicates that the promising outcomes are not automatically achieved in all the studies of nurse-led care [12]. The structure and process of nurse-led care are highly associated with outcomes [14]. More studies are required to understand the complex and dynamic effects of nurse-led care [12].

It has been more than ten years since Corner's review on nurse-led cancer care [12]. It is time to examine the development of nurse-led cancer care worldwide. Therefore, this review aimed to understand nurse-led cancer care based on literature published during the past years and to explore important factors in structure and process which lead to positive outcomes of nurse-led cancer care. Specifically, the objectives of this review were: (i) to identify the practice scope of nurse-led cancer care; (ii) to examine the structure of nurse-led cancer care programs; (iii) to examine the process of nurse-led cancer care programs; (iv) to explore the outcomes adopted and achieved in nurse-led cancer care programs.

2. Methods

2.1. Definitions and types of nurse-led care

Clear definitions and terms are essential to understand what are discussed in this review. Despite the increasing research on nurse-led care, there is no clear and consistent definition of nurse-led care [15]. Corner (2000) suggests that nurse-led care should include two types of care model: delegation model and comprehensive practice model [12]. In the former model, nurses are delegated to accomplish specific tasks which used to be done by medical staffs. This kind of care is usually well defined and consists of technical tasks. In the latter model, more nursing components are involved during care delivery; nurses take responsibility for an area of care and have considerable autonomy in making clinical decision [12]. The latter model seems to be accepted by more scholars. McMahon (1998) points that nurse-led care should be those nursing practice which is the leading therapy for patients, not simply replace doctors [8].

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Richardson and Cunliffe (2003) propose that the important components of nurse-led care are independent practice and scope for autonomous decision making [11].

In addition to the abstract definition of nurse-led care, some researchers define the term in a practical approach. Hinds (2008) summarizes that the nurse-led care is characterized by evidence-based and patient-centered care, which is focused on patient-centered outcomes and delivered by advanced practice nurses [16]. Wong and Chung (2006) define the nurse-led care from three aspects: structure, process, and outcome [14]. Richardson and Cunliffe (2003) summarize that the key activities of nurse-led care include: (i) direct referral mechanism; (ii) assessment and technical skills; (iii) freedom to initiate diagnostic tests; (iv) prescription (to protocol) of medications; (v) increased autonomy and scope for decision making; (vi) discharge [11]. Based on the opinions proposed by previous scholars, the comprehensive practice model of nurse-led care was reviewed in this article from three aspects: structure, process, and outcomes.

2.2. Literature search method

Articles of nurse-led care in cancer community which were published between January 2003 and December 2016 were searched. A series of literature search was conducted on seven English electronic databases: British Nursing Index (BNI), Cumulative Index to Nursing and Allied Health literature (CHINAL), Medline, Ovid, PsycInfo, Proquest Dissertation, and Scopus. The following combination of key words was used: (oncolog* OR cancer) AND (care OR service OR nursing) AND ("nurse-led" OR "nurse led"). The year 2003 as a starting point was because the earliest review on nurse-led cancer care [12] was published and no comprehensive review on this topic has been published afterwards.

The inclusion criteria for articles were: (i) being published in English language; (ii) being research article, case report, pilot study, or audit; (iii) fitting the comprehensive practice model. The following articles were excluded: (i) those in which nurses' work was only a delegation of medical role; (ii) commentary, editorial, or poster abstract; (iii) nurse-delivered interventions for single symptoms/problems; (iv) nurse-led follow-up care for post-treatment cancer survivors as an alternative service of conventional follow-up service. The articles of nurse-led follow-up care were excluded because two comprehensive review articles were published on this topic recently [17,18]. The search identified potentially eligible articles by screening titles and abstracts (Fig. 1). After reading full texts, 22 nurse-led cancer care programs (i.e. 26 articles[1]) were included in the review finally.

3. Results

3.1. Service characteristics of nurse-led cancer care programs

Totally twenty-two nurse-led cancer care programs were found (Table 1). The majority of the programs were developed in western countries, especially in Europe, including eight in UK [19–26], two in Sweden [27,28], one in Ireland [29], and one in the Netherland [30]. Four care programs were found in Australia [31–34]. Three were found in Canada [35–37]. Two care programs were developed in the United States [38,39]. One care program was established in Hong Kong [40].

Patients in these reviewed care programs were with several common cancer diagnoses. Seven care programs served patients with single diagnosis, including breast cancer [24,35], prostate cancer [19,20,34], colorectal cancer [21,22,32], and lung cancer [26]. Four care programs were designed for patients with cancers in the same specialty, including two programs for hematological malignancies [31,36], two programs for head and neck cancer ([25,30], and one program for gynecological cancers [39]. The diagnoses of the cancer patients in eight programs were heterogeneous [23,27–29,33,37,38,40].

The service provided in the reviewed care programs almost covered the whole cancer trajectory. Twelve (54.5%) of the 22 care programs were for cancer patients undergoing treatment: two were delivered in peri-operative period [24,35], seven were for chemotherapy [21–23,29,33,39,40], and three were for radiotherapy [20,25,27]. In six care programs, supportive care was provided for cancer survivors who finished treatment, but not as alternative of conventional medical follow-up [19,26,30–32,36]. There was one palliative care program for patients with advance stage cancer [38], one for cancer patients in community [37], and two for cancer patients both in treatment and after treatment who visited oncology outpatient clinic [28,34], respectively.

3.2. Study design

Among the 22 reviewed care programs, 13 were the existing services in the institutes [19–22,25–29,31,33,34,37]. Regarding the articles of these existing services, satisfaction with the nurse-led care were reported in five articles [19,22,26,28,29]. The details of the nurse-led services were introduced in four articles [22,26,27,31]. Quasi-experimental design was adopted to evaluate the effects of three care programs [21,25,37]. In two articles, the health care utilization of the patients receiving the nurse-led care were reviewed [33,34]. One article reported the feasibility and acceptability of the nurse-led service [20]. The sample size in these articles ranged from 36 to 962. The sample in three articles were more than 100.

The other reviewed articles were research programs. Five programs were randomized controlled trials (RCTs) to examine the effects of the nurse-led care programs [23,24,30,38,39]. The sample size of these studies ranged from 108 to 279. One report [32] was the protocol of a RCT of the nurse-led care after conducting a pilot study with 10 patients, introducing the study design of the RCT [41]. Three articles reported the pilot studies of the nurse-led care programs to test the feasibility and acceptability of these care programs [35,36,40]. The sample sizes of these pilot studies ranged from 4 to 45.

3.3. Structure analysis of nurse-led care programs

Structure of nurse-led care refers to the description of nurses who deliver the nurse-led care, including education level, certification, position title, working duration, training status [14], and the design of the nurse-led care.

3.3.1. The description of nurses

The majority of the reviewed care programs described nurses' characteristics in certain degree except three care programs (Table 1) [22,28,29]. The positions of nurses were most frequently reported in 19 care programs, including "clinical nurse specialist", "advanced practice nurse (APN)", "nurse practitioner", "nurse consultant", "specialist/specialized nurse", "breast care nurse", and experienced nurses working in relative areas. The number of nurses was the second common item reported, which ranged from one to eighteen.

The other four items were reported in a few care programs. Before the nurse-led care was delivered, the nurses in seven care

[1] A few articles reported the same nurse-led care program from different perspectives. Therefore, the number of articles was larger than the number of the nurse-led care programs.

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