

# Effects of nurse-led telephone follow-up for discharged patients treated with chemotherapy

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Received: February 18, 2014, Accepted: May 19, 2014

## ABSTRACT

**Objective:** Nurse-led telephone follow-up is effective in meeting information and psycho-social needs. We explored the potential effects of nurse-led telephone follow-up for patients treated with chemotherapy in China. **Methods:** A quasi-experimental study was employed in the research. 300 cases of cancer inpatients in a cancer hospital in Beijing during July-October 2012 were selected by convenience sampling. To compare the satisfaction and response regarding to chemotherapy adverse side effects, patients who discharged on Monday and Friday were provided with

telephone follow-up. Patients who discharged on Tuesday, Wednesday and Thursday received routine care. **Results:** Via telephone follow-up, patient satisfaction relating to nursing care increased. Moreover, their response to chemotherapy adverse side effects showed a significant difference. **Conclusion:** Telephone follow-up by specialist nurses may be a feasible option. It was well received by patients, with no physical or psychological disadvantage.

**Key words:** Chemotherapy, cancer, telephone follow-up

## Introduction

Cancer is a disease associated with aggressive treatments, debilitating side effects, severe physical problems and a multitude of uncertainties which both patients and medical staff have to face with. Increasingly, cancer is viewed as a chronic condition implying complex care and a growing demand for patient-centered quality of care across the entire cancer trajectory.<sup>[1]</sup> After chemotherapy, cancer patients often experience both physical and psychosocial problems that affect their lifestyle and quality of life. With respect to nurse-led cancer follow-up services,

including nursing consultations, are expanding to meet the needs of an ever-growing cancer population.<sup>[2]</sup> The help from health professionals is needed for patients and their families to direct themselves going through the cancer trajectory. Thus, the follow-up phase has become an important step in making the transition from cancer patient to cancer survivor.<sup>[3]</sup> During the last decades, the added value of nurse-led cancer follow-up care has been reported among different cancer populations in the domain of symptom management, patient satisfaction, emotional functioning, and medical safety.<sup>[4]</sup> Positive results have been reported on symptom management, psychosocial support and medical safety in nurse-led follow-up care relative research.<sup>[5,6]</sup> Providing follow-up care regularly via telephone by a special nurse may reduce hospital visits and it can also be an opportunity to educate patients. Nurse-led telephone follow-up in discharged patients with chemotherapy includes providing education about how to cope with chemotherapy adverse. A steadily growing number of studies address the topic of nurse-led cancer

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DOI:  
10.4103/2347-5625.135820

follow-up care, and evidence is beginning to emerge on the effectiveness of these initiatives. Nurse-led telephone follow-up after may well be an appropriate alternative to hospital follow-up. The purpose of this study is to investigate the effects of nurse-led telephone follow-up on response to chemotherapy adverse and patient's satisfaction with nursing care.

## Materials and Methods

### Study design

From July 1st to October 31st in 2012, 300 cancer patients, who undergoing chemotherapy in Cancer Hospital, Chinese Academy of Medical Science, were recruited to be eligible according to defined criteria. Nobody was unable to or refused to participate. Inclusion criteria contain diagnosis of malignant tumor by clinical, pathological or radiological examination, receiving systemic chemotherapy, access to a telephone, and adequate hearing. Exclusion criteria contain disease as Alzheimer's or chronic psychosis, patients who need support to maintain life, serious complication (advanced heart disease, uncontrolled hypertension, chronic renal disease requiring dialysis). Ethical approval was granted at study site.

### Intervention

All participants have been undergone chemotherapy, and received routine health education. Control group ( $n=150$ ) received routine care while experimental group ( $n=150$ ) received telephone follow-up care. To compare the satisfaction and response to chemotherapy adverse side effects, patients discharged on Monday and Friday were in experimental group. Meanwhile, patients discharged on Tuesday, Wednesday and Thursday was in control group. All of participants will sign the content. After that, participant in experimental group filled telephone follow-up contact form before discharging. A telephone follow-up handbook was developed according previous studies to collect information of patients which concludes name, address, diagnosis, treatment circle and other necessary information. The aim of telephone follow-up was to give advice and support for patients (and their partners) to address the physical and psychosocial consequences of chemotherapy treatment.

### Data collection

A semi-structured interview was used to collect patients' information in the telephone follow-up. It consist of two introduction questions, four symptom assessment questions, three health educational questions and two open questions. These questions are related to chemotherapy side effects, psychosocial symptoms, medication compliance,

self care, information requirements, and laboratory test results and reminding for next hospitalization. Seven to ten days after discharging, specialist nurses conducted the telephone follow-up. Each individual telephone appointment was allocated approximately 15 min (10 min for consultation and 5 min for dictating the outcome of consultations). If the patient had specific complaints or did not feel reassured, an additional appointment was made for patients to consult in hospital. In order to standardize the telephone interview, one month before research, all participating nurses were required to go through a three half-day training sessions which was developed for this study specifically. In this training course, specialist nurses learnt the cutting-edge developments in chemotherapy treatment and follow-up care model, and practiced their telephone communication skills.

### Outcome measures

A self-designed questionnaire was applied in this study. The contents include demographic information, diagnosis, disease characteristics, patient's response to chemotherapy adverse side effects and patient's satisfaction with nursing care (both in ward and after discharge). Data were collected by researcher when patients returned to hospital to receive next chemotherapy several days after. Patients' responses to chemotherapy adverse were coded as untreated (if patients have chemotherapy side effects, but he/she did not seek any treatment until telephone follow-up), or treated in clinic (if patient's chemotherapy side effects have been treated in the clinic before telephone follow-up). Patient satisfaction with nursing care was measured by a numeric scale ranging from 0-100 (a low score of 0 to a high score of 100).

### Statistical analysis

SPSS17.0 was used to data entry and analyses. Descriptive statistics were used to analyze the demographic and disease characteristics of the patient. Frequencies and percentages were used to calculate patients' response to chemotherapy adverse. The difference of patient's response to chemotherapy adverse between groups was compared with Chi-square test. The mean scores for satisfaction scale between the groups were compared by *t*-test. A value of  $P<0.05$  was considered statistically significant.

## Results

### Sample characteristics

A total of 300 patients participated in the trial. The clinical characteristics at baseline were similar between groups; the patient demographic and disease characteristics are presented in Table 1.

### Patient's response to chemotherapy adverse

Chemotherapy adverse side effects occurred in 65 of the 150 patients in control group and in 72 of the 150 patients in experimental group. However, only 14 patients went to see the doctor in control group while the number was 47 in experimental group. There was significant difference in patient's response to chemotherapy adverse between groups. Details are presented in Table 2.

### Patients' satisfaction with nursing care

The scores of patients' satisfaction were higher in experimental group ( $99.05 \pm 5.47$ ) than in control group ( $86.87 \pm 6.89$ ) at the time point of next hospitalization. There was significant difference regarding to inpatient satisfaction between groups [Table 3].

## Discussion

Since 1990s, nurse-led cancer services have expanded considerably, encompassing pre-treatment, therapy and follow-up trajectories.<sup>[7]</sup> In 2001, a literature review from Loftus, *et al.* highlighted the evolving role of nurse-led clinics since the year 1990.<sup>[8]</sup> This study aims to provide an update of the current statement by highlighting the literature on

nurse-led cancer follow-up care. The findings show that nurse-led telephone follow-up for patients undergoing chemotherapy is safe and feasible. Follow-up consultations could provide an opportunity to meet patients' needs regarding to information and psychosocial.<sup>[9]</sup> In addition, nurse-led follow-up may also reduce the number of routine investigations patients currently have and the burden on outpatient resources and doctors' time. Generally, the positive findings in this study were similar to findings reported in other studies investigating nurse-led telephone follow-up. In previous studies, patient satisfaction with nurse-led follow-up and telephone services was also found to be high.<sup>[10,4]</sup> and positive outcomes have been reported in terms of detecting medical problems and providing support to cancer patients.<sup>[11,12]</sup> The main advantage of nurse-led telephone follow-up care is that it could improve the relationship between patients and nurses, and provide a convenient method to have followed up appointments over the telephone comparing with attending clinic.<sup>[11,13]</sup> In particular, patient in experimental group in this study tried to find medical therapy more actively than patients in control group when chemotherapy adverse occurred. Nurses could help patients to identify side effects caused by cancer treatment. Furthermore, nurses should provide guidance to cancer patients in coping with these side effects.

Table 1: Demographic of patients (n=300)

Characteristics	No. of patients	
	Control group	Experimental group
Age, yrs	45.12±7.83 (19-73)	43.54±9.53 (21-70)
Gender		
Female	75	72
Male	75	78
Diagnosis		
Lymphoma	85	82
Lung cancer	28	34
Gastrointestinal tumor	19	25
Breast cancer	12	9
Esophageal cancer	6	

Table 2: Patient's response to chemotherapy adverse, values are numbers, n (%)

Group	Untreated	Treated in clinic	$\chi^2$	P
Control Group (n=65)	51 (78.46)	14 (21.54)	25.463	0.000
Experimental Group (n=72)	25 (34.72)	47 (65.28)		

Table 3: The patient satisfaction at the time point of next hospitalization (n=300)

Group	Mean±SD	t	P
Control Group	86.87±6.89	-2.019	0.044
Experimental Group	99.05±5.47		

## Conclusion

The National Health and Family Planning Commission of Chinese initiated "High-Quality Nursing Care" since 2010. Nurse-led telephone follow-up care, as one part of the "High-Quality Nursing Care", should be offered by Chinese nurses to benefit patients. The purpose of this study is to provide foundation for further research, clinical practice and education on nurse-led follow-up cancer care. It has shown that telephone follow-up care by specialist nurses has positive benefits for patients undergoing chemotherapy. The results of this study indicate that nurse-led initiatives can be used to reconfigure care to make it meet individual needs more responsively, to increase patient satisfaction, and to reduce the burden of both hospital visits and investigations. It should be used broadly due to the reason that it is a cost-effective method of communicating with patients as part of their follow-up care. Additionally, it has consistently been shown that telephone follow-up care is a feasible and effective way to provide support and information to patients.

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**How to cite this article:** Li G, Zhang S, Xu B. Effects of nurse-led telephone follow-up for discharged patients treated with chemotherapy. *Asia Pac J Oncol Nurs* 2014;1:46-9.

**Source of Support:** Nil. **Conflict of Interest:** None declared.