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Assessing the Improvement Effect of the New Advanced Cancer Nursing Role on Gastrointestinal Cancer Patients

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Abstract: Objective: To evaluate the improvement effect of the new advanced cancer nursing role on gastrointestinal cancer patients. Methods: 208 patients who were diagnosed as gastrointestinal cancer in The First Affiliated Hospital of Jinan University from May 2016 to October 2019 were randomly assigned to intervention group and control group. The patients of two group received different nursing measure. In control group, the patients received traditional nursing services in the treatment process. Besides, the patients of intervention group received additional nursing services, such as the new advanced cancer nursing role. We collected the information of participants by questionnaires and patient record, such as patients' experience of coordination, quality of life (QoL) and supportive care resources. Moreover, we collected data using the following questionnaires; the Treatment of Cancer Quality of Life Questionnaire, QLQ-C30 and QLQ-INFO25 and also a study specific questionnaire. Result: In result of different groups, the participants of intervention group had better performance than that of control group (59.31±25.41 vs 55.66±24.12, 66.71±26.84 vs 67.61±26.38, 58.44±25.51 vs 50.97±25.13, 35.67±28.81 vs 29.87±27.14). In assessment of supportive care resources, only the result of second question had a lot of gap, which is 'Did you get information about how to contact the health care provider outside office time?' [57 (54.8%) vs 64 (61.5%)]. Conclusion: The improvement effect of the new advanced cancer nursing role is obvious for the patients. Besides, the perceived information status of intervention group was improved in the result.

Keywords: Advanced Cancer Nursing Role, Gastrointestinal Cancer, Nursing

1. Introduction

The advanced nursing roles is a new conception in the hospital, such as Clinical Nurse Specialists, (CNS), Nurse Practitioner (NP) and Advanced Nurse Practitioner (ANP), they are clinical expert roles with academic degrees, master or higher [1, 2]. Base on reports, health care delivered by nurses in these advanced roles can improve important care quality, which have proven to impact factors in the treatment process [3, 4]. The improvement included safety, symptom-burden, experiences of patients and cancer care coordination [5]. In 2015 and 2017, Dr. McDonnell and Bell report that the advanced nursing roles will provide more advantages in work process, it not only can reduce readmissions but also contribute to the improvement of other staff members' skills and competences [6, 7]. For example, the Sweden's National Cancer plan, a part of its plan is that every cancer patient should be offered a contact nurse, as their main point of contact through the cancer journey [8]. The contact nurse is a clinical nursing role with in-depth knowledge in cancer care, supporting patients and their families during the cancer trajectory [9].

Gastrointestinal cancer is the leading cause of death in China and is the major public health problem [10]. Base on the reports, the emphasis of cancer research is not only intrinsic (proto-oncogene and antioncogene), but also extrinsic (tumor microenvironment) [11]. And the tumor microenvironment was influenced by treatment environment and patient status. So the advanced nursing roles had influence to treatment outcome of gastrointestinal cancer patients in the treatment process [12, 13]. The aim of this research is assessing the improvement effect of the new advanced cancer nursing role

on gastrointestinal cancer patients in Chinese hospital.

2. Methods

2.1 Participants Enrollment

All patients, their age were 18 years old or higher, diagnosed in May 2016 and October 2019 respectively with gastrointestinal cancer in The First Affiliated Hospital of Jinan University were invited to participate. After invited step, the participants (n=208) were randomly assigned to two groups, that included a control group (n=104) and a intervention group (n=104). The two groups were received different nursing measure in treatment process. For control group, the participants were received traditional nursing measures which is the standard of nursing measure by the hospital. For intervention group, we provided the advanced nursing roles to the nursing measure of the participants, our different professionals is responsible for nursing care in their respective professions. In treatment process, we collected the information of participants, such as patients' experience of coordination, quality of life (QoL) and supportive care resources. We collected data using the following questionnaires; the Treatment of Cancer Quality of Life Questionnaire, QLQ-C30 and QLQ-INFO25 and also a study specific questionnaire [14, 15]. Other information was from our researchers and patients' record in the treatment process. All participants have signed informed consent forms before they join our study, they were voluntary acceptance of new nursing measure in treatment process.

Their inclusion criteria were: (1) the patients were diagnosed as gastrointestinal cancer; (2) Patients volunteered to participate in post-treatment follow-up; (3) their mental status were healthy. Their withdraw criteria were: (1) Survival is expected to be less than 90 days; (2) Patients with severe vital organ dysfunction or related mental illness.

2.2. Statistical Analysis

Survey responses were analyzed using descriptive statistics. Sample proportions, means, and standard deviation (SD) are reported. All analyses were performed in SPSS 24.

3. Result

For the total sample, the score of all projects was low level or middle level in our research, especially information about other services, it is only half the other scores in the result (Table 1). In result of different groups, the participants of intervention group had better performance than that of control group (59.31±25.41 vs 55.66±24.12, 66.71±26.84 vs 67.61±26.38, 58.44±25.51 vs 50.97±25.13, 35.67±28.81 vs 29.87±27.14). The data of information about other services had a lot of gap between two groups, the participant performance had more significant improvements. We also found the following statistically significant improvements at result regarding the QLQ-C30 and QLQ-INFO25 items (p < 0.001).

Table 1. Patient reported perceived Information needs the Treatment of Cancer Quality of Life Questionnaire, QLQ-C30 and QLQ-INFO25.

Projects	Information about the disease	Information about the medical tests	Information about treatments	Information about other services
Control Group (n=104)	55.66±24.12	66.71±26.84	50.97±25.13	29.87±27.14
Intervention Group (n=104)	59.31±25.41	67.61±26.38	58.44±25.51	35.67±28.81
Cronbachs	0.78	0.88	0.84	0.86
P-value	0.029	0.051	0.012	< 0.001
95% CI lower/upper	[-3.15/1.67]	[-3.57/1.76]	[-5.10/0.01]	[-8.33/2.76]

The data of supportive care resources from patients report, they complete the questionnaires in treatment process (Table 2). The data of supportive care resources included 4 main questions in research, they had different assessment answers. In two groups, only the result of second question had a lot of gap, which is 'Did you get information about how to contact the health care provider outside office time?' [57 (54.8%) vs 64 (61.5%)]. But other results has the gap is not big in the research result.

Table 2. Patients reported access to supportive care resources, n (%).

Projects	How do you experience the access to contact nurse when you needed one?[a]	Did you get information about how to contact the health care provider outside office time?[b]	Did you get the support you wanted in your parental role?[b]	Do you know why you had a referral to palliative care?[b]
Control Group (n=104)	92 (88.5%)	57 (54.8%)	22 (21.2%)	77 (74.0%)
Intervention Group (n=104)	91 (87.5%)	64 (61.5%)	27 (26.0%)	82 (87.8%)
P-value	0.462	0.030	0.814	< 0.001

[a]Very good and Good.
[b]Yes.

Among the five items related to patients' experience of coordination in care transitions, we found statistically significant differences regarding three of the items in the result (Table 3). Most of result had small gap between intervention group and control group. Except for the third question which is 'Did the health care providers transfer information from palliative care and acute cancer care without the need for you to be responsible?', the participants of intervention group had better services in research [79 (75.96%) vs 53 (51.0%)].

Table 3. *Patient perception of involvement in and coordination of care, n (%).*

Projects	Did you have the possibility to ask questions regarding your care and treatment if there was something you didn't understand?	Did you wish to have more influence regarding decision-making related to your treatment?	Did the health care providers transfer information from palliative care and acute cancer care without the need for you to be responsible?	Did you understand why care transitions where needed? Did the staff explain to you why the care transitions were needed?	Did you experience that you were informed and involved in planning of your care transitions?
Control Group (n=104)	88 (84.6%)	15 (14.4%)	53 (51.0%)	65 (62.5%)	54 (51.9%)
Intervention Group (n=104)	86 (82.7%)	16 (15.4%)	79 (75.96%)	67 (64.4%)	61 (58.7%)
P-value	0.663	0.042	< 0.001	0.175	0.009

4. Discussion

Transforming roles in community nursing forms part of a broader United Kingdom (UK) government strategy to modernise and redesign the health service workforce [16]. Because given increasing economic constraints arising from the global recession, attempts to improve the effectiveness and efficiency of western healthcare workforces will doubtless continue for the foreseeable future [17]. Base on the boundaries between nursing and medicine with the rapid development of advanced practitioner and community matron roles, the resultant proliferation of transformed nursing roles is evident in some rich countries, such as UK and USA. For example, in UK, community matron is a term to describe experienced nurses with advanced clinical skills, responsible for the complex care coordination of people with long term conditions [18]. However, medicine and nursing opposition to advanced nursing roles and doubts over role legitimacy and relevance is evident in other western healthcare systems including Australia and Canada [19].

Base on the result of our study, the improvement effect of the new advanced cancer nursing role is obvious for the patients. Base on patient reported perceived information needs, the perceived information status of intervention group was improved in the result, especially information about treatment and information about other services, the status of those two domains had significant changing from patient report. In addition, the assessment of supportive care resources, although the total changing was better, the improvement effect was not obvious in the outcome. In assessment of involvement in and coordination of care, the status which the health care providers transfer information had great improvement in intervention group reports. The contact nurse provided satisfactory service in the treatment process, because the contact nursing play a important role in transfer information process.

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