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New Strategies to Improve the Quality of Peri-operative Stretcher Transportation Service in the Hospital

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Abstract

Objective In this study, we aimed to explore the effect of educational micro movies and practical experience (nurses as simulated patients) in improving the quality of peri-operative stretcher transportation service in the hospital. **Methods** From November to December 2021, 414 nurses from 18 departments of the Surgery Department of Guangzhou Women and Children's Medical Center participated in this practical study. Each nurse experienced the perioperative stretcher transportation service in the role of a patient, and experienced the whole process of being transferred from the ward to the operating room by the nursing staff, and then back to the original department. The whole process was recorded with photos and videos, and educational micro movies were made by department as a unit. **Results** Through this practice project, 17 disadvantageous factors (in 5 categories) affecting the quality of stretcher transportation service were summarized and 26 improvement measures were formulated. A total of 17 educational micro movies were released online by 18 departments; as of the end of December 2021, these movies have reached 113,994 views. 84.62% of nurses were satisfied or very satisfied with this practice project, and they believed that this new approach could help improve the quality of perioperative stretcher transportation service. **Conclusions** In this practical study, by allowing nurses to discover the deficiencies through fitting in patients' role, the standard operation procedure (SOP) for peri-operative stretcher transportation service was revised and improved.

Keywords: Practical experience; simulated patients; stretcher transportation; Peri-operative; Patient care

1. INTRODUCTION

The medical stretcher car is an important tool that nurses often use to transport patients in the hospital. It is mainly used for the transportation of patients before and after surgery and for patients with limited mobility. However, there are many limitations in the process of in-hospital stretcher car transportation, including challenges in equipment and personnel

arrangements, and even potential safety hazards to patients and clinical workers [1]. The medical stretcher transportation technique is one of the most commonly used techniques in surgery. However, because the procedure is relatively simple, nurses usually do not pay much attention to it. In this practical study, we hypothesized when nurses play the role of patients, they may empathize with the patient through their personal experiences and feelings and would select effective interventions to provide immediate feedback on existing problems [2]. Therefore, we conducted a practical experience study on perioperative stretcher car transportation in our hospital from November 2021 to December 2021. Nursing teams from 18 departments related to the surgical department of our hospital participated. Nurses recorded the whole process when they played/experienced the role of patient role with photos, videos, etc., and made them into educational micro movies. We believe that this project motivated all members of the nursing team to participate in the detailed management of medical stretcher car transport, and mobilized the enthusiasm of nurses to participate in the improvement of nursing quality.

2. MATERIALS AND METHODS

2.1 Research Participants

From November to December 2021, a total of 414 nurses from 18 departments of the Department of Surgery in our hospital participated in this study. Their ages ranged from 23 to 53 years, with an average of 31.57 ± 2.47 years. There were 20 males and 394 females, including 8 deputy chief nurses, 87 chief nurses, 144 nurses, and 175 nurse practitioners. Regarding their education, 6 people have master's degrees, 379 people have bachelor's degrees, 27 people have college degrees, and 2 people have technical secondary school degrees. All research subjects were aware of the purpose of this research and voluntarily participated in this project.

2.2 The process of practical experience

First, 414 nurses in 18 departments of the surgical department were organized and arranged by the head nurses of each department to participate in the practical experience. Each nurse experiences the transport to the operating room as a patient. Specifically, each nurse lays down on the stretcher car in person, and other nurses in the department transport him or her to the door of the operating room and back to their original department.

Next, each department set up a high-quality nursing service group with the goal of "caring for patients, I will experience it". The members of the group will arrange the experience activities for the participating nurses in batches and time periods. At the same time, the members of the group are divided into a photography group, a video production group, an opinion collection group, and a service improvement and promotion group. The members of the photography team recorded the whole process of the nurse-patient role experience of perioperative stretcher car transport in the form of photos and videos. The members of the opinion collection group collected feedback after the nurses' experience to understand how each nurse felt when they experienced the transport service. The video production team used photos, videos, improvement suggestions, and other materials from the practical experience study as materials to produce micro movies. After being reviewed

by the head nurse of the department, the videos were posted on the designated online platform. The quality control members of the department formed a service improvement and promotion group, which helped improve the patient's medical experience during stretcher car transport in the way of PDCA (plan-do-check-act).

3. RESULT

3.1 Factors affecting the quality of perioperative stretcher transportation service

Each department formed a quality control team and set the theme of the activity, which is to improve the medical care quality of patients undergoing stretcher car transport before or after surgery. The members are from the department improvement service promotion group and include 1 or 2 specialist doctors. According to the actual situation of the department, each department formulates activity plans and programs, draws Gantt charts, organizes discussions, and implements activity programs. Focusing on improving the patient's medical experience and service, the fishbone diagram was drawn from the aspects of people, machine, material, method and process to analyze the affecting factors. Then, in the form of PDCA, the service of improving the patient's medical experience and transport by stretcher car was applied. As shown in Table 1, we have summed up 5 categories of 17 obstacle factors affecting the quality of stretcher car transport service and formulated 26 improvement measures.

3.2 Revised operational procedures for stretcher car transport

According to the feedback of the nurses and the summary of the obstacles to quality service after the role experience of the patients, the relevant departments discussed and reorganized the operation process of the stretcher car transport (Figure 1).

3.3 The social impact of micro movies published

As shown in Table 2, 18 departments of the Department of Surgery successfully released a total of 17 micro movies about patient role experience. Most of the video publishing platforms are WeChat video accounts. The viewers of the video are patients, family members of patients, medical staff, etc. As of December 2021, the 17 videos have been viewed approximately 113,994 times.

3.4 Nurse Satisfaction

Satisfaction among nurses who experienced the perioperative stretcher transport service in the patient role was surveyed. As shown in Table 3, 57.5% of nurses are very satisfied, 31.6% are satisfied, 10.9% feel generally, 0% are dissatisfied and very dissatisfied, and 0% are dissatisfied and very dissatisfied.

4. DISCUSSION

4.1 Summary

Perioperative stretcher car transportation is a frequently used procedure for operating room and surgical ward nurses. However, due to inertial thinking, problems appeared during

Table 1. Factors limiting the quality of perioperative stretcher transportation service

Category	Contributing Factors	Improvement measures
Personnel	Patient: anxiety; fear of surgery; loneliness during transport	1. Nurses should strengthen the education of patients and their families before and during transport
	Nurse: Busy work, quick transfer, less communication with patient during transfer	2. Strengthen the training and assessment of SOP for stretcher car transport of nurses and attach importance to humanistic care
	Manager: The operation is commonly used and relatively simple, and does not pay attention to it	3. Raise awareness and pay attention to the safety and comfort of stretcher car transport
Machine (Stretchers)	Selection and maintenance of stretcher car;	1. Regular maintenance of stretcher cars, specially-assigned person responsible for management 2. The selection and use of cars according to the child's age, height and weigh 3. Check the safety of the stretcher car before use
	Wheels	4. Regularly clean wheels, oil maintenance, the use of damping mute universal wheels
	Lathe shield	5. Regularly maintain the bed rail, ensure that the lathe rail is easy to rise and fall and its firmness
	Oxygen tank	6. Regularly check whether the oxygen bucket holder is firm and whether the oxygen content of the oxygen bucket is sufficient
Substance	Constraint Item	1. According to the patient's condition, prepare the necessary auxiliary tools, uncooperative, irritable patients prepare restraint straps; spinal injury/surgery patients prepare hard boards; cervical fracture patients prepare cervical collar/neck circumference, sandbag, etc. 2. Disinfect the restraint belt after each person, and select the restraint articles with comfortable fabric and wide contact surface
	Mattresses and sheets	3. Recommended use of softer mattresses 4. Choose warm color system, warm pattern pad, reduce the patient's fear
	Pillow	5. Increase the pillow before surgery and the cervical pillow after surgery
	Quilt	6. Prepare appropriate quilts according to the season, pay attention to the patient's warmth and protect the patient's privacy
	Rescue equipment	7. Transport emergency equipment, equipment and drugs for critically ill patients 8. Check whether the mobile power supply of the transferred monitor and infusion pump is fully charged
Method	SOP	1. Re-refine the SOP for stretcher car transport and strengthen nurse training
	Transport process	2. Maintain uniform and slow speed, gently lift the lathe when entering the elevator and other uneven ground positions, and minimize the change in lathe direction 3. When uphill and downhill, the patient's head should be located in a high position
	Caring measures	4. Comfort patients during transport, education 5. Instruct the family members to push the lathe together and try to keep the family members on the head side of the child 6. Let the family members and patients chat to relieve the feeling of tension and discomfort when waiting for the elevator, and pay attention to protecting personal privacy
Process	Light	1. Ask the patient to close his eyes in advance when entering the bright light area, and choose to wear eye shields and hats to relieve discomfort such as stabbing lights
	Privacy Protection	2. Help patients cover their quilts before transport to ensure occlusion of private parts of the body 3. According to the patient's condition and needs, help the patient wear a mask during the transport process when necessary

the service are easily overlooked. Therefore, it is necessary to introduce a way of playing simulated patients to promote high-quality nursing services. The exchange of roles between nurses and patients provides a good way for nurses to identify problems. Through empathy,

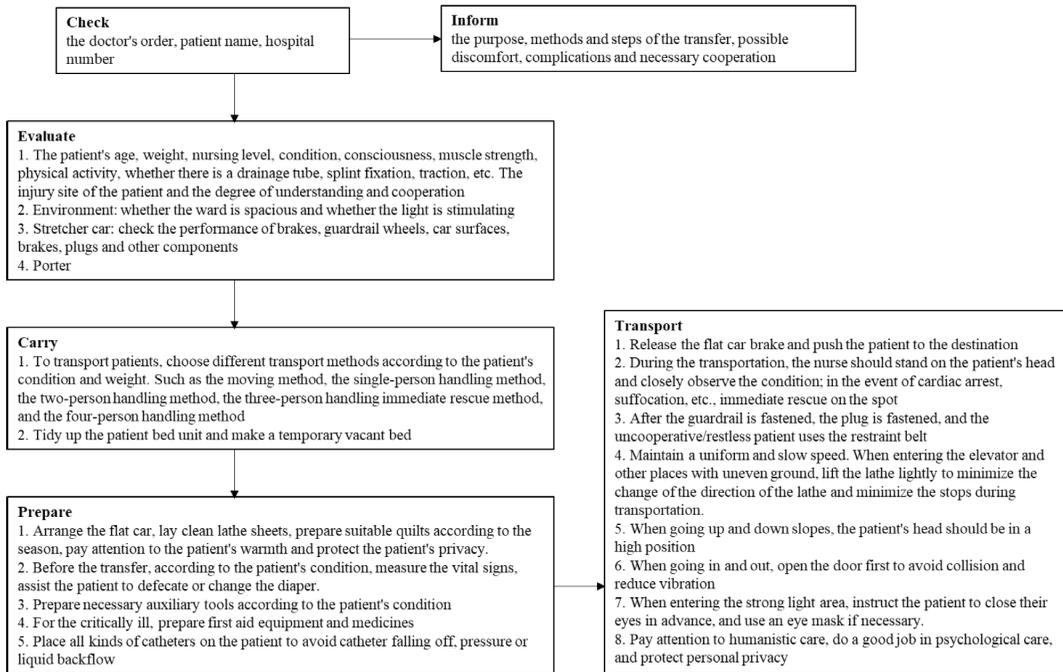


Figure 1. The Operation Process of Stretcher Patient Transport

the strengths and weaknesses of hospital management can be keenly discovered, and the opinions and suggestions put forward are more targeted and practical [3]. In this study, nurses found 17 problems in 5 categories by experiencing the perioperative stretcher transport service through playing patients' roles. Moreover, 26 improvement measures have been jointly formulated by departments managers and nursing teams, which reflects the concept of delicate and detailed management and improves patients' medical care experience. In addition, we organized relevant departments to jointly revise the "Operational Procedures for Stretcher Transportation of Patients", and each department organized nurses to train and learn the updated operational procedures. In addition, the process of the nurse experiencing the stretcher car in the role of the patient was recorded in the form of photos and videos, and released on the WeChat video account and other media in the form of educational micro movies, which showed the process of the nurses serving and caring for the patients with heart.

4.2 Challenge

In the era of self-media, nurses need to think about how to use the Internet to improve high-quality nursing services and reflect the value of the nursing profession. New media such as WeChat, Weibo and live video platforms have been widely used to meet the growing health needs of the public [4]. The online release of the nursing service process in the form of a micro-movie can improve the clinician-patient relationship and establish a high-quality nursing brand of a hospital. Nursing staff can gain interest in their work through the production and release of micro-videos, enhance their sense of self-fulfillment in a pleasant

Table 1. The social impact of micro movies published (views and production department)

Department	Video Name	Duration	Views	Platform
Surgical Area 8	External 8 Lathe Experience	1 min 40 sec	3589	Wechat
SNICU	Lathe Experience	2 min 29 sec	8743	Wechat
Breast Surgery	Your safety and comfort are on the waiting list for our team	44 seconds	6420	Wechat
CICU	Lathe Experience	1 min 41 sec	5120	Wechat
Surgical Area 11	Experience the lathe in the patient rol	45 seconds	8911	Wechat
Surgical Area 11	Fall proof bed during transport	1 min 05 sec	5455	Wechat
Surgical Section I	Lathe Optimization Experience	51 seconds	3116	Wechat
Children’s Hospital Area Operating Room	Transfer Bed Experience ing	2 min 42 sec	32128	Wechat
Children’s Hospital Area Operating Room	Waiting on the lathe	57 seconds	4305	Wechat
Surgical Area 7	Taking care of the patient, my experience	53 seconds	2827	Wechat
Operating room of maternity and infant hospital	Experience Lathe Service	57 seconds	4000	Wechat
Surgical Section 4	Taking care of the patient, my experience	1 minute	7930	Wechat
Interventional intracardiac	Lathe experience is always mobilized, like the patient thinks	1 minute	5420	Wechat
Cardiovascular	Experience the lathe in the patient role	1 min 05 sec	2190	Wechat and Tencent
Surgical Area 10	Surgical Area Ten Lathe Experience	1 min 58 sec	2989	Wechat and Tencent
Surgical Area 10	Fall prevention bed	1 min 49 sec	3113	Wechat and Tencent
Operating room, Zhujiang New City Campus	Experience in transporting operating bed	1 min 43 sec	4230	Wechat
Surgical Area II	Here we go, lathe experience	47 seconds	3508	Wechat

Table 2. Satisfaction survey of nurses on patient experience of stretcher transport service

Total nurses	Very satisfied	Satisfied	Average	Not satisfied	Very unsatisfied
414	238 (57.5%)	131 (31.6%)	45 (10.9%)	0 (0%)	0 (0%)

atmosphere, and learn to provide services and care in a way that patients can easily accept and understand. However, 84.62% of nurses were satisfied or very satisfied with the perioperative stretcher transport service experience, which indicated that there is still much room for improvement in this practice experience research. Among them, 10.9% of the nursing staff said that the practice experience was not excellent. They believed that the form of the patient experience process was limited, the experience process ignored possible interference factors

or accidents in the clinic, and the patient role set was too simple. The next phase of the patient role experience project will be closer to the clinic.

4.3 Prospect

The focus of the high-quality nursing model is to allow nurses to have their own responsible patients, and to promote nurses to take responsibility and pursue results. By carrying out this nursing practice research, we can mobilize the enthusiasm of nursing staff to participate in nursing management, actively discover problems at work, and create meticulous nursing services with detailed management. Nurses have high participation and enthusiasm in the experience activities, which stimulates the self-management ability of nurses. The responsibility of the nursing manager is to stimulate the initiative of nurses in self-management and the enthusiasm for offering nursing care with high quality [5]. The patient role experience activity enables nursing staff to pay attention to detail management, pay more attention to the patient's medical experience, actively improve services, and integrate humanistic details into high-quality nursing services. We believe the patient experience activity enables nursing staff to pay attention to detail management and the patient's medical experience, proactively improve services, and integrate humanistic details into high-quality nursing services.

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