



NURSE-DRIVEN EARLY MOBILITY INTERVENTIONAL PROTOCOL AMONG INTENSIVE CARE UNIT IN-PATIENTS AT SHOUKAT KHANUM MEMORIAL CANCER HOSPITAL AND RESEARCH CENTER, LAHORE

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Abstract

The technology and medications have improved and increased survival rates are also increasing in intensive care units (ICUs). However, prolonged immobilization plays an important role in negative outcomes of critically ill patients. Immobility is widely documented in the literature as a cause of increased mortality and complications. Despite the growing evidence in support of early mobility, many ICUs are unable to effectively integrate early/progressive mobility into their daily practice. Literature supports early mobilization and physical therapy as a safe and effective intervention that can have a significant impact on functional outcomes. A progressive mobility tool may help to force a daily structured assessment of current mobility status, which supports the critical thinking process by the nurse and team to ensure effective and safe evaluation of the mobility level. The purpose of this project was to increase critical care nurses' understanding of the concept and benefits of early mobility during an educational program in which a nurse-driven progressive mobility protocol was introduced. It was found that, after reinforcement and educational session regarding nurse driven mobility protocol, the knowledge was increased among ICU nurses and they practice it in daily routine care.

Introduction:

The post-operative surgical oncology patients, who need vital monitoring initially, being shifted to Post Anesthesia Care Unit (PACU). After anesthesia reversal, they transferred to Intensive Care Unit (ICU) or High dependency Care Unit (HDU) for critical monitoring. In HDU, patients are not mobilized due critical condition. In addition, major surgeries put the patient on high risk for

the development of complication due to immobility. However, most of the researches highlighted the importance of early mobilization of patients admitted in ICU.

On the other hand, challenges are being faced about early mobilization among surgical patients in ICU because it is full of risks. In addition, Catheters and supporting measures attached to patients become dislodged and put the patient in critical situation. That's why; Joint Commission International and ISO certified health care organization developed standard protocols for the early recovery of patients undergoing such surgeries.

One of the Pakistan standards Hospital, SKMCH&RC has not yet introduces guidelines for early mobilization of patients, who admitted in ICU or HDU. Many patients suffer from complication related to early mobilization. Therefore, the aim of this program was to maximize the understandings and benefits of early mobilization among ICU nurses and to implement the early mobility protocol for post-operative patients admitted in ICU. The resolution of this problem, I have conducted an innovation project in Intensive Care Unit of SKMCH&RC, Lahore.

The main aim of the study includes implementing the nurses driven mobility interventional protocol for post-operative in-patients in Intensive Care Unit. Moreover, this protocol nurses will initiate to mobilize the patient by safe and more effective way.

Aims of the study:

1. To maximize the understandings of nurses and benefits of early mobilization among Intensive Care Unit in-patients.
2. To implement the early mobility protocol for post-operative in-patients in Intensive Care Unit.

Significance of study:

Early mobilization of critical patients is a key challenge for the ICU nurses. Moreover, this leads to positive outcomes by minimizing complication and promoting best possible outcomes, like minimizing length of stay, cost effective therapy and improving quality of life.

By taking the initiatives regarding patient early mobility can minimize the complication related immobility. For the early patient mobility, there should be early patient mobility protocol or guidelines available.

Literature review

Mobility needs throughout the hospital stay and not just when patient ready to be discharge. Early mobility intervention has significance because of the influence on patient outcomes. The long term results of early mobility program reveal an overall improvement in the patient's physical function and quality of life. Not only is a quality of life better, but an early mobility program also suggests a decrease in morbidity and mortality. Early mobility for post-operative surgical patients can lead to positives outcomes including minimizing complications of bed rest, promoting improved function for patients, promoting weaning from ventilator as overall strength and endurance improve, reducing LOS, reducing overall cost, and improving quality of life (Perme & Chandrashekar, 2009)

Mobilizing post-operative patients is a central nursing action that has been lost in the high acuity environment. Skill in basic nursing actions are learned in school and transformed into adequate performance in the clinical setting. The performance of practical skills in nursing is characterized by complexity on many levels. While mobilization is part of the beginning nursing skills that are taught, its importance is

often overlooked. More complex procedures and technological interventions often seem to become the focus of care, yet basic interventions such as early mobilization have been found to significantly improve patient outcomes. The complexity lies in sequencing the substantial elements in relation to the individual patient's condition and needs (Bjørk & Kirkevold, 2000).

Mobility is a critical part of nursing practice. Nurses often depend on physical therapy to do even the simplest of mobility tasks, such as range of motion. However, they are not regularly available. In a survey of 984 physical therapists in the United States (US), it was found that only 10% of ICU's had physical therapists assigned to work in the ICU (Wong, 2013).

This fact accentuates the need for a nurse driven mobility protocol. Other resources are not readily available, but more importantly, mobility is central part of the nurse's role. The need to increase knowledge and change nursing practice in relation to early mobility is a key role for the advanced practice nurse.

Barriers to the promotion of early mobility include clinicians' knowledge deficits, sedation practices, lack of human and equipment resources, patient physiologic instability, and established ICU culture. Altering well-established routines and patterns of care requires a comprehensive approach to instituting not only individual behavior change, but also a system that support a shift in group norms (Castro, Turcinovic, Platz, & Law, 2015).

Lewin's Change Theory was chosen to guide the development and implementation of a nurse-driven progressive mobility protocol. Kurt Lewin described a method that provides a basis for considering the process of planned change (Manchester et al., 2014). Planned change occurs by design, as opposed to change that is spontaneous or that occurs by accident. Effective change can be implemented with using this theory (McEwen & Wills, 2007).

The concepts of field and force are central to Lewin's ideas. A field is viewed as a system, so

when change occurs in one part or aspect of the system, the whole system must be examined. Force is defined as a directed entity that has the characteristics of direction, focus, and strength. Change is a move from the status quo that results in disruption of the balance of forces (McEwen & Wills, 2007).

There are two forces involved in change, driving forces and restraining forces. A driving force encourages or facilitates movement to a new direction, goal, or outcome and causes a shift in equilibrium towards change. A restraining force blocks or impedes progress toward the goal and causes a shift in equilibrium, which opposes change and counters driving forces (McEwen & Wills, 2007)

Adequate project planning included analysis of these opposing forces. Driving forces must be identified and accentuated (Castro et al., 2015). Driving forces identified in this project included support of administration and management, an educational program for nursing, and evidence-based literature supporting mobility of critically ill patients. Restraining forces must be identified and minimized. Some of the restraining forces identified were nurse reluctance to mobilize patient for fear of unplanned extubation or hemodynamic instability. Over sedation, delirium, resistance to change, time constraints, and lack of specific protocols addressing mobility are other barriers identified as restraining forces. Effective change is the return to equilibrium as a result of balancing opposing forces (McEwen & Wills, 2007).

Lewin identified three phases that must occur if planned change is to be successful: unfreezing the status quo; moving to a new state or change; and refreezing the change to make it permanent (McEwen & Wills, 2007). Unfreezing is the process which involves finding a method of making it possible for people to let go of an old pattern or habit that was counterproductive in some way (Castro et al., 2015). Change can be stressful and cause uneasiness, resistance, and loss of control. Individuals involved must be informed of the need for change and should agree that the change is needed.

Unfreezing can be achieved by increasing the driving forces and decreasing the restraining forces that negatively affect the movement toward change. The next step is moving to a new level or changing. The initiator of the change should recognize that change takes time and should be thoughtfully and comprehensively planned before implementation. Refreezing is establishing the change as a new habit, so that it now becomes standard operating procedure. Without this stage of refreezing, it is easy to go back to the old ways (Kritsonis, 2005).

Stabilization occurs and the change is assimilated into the system. The usual practice in the ICU had been complete bed rest for the majority of critical care patients. Even if there was not an order for any activity, it was generally assumed by nurses that the patient was on bed rest. The use of Lewin's planned change theory to implement a nurse-driven mobility protocol will allow a better understanding and plan for implementation. Due to the variety of medical and surgical patients in this ICU, a detailed education program and protocol needed to be developed.

The integration of best evidence and education regarding the complications of bed rest prior to implementation would be part of the unfreezing stage. Integration of the mobility protocol into daily practice at the bedside would be part of the change phase. Altering well-established routines and patterns of care requires a comprehensive approach to instituting not only individual behavior change but also a systems change (Bassett, Vollman, Brandwene, Murray, & Nursing, 2012). Implementation of a nurse-driven protocol in the ICU can be very challenging but it was believed that the use of the theory would assist in the process.

Methodology:

A nurse-driven progressive mobility protocol developed by Morris et al. (2008) was introduced during an educational program. Nurse driven mobility protocol was first time introduced SKMCH&RC-ICU among all nurses. Most nurses use this protocol as guidance during patient mobility.

After the study mobility was addressed daily during interdisciplinary rounds as nursing staff integrated mobility into their daily care routines.

Study participants included 22 ICU nurses, a pre-intervention survey was done that identify the basic understanding of nurses related the benefits of mobility and the complication of immobility. The result showed that most of nurses do not have basic knowledge regarding mobility. So a study session was conducted for all ICU nurses, in which a nurse driven mobility protocol was introduced. This protocol will help ICU nurses to identify patient at high risk and start early mobility as soon as possible in post-operative surgical patients. Thus post-operative surgical patients will get maximum benefits of mobility in the form of shorten the length of stay in HDU, later on complication will be minimized.

A survey was conducted in ICU of the Shaukat Khanum Memorial Cancer Hospital and Research Center (SKMCH&RC) Lahore. The data were collected by using direct observation checklist and distributing the questionnaire (pre intervention survey) among ICU staff nurses from November 14, 2016 to November 16, 2016. The checklist was consisted regarding the daily practices of patient mobility of post-operative surgical patient.

The pre intervention questionnaire consisted to the knowledge regarding mobility. Training and education were provided to all the ICU nurses about early mobility to the post-operative surgical patients. Power point presentation (Appendix E) outlined the complications of immobility, interventions, exclusions, and the four-step plan for mobility. Implementation began immediately after the education was completed. About four weeks post implementation of the protocol; nursing again received an informational letter (Appendix F) in the same manner as pre-education as well as the post test (Appendix D). Nursing knowledge and use of the protocol was again evaluated by posttest approximately 4 weeks post implementation of the protocol.

The project was an initiative to integrate the latest evidence on mobility practice into current ICU practice. The intent of the protocol was to provide a structured approach for the nursing staff to evaluate and progress patient activity in a stepwise fashion. The protocol would help nurses view mobility as a core component of nursing care and empower them to proactively initiate therapeutic patient activity (Stewart et al., 2007).

A protocol for progressive mobility developed by Morris et al. was chosen from the review of the literature (*Figure 1.*). The protocol was presented to the Task Force for review and was accepted. The protocol had been implemented in many different critical care units and had been adapted to various institutions as needed. For purposes of this study, members of the lift team were included in the protocol as a resource.

The protocol consists of four steps that are easy to follow and can be utilized quickly and easily by staff. Nurses were instructed that the protocol was to be used as a tool to help determine readiness and promote early mobility and that these assessment should take place at least twice daily. If a patient was not ready for mobility early in the day, they might meet the criteria later in the day. The goal was for nurses to attempt, through assessment via the protocol, to get patients mobilizing.

Nurse Driven progressive mobility protocol (Morris et al. 2008).

The nurse manager of the ICU and senior NIP ICU discussed the introduction of a mobility program with staff during the monthly staff meeting prior to the education.

Interventional Protocol:

The education was delivered by Power point presentation in ICU to all ICU nurses. The education on mobility was determined by the nurse manager to be mandatory for staff employed in the intensive care unit. Implementation began immediately after the education was completed. Small pocket-sized copy of the mobility continuum was distributed to staff.

In collaboration with senior NIP ICU, nursing, and health care assistants, the nurse driven early mobility protocol was implemented in November 26- 2016, the week following the education session with daily reports on patient's mobility status during interdisciplinary rounds.

We reinforced the protocol through periodic reminders and observation of staff. This phase was guided by Lewin's refreezing the change to make it permanent. About four weeks post implementation of the protocol; nursing again received an informational letter in the same manner as pre-education as well as the post test. Nursing knowledge and use of the protocol was again evaluated by posttest after 4 weeks post implementation of the protocol. In addition to the five questions included in the pretest, a sixth question was asked regarding to what degree nurses felt they provided earlier mobility to their patients.

Personal Experience:

I have been working as staff nurse in intensive care unit from last 3 years. During this period I have noticed that in ICU all nurses facing the challenge to for the patient early mobility. Multiple factors are associated contribute for the immobility of post-operative surgical patients. Several of the new staff nurses, healthcare workers, are not well aware of the ways for the patient mobility and its benefits.

Only senior staff nurses aware about the benefits of early patient mobility and it the complication related to the immobility in ICU, any how they are taking sometimes initiatives to mobilize the patient, but the new staff of ICU has less knowledge about it so that's way they did not practice it. They do not follow the procedure in proper way and fail to comply because of lack of knowledge and lack of practices. So, underline reason, the patient mobility is compromised some times and it results the advancement of immobility complications.

Results of Study:

Total 22ICU nurses were observed and included in this study. The work experiences of the nurses

were 1-5years, mean 2.5years, in intensive care unit. The post-test was offered approximately two weeks after implementation of the program (i.e. education session) to the same ICU nurses who participated in the pre intervention survey. The data was collected among only 14 ICU nurses because 8 nurses left hospital. Table 1 represents the differences between pre- and post-test results on questions one and two, which asked the frequency of repositioning and range of motion performed in the last shift worked, respectively, that was also being observed in checklist. These first two questions demonstrated that one staff member reported an increase in number of times patients' were repositioned and number of times range of motion was performed.

	Decreased	Stayed the Same	Increased
Question 1 repositioning # times/shift	0	9	5
Question 2 Range of Motion Performed # times/shift	0	8	6

Table 2 displays responses to three general mobility knowledge questions related to assessing for readiness, best practices for early mobility, and main causes of functional limitations one year after discharge. There was a great enhance in the knowledge as compared to the previous results.

	Pretest Correct	%	Post-test Correct	%
Question 3- When to assess For readiness	3	21.4%	13	93%
Question 4- best practice to facilitate delivery of EM	1	7%	11	79%
Question 5- main cause of functional limits 1 year after D/C	5	36%	12	85.6%

Table 3 demonstrates nurses' responses regarding the degree to which that they reported that they have provided earlier mobility. This question was only asked on the posttest, so a comparison could not be made.

	Very Frequently	Frequently	Occasionally	Rarely	Never
Question 6 Degree You Have Provided Earlier Mobility	0	11	3	0	0

Mobility practices post-test improved in ICU nurses reported frequency of turning and repositioning. Knowledge levels also improved when compared to the pretest.

Conclusion:

It was found that, after reinforcement and educational session regarding nurse driven mobility protocol, the knowledge was increased among ICU nurses and they practice it in daily routine care. Implementation of the protocol was initiated after completion of the educational program. Mobility was addressed daily during interdisciplinary rounds as nursing staff integrated mobility into their daily care routines. Nurses also started mentioning mobility practices in the nurse's notes. The mobility protocol was distributed for easy reference among all ICU nurses and put outside the HDU cabins.

Recommendation:

It is concluded that the implementation of the Nurse Driven progressive mobility protocol in ICU for the post-operative surgical oncology patients brings positive outcomes regarding nurse's practices. Through early patient mobility we can prevent our patient from long stay in ICU and many other concerns.

- Needs for the continuous implementation of Nurses driven mobility protocol for patient mobility and refreshing the nurse's knowledge about early patient mobility.
- There should be proper documentation of mobility in nurse's notes.
- There is needed to be the implementation of such type of innovation project in ICU rather than in HDU.
- There should be a protocol and guidelines for the mobility of critical ill ventilated patients.
- There is a need to design a mobility team in ICU, who can give the cover of mobility concerns to all critical ill ICU patients.

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