



Staff Perceived Barriers to Early Mobility in Medical vs. Surgical ICU at Hospital

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ABSTRACT

Intensive Care Units (ICU) of hospitals have a dynamic environment in which physiotherapists play a great role and work along with the multidisciplinary team and provide great care in acute conditions and rehabilitation programs.

Objective: The objective of the study was to find out the barriers to early mobility therapy that are perceived by the staff of ICU. **Methods:** The study design is cross-sectional comparative. The sample size of 138 medical staff (different Government hospitals) was divided into two groups. Group 1 was denoted as medical ICU staff and Group 2 was denoted as surgical ICU staff. A four-point Questionnaire was used to find the barriers to early mobilization in ICU practice. **Results:** The results of the study showed the significant difference of institutional barriers between surgical ICU (mean=6.25) and medical ICU (mean=4.30), the list of other barriers in surgical ICU (mean=4.92), and in medical ICU (mean=5.35) were significantly different. The barriers other barriers perceived by the medical ICU were high as compared to the surgical ICU. Whereas the list of patient-related barriers to early progressive mobilization in surgical (4.5) vs. medical (4.6) ICU were significantly having no statistical difference. **Conclusion:** It is concluded that the ICU staff perceived barriers to early progressive mobilization of patients slightly different in medical and surgical ICU.

Keywords: ICU, Barriers

INTRODUCTION

Physiotherapy is thought to be an integral part of patient management in the Intensive Care Unit (ICU) of hospitals in different developed countries. Intensive care units of hospitals have a dynamic environment in which physiotherapists are vital members and work along with a multidisciplinary team providing a great spectrum of care from acute care conditions to the rehabilitation program. Critically ill patients, particularly those who require mechanical ventilation are usually prone to have impairments in physical function and also the associated immobility leads to Intensive Care Unit (ICU) acquired weakness [1]. Early mobilization in ICU patients is known to be safe and beneficial but to its implementation, barriers still exist. Immobility, de-conditioning, and muscle weakness are the consequences of prolonged critical illness and are the perceived barriers to mobilize the patient in ICU. The role of physiotherapists, medical staff, and nurses also varies considerably from one unit to the next, depending on different factors such as the country in which the ICU is located, its local tradition, staffing levels, training, and expertise. But still, we can say that the Diagnosis and resuscitation therapies for critically ill patients have been improved much in the last 25 years, and survival has also increased. The only way to decrease the mortality rate and to improve post-hospital quality of life is the mobilizing and stabilizing the critical patients as soon as possible. Early mobility therapy is beneficial and does not increase the treatment cost and also decrease the hospital stay often patients with critical illness return to home with an inability to function properly or live as fully perfect as before [2]. Others who leave the Intensive Care Unit (ICU) after critical illness have experienced prolonged physical disability, permanent/timely loss of function or the need for repeated hospitalization and on-going supportive care. Most patients of this critical illness, who survive, become hospital dependent or chronically critically ill. So the ICU mobility has one of the leading roles in lowering the complications after or during critical illness [3]. As an Intensive care unit have a dynamic environment and the physiotherapists are vital members of this multidisciplinary team and providing a great spectrum of care from acute problem to rehabilitation [4]. No evidence has been found yet in our current setups. Previous researches have

been done in the ICU's of other developed countries. The environmental factors of the hospitals of Pakistan are very different and the concept of early mobility in ICU is very important in emerging complicated diseases [5].

OBJECTIVE

The objective of the study was to find out the barriers to early mobility therapy that are perceived.

Rationale

It is well established and well-known fact that early mobilizing the critically ill patients has many advantages, but it is not occurring as frequently as expected and needed. The barriers and ways to improve this concept are not clearly understood yet; hence this study helped to find all modifying causes and barriers which are perceived by the ICU staff in mobilizing critically ill patients. And it added the opportunities to improve the post-hospital quality of life for survivors of critical illness that decreased the mortality rate due to the ICU acquired immobility and complications. This study particularly focused on how early mobilization improved the quality of life of critically ill patients in ICU.

Literature Review

A randomized control study was carried to determine, does a program of intensive care physiotherapy improves long-term physical functional performance compared with a program of standard care physiotherapy by MOSS M. et al, [6]. It concluded that intensive care physiotherapy did not improve long-term physical functional performance compared with standard physiotherapy [6]. A prospective cohort study was conducted by Peter E. Morris. et al, with the objective of whether the mobility protocol speed the proportion of intensive care unit recovery of critical patients who are receiving physical therapy vs. usual care [2]. They concluded that the team using the mobility protocol was feasible, safe and no extra cost of a long hospital stay in survivors who received physical therapy during the intensive care unit treatment as compared with patients who only received the usual care [7]. A prospective survey was conducted by Dafoe S and the team at an Australian tertiary care public hospital in 2015 to investigate the perceptions of the barriers to the early progressive mobilization of ICU patients which are perceived by their staff in ICU settings [8]. They concluded that the barriers which are perceived by the staff are multifactorial and are usually due to the patient's critical condition or due to the limitation of sources [8]. An observational/single day prevalence study was conducted by Susan C Berny in 2009 in Australia and New Zealand to determine the physiotherapy mobilization practices in ICU and to document the current physiotherapy practices in ICU patients [9]. The patient mobilization in a single day was low. A complete follow up was required to confirm the result [10-13]. Sarah E Jolley 2010-2011 conducted a cross-sectional study to determine the clinician's attitude and perceived barriers in mobilizing ICU patients early. The study concluded that the staffing and clinician timing, the risk of self-injury, and excess of work load were frequently reported [1].

METHODOLOGY

Study Design

Comparative Cross-sectional study

Setting

ICU's of Government hospitals of Lahore.

Study Duration

The study was completed in 3 months duration after the approval of the synopsis.

Sample Size

A sample of 138 ICU workers was selected from a total population of 20,000. Here, the margin of error was 5%, the confidence level is 95%, and the response distribution is 90% following formula was used for sample size estimation.

Sampling Technique

Convenient sampling

Sample Selection Criteria

Inclusion Criteria:

- Medical doctor, Physiotherapists, or nurses working in I.C.U for at least 6 months
- Physiotherapists attending 5 or more than 5 I.C.U patients per day

Exclusion Criteria:

- Non-registered medical staff

Data Collection Tool

A questionnaire was distributed among study participants. 4 point questionnaire was employed for data collection purposes consisting of information regarding profession and barriers to early progressive mobilization.

Data Collection Procedure

A sample size of 138 medical staff was divided into two groups.

- Group 1 was denoted as medical ICU staff
- Group 2 was denoted as surgical ICU staff

The questionnaire was distributed in both groups and at the end, a comparative analysis was conducted to compare the difference in barriers to early mobility of medical and surgical.

ICU Consideration

Data was taken from the population after informed consent. The research has not inflicted any kind of physical, mental, or emotional harm to the subjects. The researcher followed all ethics of the medical field.

Data Analysis

Data was analyzed using SPSS version 17.0. Descriptive data were calculated by Mean; Mean standard deviation and independent t-test were used for comparison of barriers in both medical and surgical ICU.

RESULTS

One hundred thirty-eight participants were eligible for participation in this study. Sixty-nine participants were from medical ICUs (n=69) and the other sixty-nine participants were from surgical ICUs (n=69) of the government hospitals (Services hospital, Lahore, Lahore general hospital, Jinnah hospital, Lahore, Mayo Hospital, Lahore). Categories of the participants included medical doctors (n=53) consultants (n=22) nursing staff (n=36) and physiotherapists (n=27). The participants have a different experience of working in ICU which vary from six months (n=59), one year (n=39), one to five years (n=23), more than five years (n=17) (Table 1).

Table 1 Representing the characteristics of the 138 participants according to professional group and working experience

Professional Category	Medical Staff n=75 medical doctor=53 consultant=22	Nursing Staff n = 36	Physiotherapy Staff n = 27	
Duration of Working in the ICU of participant	6 months (n=59)	1 year (n=39)	1-5 years (n=23)	> 5 years (n=17)

The first thing in the main part of the research was asked participants to indicate on a VAS (Visual Analogue Scale) to the barriers mentioned in the questionnaire is how much involved in preventing of adoring the mobilization in ICU. Where "0" was indicating the lowest involvement of the barrier and "10" was indicating the highest involvement of the barrier. VAS data regarding staff perception of patient-related barriers, institutional-related barriers, and other barriers to early progressive mobilization are shown in surgical and medical ICU (Table 2).

Table 2 Independent sample t-test for comparison of patient-related barriers of early mobilization between medical and surgical ICU

	Medical ICU (n=69) Mean (SD)	Surgical ICU (n=69) Mean (SD)	t(136)	p-value	Mean difference	95% confidence interval
Patient related barriers	4.67 (0.92)	4.54 (1.14)	0.772	0.441	0.136	-0.21, 0.49

The independent sample t-test shows that the difference between patient-related barriers to early mobilization between surgical and medical ICU was statistically not significant, [t(136)=0.772, p-value and gt; 0.05, 95%CI=-0.21, -0.49].

Table 3 Independent sample t-test for comparison of institute related barriers of early mobilization between medical and surgical ICU

	Medical ICU (n=69) Mean (SD)	Surgical ICU (n=69) Mean (SD)	t(136)	p-value	Mean difference	95% confidence interval
Institute related barriers	4.30(1.45)	6.25 (1.15)	-8.75	0	-1.95	-2.39,-1.51

The independent-sample t-test shows that the difference between institute related barriers to early mobilization between surgical and medical ICU was statistically significant, [t(136)=-8.75, p-value and gt;0.05, 95%CI=-2.39,-1.51] (Table 3).

Table 4 Independent sample t-test for comparison of other barriers related barriers to early mobilization between medical and surgical ICU

	Medical ICU (n=69) Mean (SD)	Surgical ICU (n=69) Mean (SD)	t(136)	p-value	Mean difference	95% confidence interval
Other barriers to ICU mobilisation	5.35 (1.24)	4.92 (1.12)	2.12	0.639	0.428	0.029, 0.827

The independent sample t-test shows that the difference between other barriers related barriers to early mobilization between surgical and medical ICU was statistically significant, [t(136)=2.12, p-value and gt;0.05, 95%CI=-0.29, -0.827] (Table 4).

DISCUSSION

The results of the study showed the significant difference in institutional barriers between surgical ICU (mean=6.25) and medical ICU (mean=4.30) the barriers which were institute related were more commonly perceived by the staff of surgical ICU than the medical ICU. The institute related barriers include staff availability, staff expertise, staff willingness to help, equipment availability, and equipment appropriateness, risk of injury to staff, time constraints, and imminent ward transfer. The list of other barriers in medical ICU (mean=5.35) and surgical ICU (mean=4.92) was significantly different.

The most important limitations of the current study were the sample of convenience and low response rate. We deliberately restricted our sample to staff working in our ICU, rather than undertaking a national or international survey, as this survey formed part of a quality improvement project being undertaken in our ICU. Given that our findings are consistent with previous work, it is likely that similar barriers would be found in other ICUs, hence our results, while undertaken on a sample of convenience within a single ICU, are nevertheless of relevance to other ICUs. Whilst an excellent response rate was seen for physiotherapy staff, probably due to the small number of eligible participants and that this project was being driven by physiotherapists, the response rate from the nursing staff was quite low (27%); the reasons for this are unclear but may include a lack of time/interest. We attempted to maximize participation by administering the survey in paper format. Another limitation of the study was the imbalance between the professional groups who completed the survey; however, this imbalance is reflective of staffing ratios in our ICU. Furthermore, we believe it is the strength of our study that we attempted to recruit all ICU staff, irrespective of their profession, who were likely to be involved in mobilization within our ICU. The lack of communication and the importance of early mobility is also a part of the limitation of our study.

CONCLUSION

The study found that ICU staffs perceive barriers to early mobilization of ICU patients are slightly different in medical and surgical ICU.

DECLARATIONS

Conflicts of Interest

The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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